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Research Article

Synthesis and Characterisation of Oxovanadium(V) Derivatives of *O,O`*-Bis(α-naphthyl, β-napnthyl and 2, 3, 5-trimethylphenyl)dithiophosphates

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Research Article

QUALITY EVALUATION OF WHOLE WHEAT BREAD FORTIFIED WITH GERMINATED RAGI FLOUR

Rosy Bansal* and **Monika Hans**

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ABSTRACT

The ragi (*Eleusine coracana*) flour is rich in protein, energy, vitamins and minerals. Ragi proteins are good source of essential amino acids, these are also rich source of phytochemicals and micronutrients. That is why they act as nutraceuticals. Therefore, efforts were made to prepare multigrain bread using these grain flours after germination. The bread was prepared by replacing whole wheat flour with millet flour at 1,2,3,4, 5% and prepared bread was evaluated for sensory properties using semi trained panel members by using 9-point hedonic scale. In the present investigation the bread at 1-3 per cent level of incorporation of germinated ragi rated almost equal to that of control sample. However, the bread at 5 per cent was not liked very much by most of the panel members. The bread was also evaluated for its physical characteristics, the physical characteristics at 3 per cent replacement level of ragi was as much as comparable to the control sample. The loaf volume, texture, taste, flavour, crust color, crumb color and overall acceptability was decreased with increased percentage of germinated ragi flour in bread.

INTRODUCTION

Cereals are used as staple food almost all over the world. Wheat is the mostly used for human consumption in many areas of the world. Common wheat or bread wheat (*Triticum aestivum)* is the most widely cultivated in the world. Large quantity of wheat is milled into atta (a high-extraction flour), which is used for the production of flat breads, especially chapattis and naans. A lot has, however, happened since the first bread was baked in Egypt approximately 12 000 years ago (Batifoulier F, *et al.*,2005). From the Egyptians random experimentation with flour, water and yeast, via the small, artisan bakeries established in almost every village supplying citizens with their daily rations of bread, to present were centralization and a high technological industrialization have taken toll on the production practice. The use of white flour derived from the processing of whole wheat grain, which is aimed at improving the aesthetic value of white bread, has also led to the drastic reduction in the nutritional density and fiber content when compared to bread made from whole grain cereals (Maneju *et al.*, 2011). Today, bread is produced in a large scale by a few production units and then distributed and re-distributed over large distances to wholesalers, supermarkets and in-store-bakeries (Cauvain S.and Young L. 2000). Wheat is highly nutritious crop which is rich in carbohydrates, vitamins and minerals

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Minerals play a vital role in the maintenance of human health. Cereals and legumes are rich in minerals but the bioavailability of these minerals is usually low due to the presence of ant nutritional factors such as phytate, trypsin inhibitor and polyphenols. Phytic acids is most important anti-nutrient because it is found in most of the cereals and have strong ability to complex multi-charged metal ions, especially Zn, Ca and Fe and make them unavailable for human body utilization. The simple traditional household technologies such as roasting, germination and fermentation, cooking and soaking have been used to process the cereal in order to improve the nutritional quality. To improve nutritional quality and organoleptic properties of cereal based foods genetic improvement, amino acid fortification, supplementation or complentation with protein rich sources and processing technologies are employed (milling, malting, fermentation and sprouting) Chavan and Kadam, 1989a). During germination certain changes occur as the quantity and type of nutrients within the seed. These changes can vary depending on the type of vegetable, the variety of seed and the condition of germination (Bau *et al.*, 1997; Dhaliwal and Aggarwal, 1999). An increase in bioavailability of minerals and weight has been observed due to germination. Germinated seeds are good source of ascorbic acid, riboflavin, choline, thiamine, tocopheroles and pantothenic acid (Sangronis and Machado, 2007). Millets are minor cereals of grass family Poacae. Finger Millets *Eleusine coracana*) have various nutritional qualities, and have rightly been called "nutri-cereals". Wheat is traditionally used in breads, and consumption of millet can be increased by replacing wheat by millet to a required extent.

Monika

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Reactivity of *O,O'*-Bis(α-Naphthyl, β-Naphthyl or 2,3,5-trimethylphenyl) Dithiophosphate Ligands with Germanium Tetrachloride and Trimethyl Germanium Chloride

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ABSTRACT

Reactions of Germanium tetrachloride, $GeCl_4$, or trimethyl germanium chloride, Me_3GeCl, with sodium salt of *O,O'*-Bis(α-Naphthyl, β-Naphthyl or 2,3,5-trimethylphenyl) dithiophosphate ligands, $[\{\alpha\text{-}C_{10}H_7O\text{-},\beta\text{-}C_{10}H_7O\text{-}$, or $(CH_3)_3C_6H_2O\}_2PS_2Na]$, in different molar ratio in chloroform under anhydrous conditions results in the formation of complexes corresponding to $[\{(\alpha\text{-}C_{10}H_7O\text{-}, \beta\text{-}C_{10}H_7O\text{-}$, or $Me_3C_6H_2O)_2PS_2\}_nGeCl_{4-n}]$ (n = 1 or 2) or $[(\alpha\text{-}C_{10}H_7O\text{-}, \beta\text{-}C_{10}H_7O\text{-}$, or $Me_3C_6H_2O)_2PS_2GeMe_3]$ in 85-98% yield. These colorless oily liquid complexes were characterized by elemental analysis, molecular weight determinations, IR and NMR (^1H, ^{13}C and ^{31}P) spectroscopic studies, which revealed monomeric nature of the complexes and monodentate mode of bonding of dithio moiety with germanium atom, leading to a tetrahedral geometry.

Keywords: Bis(α-Naphthyl, β-Naphthyl or 2,3,5-trimethylphenyl) dithiophosphate ligands, Germanium Dithiophosphates.

INTRODUCTION

Acylic dithiophosphate, $(RO)_2PS_2X$, and cyclic dithiophosphate ligands, $OGOPS_2X$, (R = Me, Et, P^n, Pr^i or Bu^t. G = $-CH_2CMe_2CH_2-$, $-CH_2CEt_2CH_2-$, $-CMe_2CH_2CHMe-$ or -

Reactivity of Silicon tetrachloride and Trimethylsilyl chloride with *O, O'*-Bis (α-Naphthyl, β-Naphthyl or 2, 3, 5-trimethylphenyl) dithiophosphate ligands

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Abstract: ***Reactions of silicon tetrachloride, $SiCl_4$, or trimethylsilyl chloride, Me_3SiCl, with sodium salt of O,O'-Bis(α-Naphthyl, β-Naphthyl or 2,3,5-trimethylphenyl) dithiophosphate ligands, [{α-$C_{10}H_7O$-, β-$C_{10}H_7O$-, or $(CH_3)_3C_6H_2O$}$_2PS_2Na$], in different molar ratio in chloroform under anhydrous conditions results in the formation of complexes corresponding to [{(α-$C_{10}H_7O$-, β-$C_{10}H_7O$-, or $Me_3C_6H_2O)_2PS_2$}$_nSiCl_{4-n}$] (n = 1 or 2) or [(α-$C_{10}H_7O$-, β-$C_{10}H_7O$-, or $Me_3C_6H_2O)_2PS_2Si\ Me_3$] in 84-97% yield. These colorless oily liquid complexes were characterized by elemental analysis, molecular weight determinations, IR and NMR (^1H, ^{13}C and ^{31}P) spectroscopic studies which revealed monomeric nature of the complexes and monodentate mode of bonding of dithio moiety with silicon atom, leading to a tetrahedral geometry.***

Key words: Bis(α-Naphthyl, β-Naphthyl or 2,3,5-trimethylphenyl) dithiophosphate ligands, Silicon Dithiophosphates.

I. INTRODUCTION

Acylic dithiophosphate, $(RO)_2PS_2X$, and cyclic dithiophosphate ligands, $OGOPS_2X$, (R = Me, Et, Pr^n, Pr^i or Bu^t, G = -$CH_2CMe_2CH_2$-, -$CH_2CEt_2CH_2$-, -CMe_2CH_2CHMe- or -CMe_2CMe_2- ; X = H, Na or NH_4) occupies an unique position as versatile chelating ligands [1-3]. These ligands show bidentate [4-10], monodentate [11, 13] and also bridging mode of bonding with metals and metalloids [14]. Various dithiophosphato derivatives finds extensive applications in agriculture[15], industries such as extreme pressure oil additives [16], heat stabilizers for polymers [17], hydraulic fluid additives [18], extraction[19], analytical [20] and also show biological activities [21] Literature survey revealed that substantial amount of work has been done with the dialkyl and alkylene ligands with silicon and no information are available on the derivatives of *O,O'*-Bis(α-Naphthyl, β-Naphthyl or 2,3,5-trimethylphenyl) dithiophosphate ligands, [22-25]. Recently, some metal complexes with the ditolyl dithiophosphate ligands have been synthesized and characterized [26-29]. Utilities of some derivatives of ditolyl dithiophosphates in industries [28-30] and agriculture [31] have also been described. Keeping in view of the above interesting facets of dithiophosphate chemistry, we report herein the synthesis and characterization of some new complexes of silicon(IV)
with *O,O'*-Bis(α-Naphthyl, β-Naphthyl or 2,3,5-trimethylphenyl) dithiophosphate ligands, by using silicon tetrachloride, $SiCl_4$, or trimethylsilyl chloride, Me_3SiCl.

II. RESULTS AND DISCUSSION

Silicon the first among the group 14 elements shows its inclination for making more number of bonds than predicated by its valance state. This was perhaps the most compelling reason to distinguish it from its predecessor element, carbon. Consequently the chemistry of silicon becomes the thrust area of research for silicon chemists. The *O,O'*-dialkyl dithiophosphates and *O,O'*-alkylene dithiophosphates complexes of silicon(IV) are well known[11,13]. In these complexes the dithio ligands can bind with silicon(IV) in a monodentate or bidentate manner.....In the present research work we have reacted sodium salt of *O,O'*-Bis(α-Naphthyl, β-Naphthyl or 2,3,5-trimethylphenyl) dithiophosphate ligands, [{α-$C_{10}H_7O$-, β-$C_{10}H_7O$-, or $(CH_3)_3C_6H_2O$}$_2PS_2Na$] with $SiCl_4$ or Me_3SiCl in different stoichiometry and the binding modes of dithio ligands are studied.
Reactions of sodium salt of *O,O'*-Bis(α-Naphthyl, β-Naphthyl or 2,3,5-trimethylphenyl) dithiophosphate ligands, [{α-$C_{10}H_7O$-, β-$C_{10}H_7O$-, or $(CH_3)_3C_6H_2O$}$_2PS_2Na$] with $SiCl_4$ in 1:1 and 1:2 molar ratio in refluxing chloroform, are bit sluggish and proceeds with

MACROBENTHIC INVERTEBRATES OF PADDY FIELD AGRO-ECOSYSTEM

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Abstract: The paddy fields are an important contributor to the aquatic biodiversity as they are also known to be temporary manmade wetlands. The crop cycle of paddy varies as per the variety and local conditions of the area. The crop cycle of the selected study field started with the puddling and irrigation of field during the month of July and ended with the harvest of crop in the month of October. Nitrogen, phosphorus and potassium fertilizers were broadcast time to time as per the requirement of crop variety. The aquatic inhabitants along with growing crop presently enlisted were total of 28 different species including 16 species of zooplankton and 12 species of macro-benthic invertebrates. The investigation commenced through a single cultivation cycle between July and October. The population attributes of the zooplankton and macro benthos so recorded for the season seemed to be influenced greatly by local agricultural practices especially the application of artificial chemical fertilizers. Population dynamics of both these groups varied with the changing concentration of chemicals fertilizers.

Keywords: Irrigation, zooplankton, macro benthic invertebrates, cultivation and fertilizers.

INTRODUCTION

Paddy fields are temporary wetlands also, these areas are considered as rapidly changing ecotones, which are sustained by fast growing as well as rapidly colonizing organisms Heckman (1979) like zooplankton, macrobenthic invertebrates and other aquatic organisms. These organisms play a fundamental role in wetland habitats, for example, in the energy transfer along the food chain and in nutrient cycling in this ecosystem (Chittapun *et al*., 2002 and Downing & Leibold, 2002). Modern technologies of farming utilize fertilizer-responsive varieties along with fertilizers and pesticides which has tremendously increased yield and production but have also caused profound disturbance to stabilized ecosystems. But disadvantage of such farming is that it reduces the number of some species while provoking "blooms" of certain other inhabiting zooplankton and macrobenthic invertebrates. Zooplankton are free floating, microscopic organisms, occupying central position in aquatic food chain and thus act as vital part of any aquatic ecosystem. In fresh water ecosystems they are usually represented by groups Protozoa, Rotifera, Cladocera, Copepoda and Ostracoda. Similarly, macrobenthic invertebrate groups like Annelida, Arthropoda and Mollusca are extremely diverse in fresh waters and mostly inhabit bottom sediments. All these inhabitants act as barometer for measuring the overall biodiversity of aquatic ecosystem.

The main objective of the study was to record overall ecology of zooplanktonic and macrobenthic component of the rice fields along with their physico-chemical parameters and to analyze anthropogenic disturbance in these ecologically important temporary wetlands.

MATERIAL AND METHODS

Analysis of Physico-Chemical Parameters

Measurement of parameters like depth, air temperature, water temperature, pH, DO, FCO_2, CO_3^{2-}, HCO^{3-}, Cl^-, Ca^{2+}, Mg^{2+} and total hardness was done on the spot by following the standard methodology of Adoni (1985) and A.P.H.A (1985).

Analysis of Zooplankton

The zooplankton samples were collected by filtering 20 litres of water through the standard plankton net (25 mesh bolting silk). Finally the volume of planktonic concentrate was filtered to 20 ml and preserved by adding 5% formalin. Zooplankton species identification was done with the help of standard references of Adoni (1985), Battish (1992), Edmondson and Winberg (1971) and Pennak (1978). The number of plankton per ml of the concentrate was calculated by using the formula:

Organism/Litre = A x 1/L x n/V

Where,

V = Volume of 1 drop (ml)

A = Number of organism per drop (ml)

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Crystallographic Analysis of some Structures of Indole Derivatives

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Abstract—*This paper is about the crystallographic comparison of some geometrical and structural features for a series of indole derivatives (Figure 1). The main crystallographic properties which are compared are bond distances, bond angles and torsion angles etc. are discussed in detail, along with their other important properties. This study is based on some basic indole derivatives having two substituents (methyl group and acetic acid) In the entire four compounds, the substituents are same but there crystallographic aspects are entirely different.*

1. INTRODUCTION

Indoles continue to be of great interest to the pharmaceutical industry and at the current time several thousand specific new derivatives are reported annually. Research has been driven by the wide range of indole derivatives which occur in nature and through the biological activity of many indole derivatives, of both natural and synthetic origin. Indole and its derivatives have occupied a unique place in the chemistry of nitrogen heterocyclic compounds [1]. The indole derivatives were known for their dying properties. Many compounds of indole derivatives having the structural resemblance to the ancient dye indigo are known in the literature. A large number of naturally occurring compounds, like alkaloids, were found to possess indole nucleus. The recognition of the plant growth hormone, heteroauxin [2] , the important amino acids, tryptamine [3] and tryptophan [4], antiinflammatory drug, indomethacine [5] and anticancer drug, isatin derivative [6][7]are the important derivatives of indole which have added stimulus to this research work. Reference code and name of the studied indoles derivatives are given in Table 1.

2. RESULTS AND DISCUSSION

2.1. Biological activity predictions using PASS software

Biological activity of indoles is one of the most important reasons for their synthesis and structural characterization. It is the result of chemical compound's interaction with biological activity that a total matrix of activities caused by the compound is generated which is generally referred to as the *biological activity spectrum of the substance*. It is a concept that is crucial to PASS (Prediction of Activity Spectra for Substances) software which provides the rationale for predicting many activity types for different compounds [8-9]. The structural formula of a molecule is presented as a *mol* file and the predictions result in the form of a table containing the list of biological activities on a scale of probability ranging from 0-1. Two values are computed for each activity: P_a - the probability of the compound being active and P_i - the probability of the compound being inactive for a particular activity. Activities with $P_a > P_i$ are retained as the most probable and predicted ones for a given compound. The P_a and P_i values for the molecules (I-IV) are presented in Table 2.

2.2. Comparative Geometrical Parameters

The structure of all the four derivatives of indole studied, are given in Figure 2. In the entire compound studied, the side chain of indole consists of a methyl group and an acetic acid group. The double bond C=O distance for all the four derivatives are 1.217(3) Å, 1.2252(2) Å, 1.223(5) Å, 1.211(3) Å for compound I, II, III, IV respectively. The C-O single bond distances in carboxylic acid group in compound I, II, III, IV are 1.3(3) Å, 1.323(2) Å, 1.306(5) Å, and 1.308(3) Å respectively. The O-H distance of carboxylic acid for compound I, II, III, IV respectively are 1.01(3) Å, 0.87(2) Å, 1.10(5) Å, 0.851(2) Å which shows that the O-H bond distance in I & III and II & IV are nearly same. The N-H distances for compound I, II, III, IV are 0.90 Å, 0.88(2) Å, 0.75(3) Å and 0.877(1) Å respectively. The bond distance value of C-C corresponding to the carbon atom of the ring and methyl group of the side chain is nearly equal to the standard C-C single bond distance [8]. The value of bond angle O=C-O in compound I, II, III, IV are 122.1(2) 122.56(1) 122.0(4), 123.1(2) respectively. The C-O-H bond angle in order in all

Quality Evaluation of Whole Wheat Bread Fortified with Germinated Soya Flour

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Abstract: Soyabean (*Glycine max*) is known for its nutritional value and its wide utilization at household as well as industrial level. These have various nutritional qualities, and have rightly been called "nutri-cereals". Germination of seeds is one of the best methods to be utilized in the improvement of nutritional profile of the seed grains and which will be used for the development of various food products also known as functional foods. It also improves the bioavailability of the various minerals, vitamins and dietary fibers which are of immense significance from both health as well as nutritional point of view. During germination certain changes occur as the quantity and type of nutrients within the seed. The increased concentration of germinated soya flour blends affects the physiochemical properties like ash, fat, moisture proteins etc. The proximate values of these parameters were lowest in the control bread and increases as the concentration of germinated soya flour increases.

Keywords: *Soyabean, legume, Functional food, Germination, Soya flour.*

I. INTRODUCTION

Food has long been used to improve health. The relationship between food and health is used to improve food. Food and nutritional sciences help in designing food that reduce risk to diseases and promote nutritionally healthy food. Strategies have been used to address protein deficiencies by food diversification (FAO, 1997). Fortification of food by amino acids, high quality protein and protecting damage of protein caused during processing and packaging of the manufactured product (Friedman, 2004)

Food fortification or enrichment is process in which food product modified with the nutrients which were not originally present in the food product. The first fortification took place in 1821 when a French chemist jean added iodine to salt which help in reduction of goiter. In the rapidly changing scenario more highly processed foods has been used to justify the addition of nutrients to an expanding range of food in order to ensure nutritional adequacy of the diet (Lachance and Bauernfiend, 1991; Hoffpauer, 1994) . Cereals are important source of energy and protein in human diet. Cereal grains are grown in greater quantity and provide more food energy worldwide than any other type of crop; they are therefore staple crops.

Bread is one of the most staple diets. Combinations of different flours, and differing proportions of ingredients, has resulted in the wide variety of types, shapes, sizes, and textures available around the world. It may be leavened (aerated) by a number of different processes ranging from the use of naturally occurring microbes to high-pressure artificial aeration during preparation and/or baking, or may be left unleavened. The use of white flour derived from the processing of whole wheat grain, which is aimed at improving aesthetic value of white bread, has also lead drastic reduction in nutritional density and fiber content when bread compare to bread made from whole grain cereals (Maneju *et al.* 2011). Bread being good source of nutrient is deficient in proteins and certain essential amino acids. Bread being made from wheat can be used as vehicle for fortification and considered a good source of functional foods. Recently consumers' awareness to eat healthy and high quality food known as fortified or functional foods is increasing. Functional foods are foods which contains ingredients that provide additional health benefits and meet the health benefits (Ndife and Abbo, 2009). The American Dietetic Association describes functional foods as foods that "have a potentially beneficial effect on health when consumed as part of a varied diet on a regular basis, at effective levels" (Anon, 1999). A functional food is typically a food product that health claims may be made about to increase consumers' interest and purchases. In the United States a health claim is a claim on a food label that shows a relationship between a "nutrient" in the food and a disease or health-related condition (Clydesdale, 1997). The "nutrient" may be naturally found in a food, added to a food product from another food, added to a food product from somewhere other than the food supply, or added to a food product through the creation of a totally new food. Food processing technologies, traditional breeding, or genetic engineering may be used for these purposes (Pariza M, 1999). However, some of these methods may reduce the functionality of the "nutrient" and this should be taken into consideration. The enrichment of bread and other cereal based product with legumes flour particularly in region where protein utilization is inadequate has long been recognized. This is because legumes, nutritionally protein are high in mineral, vitamin B and lysine an essential limiting amino acid in most cereals (Jideani and Onwubali, 2009). Legumes therefore complement cereal when blended at optimum ratio (Okoye and Okaka, 2009). Legumes have a very specific place from the nutritive point of view and play an important role in nourishment of world population. Protein content in legume grains range from 17 % to 40 %, contrasting with 7 – 13 % of cereals (Bojňanská, 2004), and being equal to the protein contents of meats that is 18 – 25 % (Čuboň et al. 2011). Addition of legumes to cereal products increases their fiber content resistant starch (Utrilla-Coello *et al.* 2007), important minerals (Dhingra and Jood, 2001; Dalgetty and Baik, 2003; Costa de Almeida *et al.* 2004) and vitamins. Their consumption has positive impact on health conditions of consumers (Goni and Valentin-Gamazo, 2002; Johnson *et al.* 2005; Hawkins and Johnson. 2005; Pittway *et al.* 2007). Soya bean (*Glycine max*) is a species of legume native to East Asia, widely grown for its edible bean which has numerous uses. Soya bean are considered by many agencies to be a source of complete protein (Lucas, E., Wild, R., Hammond, L.). A complete protein is one that contains significant amount of all the essential amino acids that must be provided to the human body because of body's inability to synthesis them. Phytochemicals, nonnutritive substances that help to maintain good health, are considered functional in

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The effect of adding non-conventional ingredients and hydrocolloids to desirable quality attributes of pasta. A Mini Review

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ABSTRACT

As consumption of pasta is becoming more popular especially among the school children, pasta will supply essential nutrition. Moreover, value addition of pasta with different non-conventional ingredients would be helpful in promoting utilization of these with advantage of having several health benefits. Furthermore, the results of this study could provide the industry useful information about potential utilization of different non-conventional ingredients in food formulations and product development for new functional foods.

Introduction

Pasta is most popular and highly convenient food product consumed worldwide. The general term pasta refers to unleavened fresh or dried wheat/semolina dough simply composed of water, flour and sometimes eggs. It is manufactured by blending durum semolina and water to form a homogeneous mixture followed by kneading and finally extruding the mixture into desired shapes and subsequently drying (Aktan and Khan, 1992). *Macaroni*, *spaghetti* and *vermicelli* are different shapes of pasta usually made from durum semolina (*Triticum durum*) which is the best and the most suitable raw material for pasta production due to its unique colour, flavour and cooking quality (Feillet and Dexter, 1998). Generally, common wheat (*Triticum aestivum*) based pasta products have a lower texture quality in comparison with durum wheat. Pasta utilization has increased due to its ease of transportation, handling and cooking preparation (Tudorica et al., 2002). Pasta is a good source of carbohydrates, 74 to 77% (db) and proteins, 11 to 15% (db), but is deficient in lysine and threonin (the first and second limiting amino acids) common to most cereal products (Abdel-Aal and Hucl, 2002). Pasta is considered highly digestible and provides complex carbohydrates, proteins and vitamins. World Health Organization (WHO) and Food and Drug Administration (FDA) consider it a suitable vehicle for incorporation of nutrients (Chillo et al., 2008). Its nutritional quality can be enhanced through addition of non-traditional raw materials rich in fibers (Brennan et al., 2004; Chillo et al., 2008), vitamins and polyunsaturated fatty acids (Iafelice et al., 2008; Verardo et al., 2009).

It was observed that incorporation of non-conventional ingredients into pasta at higher levels does not show better pasta cooking quality characteristics, so there is need of addition of hydrocolloid (Gull et al., 2016b). Generally, hydrocolloids such as carboxy methyl cellulose and guar gum aid in gelling, thickening, water retention and texture improvement (Gallagher et al., 2004) and they can be utilized for the development of healthy pasta products.

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Review

Effect of plant extracts on the techno-functional properties of biodegradable packaging films

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https://doi.org/10.1016/j.tifs.2018.08.004

Abstract

Background

One of the innovations in food packaging includes the development of biodegradable films based on wide range of ingredients. The utilization of these ingredients affects the properties of developed packaging films.

Scope and approach

This review provides the recent insights on the effect of plant extracts on the techno-functional properties of biodegradable films including physical, mechanical, barrier, functional, antioxidant and antimicrobial properties. The incorporation of plant extracts into films is a promising method to prevent or reduce the deterioration of food quality, thus contributing to preserving and extending the shelf life of food.

Key findings and conclusions

Recent investigations emphasis on the identification of extracts from various plant sources such as leaves, fruits, pomace, seeds, etc. for use in biodegradable polymers. Plant extracts represent an interesting ingredient for biodegradable food packaging material, mainly due to their natural origin and phytochemical properties allowing for

Original Paper | Published: 12 December 2017

Microencapsulation of *Murraya koenigii* L. leaf extract using spray drying

Vandana Sablania, Sowriappan John Don Bosco ✉, Shubham Rohilla & Manzoor Ahmad Shah

Journal of Food Measurement and Characterization **12**, 892–901 (2018)

Abstract

This study investigated the effect of various extraction temperature and carrier agents on *Murraya koenigii* L. leaf extract to improve the stability of its phenolic components. Hence, the extraction was carried out at temperatures of 70, 80, 90 °C and encapsulated using different carrier agents such as maltodextrin, gum arabica, xanthan and starch. The encapsulated extracts were evaluated for physicochemical properties such as moisture content, water activity, bulk density, tapped density, dissolution efficiency, flow properties, colour, FTIR,

(10)

Regular Article | Published: 22 November 2018

Investigation of quasi-particle structure of proton-hole indium nuclei

Suram Singh, Amit Kumar, Surbhi Gupta, Arun Bharti, G. H. Bhat & J. A. Sheikh

The European Physical Journal Plus **133**, Article number: 472 (2018)

Abstract.

The present work focuses on the successful application of the Projected Shell Model (PSM) in studying the yrast bands of neutron-rich odd-mass $^{111-119}In$ nuclei. For these isotopes, the band structures have been analyzed in terms of quasi-particles configurations. The phenomenon of rotational alignment and back bending in moment of inertia is also studied in the present work. The intrinsic structure of $^{111-119}In$ nuclei in the present study has also been described as arising due to an interplay between proton and neutron orbitals belonging to 1- and 3-qp configurations. Besides this,

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Microscopic study of band structure of ^{102}Nb

Suram Singh ✉ [a]; Amit Kumar [b]; Surbhi Gupta [c]; Anuradha Gupta [d]; Dhanvir Singh [e]; Arun Bharti [f]

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AIP Conf. Proc. 2006, 030010 (2018)

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A systematic study of two-quasiparticle bands of the odd-odd ^{102}Nb nucleus is performed using the projected shell model approach. Yrast band with some other bands have been obtained and back-bending in moment of inertia has also been calculated and compared with the available experimental. On comparing the available experimental data it is found that the treatment with PSM provides a satisfactory explanation of the available data.

Topics

Quasiparticle, Bending moment, Nuclear structure models

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Rotational structure of the odd-odd nuclide ^{86}Rb

Surbhi Gupta; Rajat Gupta; Amit Kumar; Dhanvir Singh; Anuradha Gupta; Suram Singh; Arun Bharti

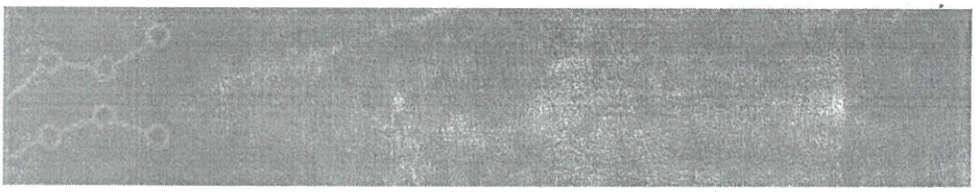
AIP Conf. Proc. 2006, 030011 (2018)

https://doi.org/10.1063/1.5051267

The characteristic nuclear structure properties of doubly odd ^{86}Rb nucleus has been studied within two-body effective interactions incorporated in a self-consistent quantum mechanical approach known as - Projected Shell Model to test the efficacy of the chosen valence space. The Projected Shell Model (PSM) uses a truncated valence space under the assistance of the deformed mean-field solutions so as to make the calculations feasible. The influence of the high-j orbitals, $h_{11/2}$ for neutrons and $g_{9/2}$ for protons on the structure of ^{86}Rb isotope is investigated in the present work by assuming an axial symmetry in the deformed basis. For this isotope, PSM calculations are performed to obtain the yrast line and also the description of the formation of the yrast level structure from multi-quasi-particle configurations. The back-bending in moment of inertia and transition energies have also been calculated and compared with the experimental data. The reduced transition probabilities, i.e., $B(E2)$ and $B(M1)$ for the yrast band are also obtained from the PSM wave functions for the first time, thereby extending an opportunity for the experimentalists to work for this data.

Topics

Bending moment, Axial symmetry, Nuclear structure models, Educational assessment, Markov processes



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Band structure of neutron-deficient iodine nucleus

Chanvir Singh; Amit Kumar; Surbhi Gupta; Suram Singh ✉; Arun Bharti

+ Author & Article Information
AIP Conf. Proc. 2006, 030006 (2018)
https://doi.org/10.1063/1.5051262

By using a microscopic method known as Projected Shell Model (PSM), positive-parity band structure of odd mass neutron-deficient ^{117}I nucleus has been studied with the deformed single-particle states generated by the standard Nilsson potential. For this isotope, the band structure has been analyzed in terms of quasi-particles configurations. The phenomenon of back bending in moment of inertia is also studied in the present work.

Topics
Bending moment, Nuclear structure models, Chemical elements

RESEARCH ARTICLE | AUGUST 17 2018

Theoretical investigation of nuclear structure properties of ^{144}Gd, ^{146}Dy and ^{148}Er isotones

Amit Kumar ; Charvir Singh; Surbhi Gupta; Suram Singh; Arun Bharti

— Author & Article Information
AIP Conf. Proc. 2006, 030002 (2018)
https://doi.org/10.1063/1.5051258

Some N=80 isotones (^{144}Gd, ^{146}Dy and ^{148}Er) have been studied by using the HFB framework and the nuclear structure properties like yrast spectra, subshell occupation numbers and quadrupole moments have been obtained. Intrinsic quadrupole moments obtained from HFB calculations show a gradual increase as one moves from ^{144}Gd to ^{148}Er indicating, thereby, an increase in deformation, which is in agreement with the experimental results. From the results of subshell occupation numbers, it is clear that subshells $3s_{1/2}$, $2d_{3/2}$, $2d_{5/2}$, $1g_{7/2}$ and $1h_{11/2}$ of protons are contributing towards the development of deformation as one moves from ^{144}Gd to ^{148}Er.

Topics

Nuclear structure, Public policy and governance

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Nuclear Physics | Published: 13 November 2017

Projected Shell Model Description of Positive Parity Band of ^{130}Pr Nucleus

Suram Singh, Amit Kumar, Dhanvir Singh, Chetan Sharma, Arun Bharti ✉, G.H. Bhat & J.A. Sheikh

Brazilian Journal of Physics **48**, 85–91 (2018)

Abstract

Theoretical investigation of positive parity yrast band of odd-odd ^{130}Pr nucleus is performed by applying the projected shell model. The present study is undertaken to investigate and verify the very recently observed side band in ^{130}Pr theoretically in terms of quasi-particle (qp) configuration. From the analysis of band diagram, the yrast as well as side band are found to arise from two-qp configuration $\pi h_{11/2} \otimes \nu h_{11/2}$. The present calculations are viewed to have qualitatively reproduced the known experimental data for yrast states, transition energies, and $B(M1)$ / $B(E2)$ ratios of this nucleus. The recently observed positive parity side band is also reproduced

FRIENDSHIP QUALITY IN SAME-SEX FRIENDSHIP AMONG ADOLESCENTS

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Abstract

A high quality friendship is good for health and longetivity. Friendship is a relationship in which two people spend a great deal of time together, interact in a variety of situations, and provide emotional support to each other. A closed friend is always valued for his or her sensitivity and honesty. There is a limited literature on the role of friendship quality among adolescents. To address this gap, the present study aimed to assess the gender differences on four indices of friendship quality (closeness, help, acceptance and safety). A sample of 64 participants (32 male and 32 female) was collected for the study. Friendship Quality Scale was used as a tool to assess four dimensions of friendship. t test was used for the analysis. The mean scores indicated that females provide more safety, show more acceptanc and are more helping than males. Results indicated a significant difference on closeness and help di friendship quality. No significant difference was found on safety and acceptance dimensions of friend Significant difference was also found for overall friendship quality.

Keywords: acceptance, closeness, friendship, help, safety

Introduction

An individual sees many changes from childhood to adolescence such as social situations and social serve to elevate the importance of friends. Friendship is usually referred to be the voluntary exp mutual relationship (Margalit, 2010). Human beings are social creatures who are motivated to be aff others. They have a sense of belongingness in meaningful relationships outside that of family and l interpersonal relationships has a significant negative impact on physical as well as mental h individual (Baumeister and Leary 1995). The literature reveals that closeness, acceptance, help, an found to have positive relationship with one and other (Thien & Nordin, 2013) The term Friendshi used to describe student characteristics demonstrated in friendship (Berndt & Keefe, 1995; Berndt & Murphy, 2002). High quality friendship is always characterized by high level of positive features such as pro-social behavior, intimacy, and loyalty whereas low levels of negative features such as conflicts and rivalry (Berndt & Murphy, 2002). It is a relationship in which the persons enter into contact with somebody original, unique and

irreplaceable, somebody that is close to them and unselfishly devoted (Wright 1969). It is essential for the social development of the adolescent. Friends raise our self-esteem, increase our sense of well-being, help in the process of socialization, support one another in coping with developmental transitions and various stress and strains of life (Jelle, Sijtsema, Hawley & Little 2010). Friends engage in different activities with one another across the life span, but the relation of friendship is understood similarly by children and adults. The outcome of friendship depends upon whether the friends are supportive and intimate or unsupportive and unstable (Willard, Hartup & Stevens, 1999). The research on the quality of adolescent friendships has been plentiful in recent years.

Hartup (1996) found that friendship gives the opportunity to develop social, cognitive, and emotional capabilities and to experience new types of relationships. High quality friendships are related to the regulation of emotions (Gauze,Bukowski,Aquan-Assee & Sippola, 1996), social competence (Buhrmester, 1990), problem solving abilities and academic success and adjustment (Berndt & Keefe, 1995).

Young people enjoy spending more time with age mates, often with reduced oversight by adults, and they put greater emphasis on the expectations and opinions of peers. Research reveals that, peers sometimes compete with adults as a significant source of influence on adolescent attitudes, activities, and emotional well-being (Bernot & Murphy,2002;Hartup,1999). An important characteristic of friendship is that the partners share many

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Effect of homogenized recombined milk on functional properties of mozzarella cheese

Monika Hans, Suresh Bhise and KS Minhas

Abstract
Effect of homogenization of milk on functional properties of mozzarella cheese was examined to develop mozzarella cheese from recombined milk with desirable textural and melting properties. Recombined milk was homogenized at 1000 psi. When the results of mozzarella cheese manufactured from cheese made from homogenized and unhomogenized recombined milk were compared values for moisture, protein, expressible serum, meltability and fat leakage content were low for cheese made from homogenized milk. Homogenization of recombined milk had no significant effect on stretchability and acidity of cheese.

Keywords: homogenized, recombined milk, functional properties, mozzarella cheese

Introduction
Milk and milk related products account for 17 per cent of India's total expenditure on food. India has emerged as largest milk producing country in the world. The organised cheese market including its variant like processed cheese, mozzarella cheese spreads, flavoured and spiced cheese is valued at around Rs 4.5 billion. Cheese is becoming popular item in the menu of all relatively affluent families. The demand for cheese is projected to grow over Rs 11.00 bn by the terminal year of projection period 2014-15.

Mozzarella cheese belongs to family ''pasta filata'' i.e ability to form strings. Mozzarella cheese is made in many countries from cow milk, buffalo milk and even milk powder. Milk production pattern faces great fluctuation/Variation during course of year. Production of milk is abundant during winters and falls dramatically during summer months. During flush/ glut season milk solids are conserved by processing them into a number of concentrated and dried products so that these can be put into use in the lean period. These milk solids are used for the manufacture of mozzarella cheese having higher shelf-life than normal milk. In the present work, the effect of adding milk powder on cheese making characteristics during manufacture by recombination of mozzarella cheese was studied. The crucial investigation was to determine the cheese making ability of recombined milk in terms of rennet coagulability, cheese stretchability, melting properties and cheese yielding capacity in comparison to fresh milk.

Materials and Methods
Preparation of mozzarella cheese from recombined milk Skim milk powder was recombined by adding water, additional milk and cream adjusting total solids 12, 14 and 16 per cent and casein fat ratio 0.7 per cent. The milk used for cheese making was homogenized at 1000 Mpa at 60^{0}C. Recombined milk was pasteurized at 72^{0}C for 15 sec and cooled to 25^{0}C, pH of the milk was lowered to 5.7 using citric acid solution (5%). The temperature of the milk was then increased to 30^{0}C and rennet was added with continuous stirring. Curd was allowed to set for 15-20 minutes, the set curd was cut into cubes. After cutting curd was allowed to settle for 5 to 10 min and then was gently agitated gradually. There after citric acid solution was added to further reduce pH to 5.2. The temperature of curd was increased to 40^{0}C As soon as desired temperature was attained the water was drained off and curd pressed in cheese press for 5-10 minutes. After removing from the pre-cheese from cheese press, pre-cheese was packaged in polyethylene bags and stored. Stored pre-cheese was stretched in hot water at 75^{0}C till a breast type structure was obtained.

Monika Hans

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Seminormed double sequence spaces of four-dimensional matrix and Musielak–Orlicz function

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Abstract

In this paper we study seminormed double sequence spaces of a four-dimensional matrix and Musielak–Orlicz function over n-normed spaces. We explore some interesting inclusion relations, algebraic and topological properties of these spaces.

MSC: Double sequences; Orlicz function; Difference sequences; Seminormed spaces; n-normed spaces

Keywords: 40A05; 40A99; 46A30

1 Introduction and preliminaries

Generalizations of single sequence spaces are double sequence spaces which were initially given by Bromwich [2]. Later on, these spaces were investigated by Hardy [13], Móricz and Rhoades [24, 25], Tripathy [39, 40], Başarır and Sonalcan [1] and many other researchers. Hardy [13] presented the idea of regular convergence for double sequences. Recently, Hazarika and Esi [14] studied generalized difference paranormed sequence spaces defined over a seminormed sequence space using ideal convergence. A double sequence $x = (x_{kl})$ is a double infinite array of elements x_{kl} for all $k, l \in \mathbb{N}$. A double sequence has Pringsheim's limit L if, given $\epsilon > 0$, there exists $n \in \mathbb{N}$ such that $|x_{kl} - L| < \epsilon$ whenever $k, l > n$. We shall write it as $P\text{-}\lim_{k,l\to\infty} x_{kl} = L$, where k and l tend to infinity independent of each other. Throughout this paper, the limit of a double sequence means a limit in the Pringsheim's sense.

Let w, l_∞, c and c_0 denote the spaces of all, bounded, convergent and null sequences, respectively. Kizmaz [16] explored the concept of difference sequence spaces and studied the difference sequence spaces $l_\infty(\Delta)$, $c(\Delta)$ and $c_0(\Delta)$. This concept was further explored by Et and Çolak [7] who introduced the spaces $l_\infty(\Delta^m)$, $c(\Delta^m)$ and $c_0(\Delta^m)$. Let m be a nonnegative integer. Then for $Z = c, c_0$ and l_∞, these sequence spaces are defined as

$$Z(\Delta^m) = \{x = (x_k) \in w : (\Delta^m x_k) \in Z\},$$

DOUBLE DIFFERENCE SPACES OF ALMOST NULL AND ALMOST CONVERGENT SEQUENCES FOR ORLICZ FUNCTION

KULDIP RAJ AND RENU ANAND

ABSTRACT. The objective of this paper is to introduce and study some double difference spaces of almost null and almost convergent sequences defined by a Musielak-Orlicz function. We prove that these spaces are Banach, Barreled and Bornological spaces. An attempt is also made to prove that these spaces are BDK spaces and prove some interrelationship between these spaces.

1. INTRODUCTION AND PRELIMINARIES

The initial work on double sequences is found in Bromwich [4]. Later on, it was studied by Hardy [10], Móricz [15], Móricz and Rhoades [16], Tripathy ([27],[28]), Başarır and Sonalcan [2] and many others. Hardy [10] introduced the notion of regular convergence for double sequences. Quite recently, Zeltser [30] in her Ph.D thesis has essentially studied both the theory of topological double sequence spaces and the theory of summability of double sequences. Mursaleen and Edely [17] have recently introduced the statistical convergence and Cauchy convergence for double sequences and given the relation between statistical convergent and strongly Cesàro summable double sequences. Next, Mursaleen [1] and Mursaleen and Edely [18] have defined the almost strong regularity of matrices for double sequences and applied these matrices to establish a core theorem and introduced the M -core for double sequences and determined those four dimensional matrices transforming every bounded double sequences $x = (x_{kl})$ into one whose core is a subset of the M -core of x. The set of all complex valued double sequences is a vector space with coordinatewise addition and scalar multiplication which is denoted by Ω.

By the convergence of a double sequence we mean the *convergence* in the Pringsheim sense .e. a double sequence $x = (x_{kl})$ has Pringsheim limit L (denoted by $P\lim x = L$) provided that given $\epsilon > 0$ there exists $n_0 \in \mathbb{N}$ such that $|x_{kl} - L| < \epsilon$ whenever $k, l > n_0$. We shall write more briefly as P-convergent. The space of all convergent double sequences in Pringsheim's sense is denoted by C_p.

A double sequence $x = (x_{kl})$ of complex numbers is said to be *bounded* if $\|x\|_\infty = \sup_{k,l\in\mathbb{N}} |x_{kl}| < \infty$, where $\mathbb{N} = \{0, 1, 2, \ldots\}$. The space of all bounded double sequences is denoted by $\mathbf{M}_u$, which is a Banach space with the norm $\|.\|_\infty$.

It is well known that there are such sequences in the space C_p but not in the space $\mathbf{M}_u$. Indeed, if we define the sequence $x = (x_{kl})$ by

$$x_{kl} = \begin{cases} k, & k \in \mathbb{N} \\ 1, & l \in \mathbb{N} \\ 0, & k, l \in \mathbb{N} \setminus \{0\}, \end{cases}$$

2010 *Mathematics Subject Classification.* 46A45, 40C05.

Key words and phrases. Orlicz function, Musielak-Orlicz function, sequence space, double sequence, P-convergent, almost convergence.

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Green Nanotechnology in Herbal Medicine and Ayurveda

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Abstract: Green Nanotechnology is the study of how nanotechnology can benefit the environment, such as by using less energy during the manufacturing process, the ability to recycle products after use, and using eco-friendly materials. Nanctechnology covers the diverse area of matters at dimensions between approximately 1 to 100 nanometers. Herbal medicines have been widely used all over the world since ancient times and have been recognized by physicians and patients for their better therapeutic value as they have fewer adverse effects as compared with modern medicines. Phytotherapeutics need a scientific approach to deliver the components in a sustained manner to increase patient compliance and avoid repeated administration. This can be achieved by designing novel drug delivery systems (NDDS) for herbal constituents. The integration of the nanoscience as a NDDS in traditional system of medicine enriches the potential of herbal drugs for treating chronic diseases. Ayurveda is thousands of years old holistic system of Indian medicine. Various herbs, metals and non-metal preparations are used as medicine in Ayurveda. This review paper opens door to a completely new dimension in herbal medicine and ayurveda using green nanotechnology.

Keywords:green nanotechnology, novel drug delivery systems, herbal medicine, ayurveda.

Swachh Bharat Abhiyaan and Swachh Bharat Summer Internship

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ABSTRACT

Swacchta that is cleanliness is the abstract state of being clean and the habit of achieving and maintaining that state. Cleanliness may imply a moral quality, as indicated by the aphorism "cleanliness is next to godliness", and may be regarded as contributing to other ideals such as health and beauty. On 2nd October, 2014, Prime Minister of India launched a nationwide cleanliness campaign called Swachh Bharat Mission. It is India's largest ever cleanliness drive. The objectives of Swachh Bharat are to reduce or eliminate open defecation through construction of individual, cluster and community toilets. The concept of SBM is to provide sanitation facility to every family, including toilet, solid and liquid waste disposal system, village cleanliness and safe and adequate drinking water. The Ministry of Human Resource Development in association with the Ministry of Drinking Water and Sanitation has launched the '**Swachh Bharat Summer Internship – 100 Hours of Swachhata**' programme for the period from 1st May 2018 to 31st July 2018.This program involves the construction of bathrooms in public areas, promoting sanitation awareness in rural areas, cleaning streets, bringing behavioral changes to people, and converting India an ideal country before the world. This paper presents a review on swachh bharat abhiyaan and various activities of SBSI performed in an adopted village of Jammu.

Key Words: *swachh bharat mission, swachh bharat summer internship, cleanliness.*

22

GREEN BUILDINGS FOR SUSTAINABLE DEVELOPMENT

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ABSTRACT

Global sustainability goals have led to the development of the green building movement. Sustainable development and green buildings are often used interchangeably. Although sustainable development and green buildings are related, they are not the same. Increase in demand of houses which lead to consumption of more energy, resources and raw materials which are responsible for the rise in carbon content in air which are harmful to environment and human health. Nowadays we are facing various environmental impacts due to which we need to build with more sustainable materials which will lead to reduction of impacts on environment. This paper provides an overview of how green building relates to sustainable development practices and deals with the various energy saving concepts which can be incorporated at the time of planning, designing, construction and execution stage to have energy efficiency in buildings keeping in mind the cost perspective.

Key Words: *sustainability, green buildings, environment, sustainable development.*

Introduction

Sustainability has become increasingly important in the building industry in recent years. A movement has occurred to construct buildings in a more efficient and sustainable manner by reducing energy use and the costs associated in operating and maintaining the buildings. A green building is an outcome of a design philosophy which focuses on increasing the efficiency of resource use; energy, water, and materials while reducing the impact on human health and the environment during the building's lifecycle, through better design, construction, operation, maintenance and removal.

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Urbanization is growing on a faster pace throughout the world resulting into multifarious environmental problems of serious nature. These problems include air pollution, heat island, adverse health effects, water and noise pollution, waste disposal, social and economic. To address a portion of the ecological issues.

23

OLD AGED WOMEN IN INDIA - OUR MOTHERS

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Abstract

Greying of population is one of the most significant characteristics of the twenty-first century. Despite substantial growth in proportion of both male and female elderly around the world, a strong preponderance of women has been established amongst 60 years and above in most of the countries. This phenomenon is called "Feminisation of ageing" which is currently dominant in developed nations but is picking up pace in developing countries. As per census 2001, in India there were 1021elderly women per one thousand elderly men. Elderly women face numerous deprivations during their life course due to various socio cultural factors. Older women, who are still living with their sons/daughters and grand-children are also suffering from emotional alienation. Older women, who live in semi urban situations/industrial townships also find it difficult to cope with old age, particularly after their children have grown up and husbands retire. With increased life span of older women in old age, their financial needs are emerging as a major concern. Due to negligence, lack of awareness and less financial support, older women often have to face acute health problems. Emotional support is much needed in old age. We must give time, love and affection to our old aged women- our mothers which they desire and deserve for.

Key Words *: greying , feminisation, ageing , old aged women, emotional support.*

INTRODUCTION

Population ageing is a worldwide phenomenon, and India is no exception. Its population has approximately tripled during the last 60 years, but the number of elderly population has increased more than fourfold. Better medical facilities, care and liberal family planning policies made the elderly the fastest growing section of the society in India. It has been projected that by the year 2050, the number of elderly people would rise to about 325 million. The elderly people experience different aspects in their lives. They suffer from different physiclogical changes and decline in the normal functioning of body like decline in memory, vision, inability to eat and digest food, etc. In India, majotiry of 75 percent of elderly persons are living in rural areas. About 48.2 percent of elderly persons are women, out of whom 55 percent are widows.

Major Concerns of Older Women

■ Destitution/ Alienation / Isolation

Older women, who are still living with their sons/daughters and grand-children are also suffering from emotional alienation. Due to fast changing socio-economic scenario of the country, fast paced modern life style & rapid urbanization across the country younger generations hardly interact with their elderly family members. Popularity of nuclear family system has virtually crushed strong traditional bond between grand-children & grandmothers.

■ Social Insecurity

Older women, who live in cities, are prone to social alienation/marginalization in comparison to older women of villages. Joint family system (to a certain extent) is still alive in rural areas. Older women, who

SAY YES TO ENERGY SAVINGS!

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ABSTRACT

The most important goals of sustainable development are to reduce the adverse consequences of the substances that we use and generate. It is a challenge before chemists to develop synthetic methods that are less polluting i.e. to design clean or 'green' chemical transformations. But it is not only the duty of the chemists to develop green methods. The general public should also explore ideas to go green and save green. Keeping in view that there is no planet b, we must have to discover certain ideas to go green and save green. We must save energy. Let us be selfish. Let us save energy to save money. Various ideas to save energy have been discussed in this paper. It is hoped to find a real practical solution for environmental degradation and save energy. Let us go green and save green.

Keywords: *sustainable development, energy, green methods.*

INTRODUCTION

The first principle of the Rio Declaration on Environment and Development states that "*Human beings are at the centre of concerns for sustainable development they are entitled to a healthy and productive life in harmony with nature*" which highlighted the challenge to all of us to define the objectives of sustainable development and to provide scientific, technological and social tools to achieve these objectives. The role of chemistry is essential in ensuring that our next generation of chemicals, materials and energy is sustainable. Worldwide demand for environment-friendly chemical processes and products requires the development of novel and cost-effective approaches for preventing pollution. The most important goals of sustainable development are to reduce the adverse consequences of the substances that we use and generate. It is a challenge before chemists to develop synthetic methods that are less polluting i.e. to design clean or 'green' chemical transformations. But it is not only the duty of the chemists to develop green methods. The general public should also explore ideas to go green and save green. Keeping in view the importance of preserving energy and going green, we must take certain steps to stop climate change to make our lives better. We must save energy . Lets be selfish. Lets save energy to save money. There are certain steps to be taken, some of which are:

1. **Save energy to save money[2]-** Install compact fluorescent light bulbs; Turn off the lights you don't need, especially when you're leaving a room; use rechargeable batteries. **Turn off computers at night-** By turning off your computer instead of leaving it in sleeping mode , you can save 40 watts of energy. Wash clothes in cold water whenever possible. As much as 85 percent of the energy used to machine-wash clothes goes to heating the water.

2. We should **save water** by taking shorter showers to reduce water use ; harvesting rain and bath water; use cold water to wash clothes whenever possible; should not run the water while brushing teeth; and check any water

leaks from faucets or the toilet. Install a low-flow showerhead. They don't cost much, and the water and energy savings can quickly pay back your investment

3. We should try to consume **less gas**, hence we can save **more money (and better health!) e.g.** Walk or bicycle to work; use public transportation when possible; don't go for idle driving for too long . Consider telecommuting if you live far from your work. Or move closer. Even if this means paying more rent, it could save you money in the long term.

4. **Eat smart[3]-** Eat less meat ; eat organic fruits and vegetables; use reusable containers rather than wrapping food in foil; go with fresh produce instead of canned or prepackaged . **Keep your freezer full** - it freezes food more efficiently when the freezer is full. **Include the less used parts of vegetables and foods in your cooking**

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Importance of Education for Sustainable Development

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***ABSTRACT*: Education for Sustainable Development allows every human being to acquire the knowledge, skills, attitudes and values necessary to shape a sustainable future. Education for Sustainable Development means including key sustainable development issues into teaching and learning; for example, climate change, disaster risk reduction, biodiversity, poverty reduction, and sustainable consumption. It also requires participatory teaching and learning methods that motivate and empower learners to change their behaviour and take action for sustainable development. Education for Sustainable Development consequently promotes competencies like critical thinking, imagining future scenarios and making decisions in a collaborative way. Education is an essential tool for achieving sustainability. People around the world recognize that current economic development trends are not sustainable and that public awareness, education, and training are key to moving society toward sustainability. Beyond that, there is little agreement. People argue about the meaning of sustainable development and whether or not it is attainable. They have different visions of what sustainable societies will look like and how they will function. These same people wonder way educators have not moved more quickly to develop education for sustainability (EFS) programs. The lack of agreement and definition have stymied efforts to move education for sustainable development (ESD) forward.**

***Keywords*: education, sustainable development, environmental education**

INTRODUCTION

An important distinction is the difference between education *about* sustainable development and education *for* sustainable development. The first is an awareness lesson or theoretical discussion. The second is the use of education as a tool to achieve sustainability. In our opinion, more than a theoretical discussion is needed at this critical juncture in time. While some people argue that "for" indicates indoctrination, we think "for" indicates a purpose. All education serves a purpose or society would not invest in it. Driver education, for example, seeks to make our roads safer for travellers. Fire-safety education seeks to prevent fires and tragic loss of lives and property. ESD promises to make the world more livable for this and future generations. Of course, a few will abuse or distort ESD and turn it into indoctrination. This would be antithetical to the nature of ESD, which, in fact, calls for giving people knowledge and skills for lifelong learning to help them find new solutions to their environmental, economic, and social issues.

Sustainable Development

Sustainable development is a difficult concept to define; it is also continually evolving, which makes it doubly difficult to define. One of the original descriptions of sustainable development is credited to the Brundtland Commission: "Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (World Commission on Environment and Development, 1987, p 43). Sustainable development is generally thought to have three components: environment, society, and economy. The well-being of these three areas is intertwined, not separate. For example, a healthy, prosperous society relies on a healthy environment to provide food and resources, safe drinking water, and clean air for its citizens. The sustainability paradigm rejects the contention that casualties in the environmental and social realms are inevitable and acceptable consequences of economic development. Thus, the authors consider sustainability to be a paradigm for thinking about a future in which environmental, societal, and economic considerations are balanced in the pursuit of development and improved quality of life.

Principles of Sustainable Development

Many governments and individuals have pondered what sustainable development means beyond a simple one-sentence definition. The *Rio Declaration on Environment and Development* fleshes out the definition by listing 18 principles of sustainability.

- People are entitled to a healthy and productive life in harmony with nature.
- Development today must not undermine the development and environment needs of present and future generations.
- Nations have the sovereign right to exploit their own resources, but without causing environmental damage beyond their borders.
- Nations shall develop international laws to provide compensation for damage that activities under their control cause to areas beyond their borders.
- Nations shall use the precautionary approach to protect the environment. Where there are threats of serious or irreversible damage, scientific uncertainty shall not be used to postpone cost-effective measures to prevent environmental degradation.

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- In order to achieve sustainable development, environmental protection shall constitute an integral part of the development process, and cannot be considered in isolation from it. Eradicating poverty and reducing disparities in living standards in different parts of the world are essential to achieve sustainable development and meet the needs of the majority of people.
- Nations shall cooperate to conserve, protect and restore the health and integrity of the Earth's ecosystem. The developed countries acknowledge the responsibility that they bear in the international pursuit of sustainable development in view of the pressures their societies place on the global environment and of the technologies and financial resources they command.
- Nations should reduce and eliminate unsustainable patterns of production and consumption, and promote appropriate

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Environment Education

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***ABSTRACT*: Environmental degradation is a result of the dynamic inter play of socio-economic, institutional and technological activities. Environmental changes may be driven by many factors including economic growth, population growth, urbanization, intensification of agriculture, rising energy use and transportation. Concern for nature and natural resources is not new for India. There is much need to provide environmental education.**

***Keywords*: environmental degradation, natural resources, environmental education.**

Introduction

Poverty still remains a problem at the root of several environmental problems. Population explosion, poverty and urbanisation are some of the social factors responsible for environmental degradation. To a large extent, environmental degradation is the result of market failure, that is, the non-existent or poorly functioning markets for environmental goods and services. Environment (Protection) Act, 1986 is the key legislation governing environment management. Other important legislations in the area include the Forest (Conservation) Act, 1980 and the Wildlife (Protection) Act, 1972. The weakness of the existing system lies in the enforcement capabilities of environmental institutions, both at the centre and the state.

India, a country with the seventh largest landmass in the world, is a land of ancient traditions. With over a billion people and at least 17 major languages, the diversity of India in terms of culture and biological wealth is enormous. In spite of rapidly changing lifestyles, the traditions of living in harmony with nature and of environmentally sound practices underpin the lives of most people. It is against this backdrop that the country's Environmental Education strategy has been evolved. The Constitution of India explicitly makes environmental conservation a duty. The Central Government and all states within India now have a Ministry or Department of Environment. Education departments recognize EE as an essential part of education. The law courts of the country have been sympathetic to environmental causes. India has a very large number of very active NGOs who are involved in a variety of activities from policy analysis to school programs; from participatory natural resources management to activism. India continues to be rich in its biodiversity. Agricultural revolution has ensured that food-grain production has not just kept pace with the population increase, but has rather grown faster. With better nutrition and health care, the life expectancy has gone up by almost 3 times since the independence. The per capita income has grown almost 45 times during this period. But the environment in India faces several challenges too. With poverty and low literacy levels, over 650,000 primary schools and rapidly increasing population, the development and environmental challenges are enormous. India has made considerable strides in slowing down its population growth. But with all efforts, India's annual population increase is equal to the population of Australia. With about 16 per cent of the world population and a little over 2 per cent of its land, there is already enormous pressure on our resources. But while the population increase puts pressure on resources, the pressure of 'development' is perhaps even greater.

Thus there are many challenges for environmental educators in India. Apart from the obvious ones of helping strengthen environmental management and conservation, one of the important ones is to bring about awareness of the need that the country develops in less wasteful ways than is the current paradigm. EE is one of the tools that can help India achieve this goal. There are considerable initiatives in EE in India today. There are also several challenges. Some of these are:

1. The challenge, in a large and diverse country, to find the right blend between centralized and de- centralized efforts and approaches
2. The challenge of reaching out to large numbers cost-effectively
3. The challenge of making environmental considerations relevant and meaningful to various groups
4. The challenge of putting EE on the agenda of educational decision makers
5. The challenge of putting sustainable development concerns high on the agenda of policy makers, and
6. Finding and developing human and financial resources for EE.

Protection of the Environment: A Tradition in India

Concern for nature and natural resources is not new for India. Respecting nature and living in harmony with it have long been parts of the Indian civilization. Launching the World Conservation Strategy in India, Prime Minister Indira Gandhi reminded the audience that *"the interest in conservation is the rediscovery of a truth well known to our sages. The Indian tradition teaches us that all forms of life, animal and plant are so closely linked that disturbance in one gives rise to imbalance in the other."* (Indira Gandhi,World Conservation Strategy for India, March 1988). The Indian tradition emphasizes living in harmony with nature.The Bishnois, for example, followers of a Rajput saint,Jambeshwar Maharaj, who lived towards the end of the fifteenth century, emphasize vegetarianism, non-violence, protection of trees and respect for all living things. In 1730, 363 Bishnois of Khejadli village, mostly women and old men, laid down their lives in an effort to protect trees being cut on the orders of the King of Jodhpur. Sacred groves are a unique tradition that has been responsible for islands of biodiversity in various parts of the country. Ashoka's pillar edict, dating back to 272-232 BC, proclaims protection for plants and animals.

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Adding to the challenge are the threats of climate change, biodiversity loss and land degradation - concerns which though global in nature, are at the same time of central concern to India's economic and social well being. Thus sustainability poses to be a major challenge to India, requiring amongst other steps, new ways of governing the country's environmental resources.

India's waste lands account for 63.85 million hectares which constitutes 20.16% of the country's geographical area (ICAR and NAAS, 2010). Nearly 43 million hectares of the wastelands are in the reclaimable category, coming as they are, under lands that have lost not on 'productivity' due to biotic or climatic factors. In some adverse climatic and biotic factors faced by many ecosystems

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Short Communication

Use of solid supported reagent in organic synthesis

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Abstract

The use of solid supported reagents is increasing, due to their tremendous potential to offer green chemical technologies. Now-a-days, silica supported acid catalysts have gained much importance due to their high activity. Moreover silica-supported reagents are easy to handle, less toxic, can be easily separated and reused, due to which they may play important role both in academia and industries. Silicas generally require no pre-swelling, which makes their use far simpler. As oxidative bromination of alkenes is very important in synthesizing biologically and synthetically important dibromocompounds, a simple, efficient and cost effective method has been used for the bromination of alkenes by using SiO_2 - H_2SO as solid heterogeneous catalyst.

Keywords: Solid supported reagents, oxidative bromination, alkenes, dibromocompounds, heterogeneous conditions.

Introduction

Bromination is a useful reaction in organic synthesis as these compounds are very important particularly in the preparation of different β-blocker, such as adrenoceptor agonists SR-58611A, denopamine, tembamide, formoterol, salmeterol etc. and in the manufacture of dyes, flame retardants, pharmaceuticals and agrochemicals[1-3]. Brominated organic substrates are known to posses potent antitumour, antifungal, antibacterial, antimycoplasic and antiviral activities[4]. Dibromoalkanes have also been used as precursors of pesticides, gasoline additives and synthetic building blocks[5].

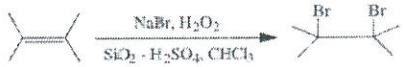
These have been used to synthesize alkynes, which are useful functional groups in organic reactions[6-11].

Bromination with molecular bromine is one of the most widely and extensively studied reactions. Molecular Bromine is very toxic and has corroding nature. One bromine atom is obtained in product whereas the other bromine atom forms HBr which is corroding in nature and has to be neutralized[12-14]. Thus, bromination with molecular bromine may be qualified as environmentally unfriendly reaction[15]. Environment friendly bromination protocols have been developed in place of use of bromine[16].

Various reagents have been reported for the bromination of alkenes such as V(V)-H_2O_2, LiBr and $CuBr_2$, silica-pyridinium hydrobromide perbromide, tetrabutylammonium tribromide (TBATB), zinc bromide and leadtetracetate, benzyl trimethylammonium tribromide (BTMA Br_3), bromine and tetraethyl ammonium bromide, sodium bromide in the presence of sodium perborate[17-25].

However, some of these methods suffer from various drawbacks like insolubility of the metal bromides and the oxidising agents in non-aqueous solvents, long reaction times, polymerization of the alkene with the reagents and limited application to alkenes that are not affected by acids and aqueous media.

Now-a-days, silica-supported reagents have gained much importance due to their high activity. Moreover, silica-supported reagents are easy to handle, less toxic, can be easily separated and reused, hence, they may play important role both in academia and industries. So silica materials are probably the most studied and commonly used porous solids[26]. As oxidative bromination of alkenes is very important in synthesizing dibromocompounds, a simple, efficient and cost-effective method has been used for the bromination of alkenes using SiO_2- H_2SO_4 as solid heterogeneous catalyst (Scheme-1).



I II

IIa: 1,2-Dibromodecane, **IIb:** 1,2-Dibromo-2-methoxypropane, **IIc:** 1,2-Dibromo-2,3-dichlorobutane, **IId:** 2,3-Dibromo-3-phenylpropanic acid, **IIe:** 2,3-Dibromo-3(4-methoxyphenyl) propanoic acid.

Methodology

SiO_2-H_2SO_4 as solid catalyst: To conc. H_2SO_4 (95% 6g), SiO_2 (12g), diethyl ether (70mL) were added. The mixture was stirred for 30min. at room temperature. The diethylether was removed

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and the residue obtained was warmed at 100°C for 5h under vacuum to get SiO_2-H_2SO_4 as a free flowing powder.

General method for the synthesis of vicinal dibromoalkanes with NaBr and H_2O_2 using SiO_2-H_2SO_4: Alkene (1 mmol), NaBr (1mmol) and H_2O_2 (2mL, 30%) were mixed in a pestle. SiO_2-H_2SO_4 (0.2g) was added and the mixture was grinded by using mortar (2min). The reaction mixture was then transferred to a round-bottomed flask (100mL) using chloroform (5mL) and stirred at 70°C in a pre-heated oil-bath for an appropriate time (Table-1). The reaction was monitored by TLC, and as the reaction completed, the catalyst was filtered off by triturating the reaction mixture with chloroform (3x10mL). The solvent

2,3-Dibromo-3(4-methoxyphenyl)propanoic acid (IIe): IR (υ_{max} in cm^{-1}, KBr): 3026, 2832, 1685, 1222, 682. ^1H NMR (DMSO-d_6): δ 3.72 (s, 3H), 4.80 (d, 1H), 5.45 (d, 1H), 8.11 (s, OH).

Results and discussion

To develop a green and cost effective method for the oxidative bromination of alkenes, SiO_2-H_2SO_4 was chosen as the solid acid catalyst. Since hydrogen peroxide is considered as the green oxidizing agent, so the test reaction was carried out with hydrogen peroxide as oxidant and NaBr as the brominating agent in the presence of SiO_2-H_2SO_4 as solid acid catalyst. To

GREEN TEA: A MIRACLE HERB CONTAINING POLYPHENOLS

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ABSTRACT

Tea is one of the most widely consumed beverages in the world, next only to water for enjoyment and health. In general, green tea has been found to be superior to black tea in terms of health benefits. The major components of interest are the polyphenols which are responsible for the antioxidant and other health benefits of green tea. Green tea in its purest and most unadulterated form has always influenced human health from generations and day by day scientific evidences throughout the world are making people aware of health benefits associated with this herbal drink. Though Green Tea is not officially recognized as a medical agent, it is one of the most researched plant-based remedies whose possible benefits include promotion of cardio-vascular health, cancer prevention, skin protection, and antioxidant activity, to fight high cholesterol levels, infection, impaired immune function, diarrhoea, fatigue and many more.

Key words: Green tea, health benefits, polyphenols.

INTRODUCTION

Tea is one of the most widely consumed beverages in the world, next only to water[1,2] and well ahead of coffee, beer, wine and carbonated soft drinks[3]. It can be categorized into three types, depending on the level of fermentation: i.e. green (unfermented), oolong (partially fermented) and black (fermented) tea. The term fermentation is often used incorrectly in tea processing. The more correct term should be oxidation, which means exposure to air while drying without any additives during the process. Green tea is the nature's treasure to the mankind. It is next to water as the most consumed beverage in the world [4]. Green tea is derived from the leaves of the plant Camellia sinensis.

CHEMICAL CONSTITUTENTS OF GREEN TEA

The chemical composition of green tea varies with climate,season, horticultural practices, and age of the leaf (position of the leaf on the harvested shoot)[5]. The active constituents in green tea are powerful antioxidants called polyphenols. Tea is reported to contain nearly 4000 bioactive compounds of which one third is contributed by polyphenols[6]. Among the polyphenols in tea, is a family of compounds called the flavanoids. Flavanoids (and their fraction, catechins) are the basic phenolic compounds in green tea responsible for antioxidant activities such as neutralization of free radicals that are formed in the process of metabolism[7]. These flavanoids contains a substance called catechins. Major catechins present in green tea are epicatechin (EC),epigallocatechin gallate (EGCG), epigallocatechins (EGC) and epicatechin gallate (ECG).

Nanoparticles

Nanotechnology has emerged as a promising technology that has been advocated for the delivery of antimicrobial phenolic compound extracts. There have been some recent efforts to enhance its bioavailability by delivering EGCG using lipid nanocapsules and liposome encapsulation, suggesting

the possibility of this molecule being developed further by medicinal chemists [8]. Phenolic compounds can be used as natural and safer alternatives to chemical disinfectants in food systems and delivery of antimicrobial agents using nanoparticles to better control pathogens for commercial food safety applications [9]. Green silver nanoparticles have been synthesized using various natural products like green tea Camellia sinensis [10] which is non polluted, environmentally acceptable and safer for human health. Synthesis of nanoparticles using biological entities has great interest due to their unusual optical[11], chemical[12], photoelectro-chemical[13] and electronic properties[14]. The synthesis and assembly of such nanoparticles would benefit from the development of clean, nontoxic and environmentally acceptable 'green chemistry' procedure, involving organisms ranging from bacteria to fungi and even plants.

Prevents Hair Loss

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On statistical convergence in generalized Lacunary sequence spaces

K. Raj, R. Anand

Abstract. In the present paper we introduce and study some generalized Lacunary sequence spaces of Musielak-Orlicz function using infinite matrix over n-normed spaces. We also make an effort to study some inclusion relations, topological and geometric properties of these spaces. Finally, we study statistical convergence on these spaces.

Mathematics subject classification: 40A05, 40B50, 46A19, 46A45.
Keywords and phrases: Musielak-Orlicz function, Lacunary sequence, sclicity, infinite matrix, statistically convergent, n-normed space.

1 Introduction and Preliminaries

Let w be the set of all real or complex sequences and l_∞, c and c_0 respectively, be the Banach spaces of bounded, convergent and null sequences $x = (x_k)$, normed by $\|x\| = \sup_k |x_k|$, where $k \in \mathbb{N}$. Let X and Y be two sequence spaces and $A = (a_{ik})$ be an infinite matrix of real or complex numbers a_{ik}, where $i, k \in \mathbb{N}$. Then we say that A defines a matrix mapping from X into Y if for every sequence $x = (x_i) \in X$, the sequence $Ax = \{A_i(x)\}$, the A-transform of x, is in Y, where

$$A_i(x) = \sum_{k=1}^{\infty} a_{ik} x_k \quad (i \in \mathbb{N}). \tag{1}$$

The matrix domain X_A of an infinite matrix A in a sequence space X is defined by

$$X_A = \{x = (x_k) : Ax \in X\}. \tag{2}$$

The approach of constructing a new sequence space by means of the matrix domain of a particular limitation method has been employed by several authors (see [24] and references therein)

The notion of difference sequence spaces was introduced by Kızmaz [14], who studied the difference sequence spaces $l_\infty(\Delta)$, $c(\Delta)$ and $c_0(\Delta)$. The notion was further generalized by Et and Çolak [7] by introducing the spaces $l_\infty(\Delta^n)$, $c(\Delta^n)$ and $c_0(\Delta^n)$. Another type of generalization of the difference sequence spaces is due to Tripathy and Esi [27], who studied the spaces $l_\infty(\Delta_m)$, $c(\Delta_m)$ and $c_0(\Delta_m)$.

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Nuclear structure study of yrast bands of some odd mass thorium isotopes

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+ Author & Article Information
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The yrast bands of odd-mass $^{223-233}$Th isotopes are studied by using the Projected Shell Model (PSM) approach. The yrast energies are calculated and compared with the experimental data. The structure of yrast bands is investigated from the band diagrams. It is observed from the band diagrams of $^{223-227}$Th that the yrast band consists of composite states whereas as the band diagram of $^{229-233}$Th indicate that the yrast bands of these isotopes are arising from single intrinsic state.

Topics
Nuclear structure, Chemical elements

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Organotin(IV)triazadiphosphorines: Synthesis and characterization

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ABSTRACT: Organotin(IV)triazadiphosphorines, [{N(PPh$_2$NR')$_2$}$_n$SnR$_2$X$_{2-n}$] and [N(PPh$_2$NR')$_2$SnR$_3$] (where R'= -Ph or -SiMe$_3$, R = -CH$_3$, -CH$_2$Ph or -CH$_2$C$_6$H$_4$CH$_3$, n = 1 or 2 and X = Cl) have been isolated by the reaction of acyclic bis-phenylated (A) and bis-silylated (B) phosphazene ligands, [HN(PPh$_2$NR')$_2$], with Me$_2$SnCl$_2$ and R$_3$SnCl in refluxing methylene dichloride and toluene in different stoichiometric ratio. These pale yellow moisture sensitive derivatives have been characterized by elemental analyses (C, H, N, Cl and Sn), molecular weight determinations, mass, IR and NMR (^{1}H, ^{13}C and ^{31}P) spectroscopy.

Key Words: *Triazadiphosphorines, bis-phenylated and bis-silylated phosphazenes*

Introduction

The six-membered cyclotriazaphosphazene (2,2,4,4,6,6-hexasubstituted-1,3,5,2λ^5,4λ^5,6 λ^5-triazatriphosphorines) is by far the best investigated phosphorus-nitrogen compound,[1-3] particularly, in view to its metathesis reactions with a wide variety of nucleophiles.[4-7] Initial report on metal-phosphorus-nitrogen compounds[8] was appeared in 1962 while first synthesis of the metal-phosphorus and metal-nitrogen bonds become available in the late 1970's followed by isolation of heterometallcyclophosphazenes[9] in 1986. Afterward a large number of cyclometallaphosphazenes having transition metals as building blocks are discovered.[10-16] Organotin compounds are used for molding rubbers, precursors for ceramics[18] and are known to form polymers,[17] which may possess average molecular weight up to 1X10^6. Tin compounds are also known to possess potential biological activity, especially to those of triorganotin species. Literature survey reveled that little is known about the chemistry of cyclophosphazenes derivatives containing Sn-N bonds and till date no six-membered cyclophosphazene of tin(IV) is reported.[19-20] Keeping the view of our past efforts in synthesizing the new heterometallacyclophosphazenes, we report herein on the syntheses of first organotin(IV)triazadiphosphorines (or heterotincyclophosphazenes) with the assumption that they may find their utility as potential bioactive species or as precursor in the synthesis of the complex oxide materials of "high-tech" applications.

Experimental

In view of the sensitive nature of the ligands as well as complexes, utmost precautions were taken to exclude moisture to maintain anhydrous conditions. All experimental manipulations were carried out

MACROBENTHIC INVERTEBRATES OF PADDY FIELD AGRO-ECOSYSTEM

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Abstract: The paddy fields are an important contributor to the aquatic biodiversity as they are also known to be temporary manmade wetlands. The crop cycle of paddy varies as per the variety and local conditions of the area. The crop cycle of the selected study field started with the puddling and irrigation of field during the month of July and ended with the harvest of crop in the month of October. Nitrogen, phosphorus and potassium fertilizers were broadcast time to time as per the requirement of crop variety. The aquatic inhabitants along with growing crop presently enlisted were total of 28 different species including 16 species of zooplankton and 12 species of macro-benthic invertebrates. The investigation commenced through a single cultivation cycle between July and October. The population attributes of the zooplankton and macro benthos so recorded for the season seemed to be influenced greatly by local agricultural practices especially the application of artificial chemical fertilizers. Population dynamics of both these groups varied with the changing concentration of chemicals fertilizers.

Keywords: Irrigation, zooplankton, macro benthic invertebrates, cultivation and fertilizers.

INTRODUCTION

Paddy fields are temporary wetlands also, these areas are considered as rapidly changing ecotones, which are sustained by fast growing as well as rapidly colonizing organisms Heckman (1979) like zooplankton, macrobenthic invertebrates and other aquatic organisms. These organisms play a fundamental role in wetland habitats, for example, in the energy transfer along the food chain and in nutrient cycling in this ecosystem (Chittapun *et al.*, 2002 and Downing & Leibold, 2002). Modern technologies of farming utilize fertilizer-responsive varieties along with fertilizers and pesticides which has tremendously increased yield and production but have also caused profound disturbance to stabilized ecosystems. But disadvantage of such farming is that it reduces the number of some species while provoking "blooms" of certain other inhabiting zooplankton and macrobenthic invertebrates. Zooplankton are free floating, microscopic organisms, occupying central position in aquatic food chain and thus act as vital part of any aquatic ecosystem. In fresh water ecosystems they are usually represented by groups Protozoa, Rotifera, Cladocera, Copepoda and Ostracoda. Similarly, macrobenthic invertebrate groups like Annelida, Arthropoda and Mollusca are extremely diverse in fresh waters and mostly inhabit bottom sediments. All these inhabitants act as barometer for measuring the overall biodiversity of aquatic ecosystem.

The main objective of the study was to record overall ecology of zooplanktonic and macrobenthic component of the rice fields along with their physico-chemical parameters and to analyze anthropogenic disturbance in these ecologically important temporary wetlands

MATERIAL AND METHODS

Analysis of Physico-Chemical Parameters

Measurement of parameters like depth, air temperature, water temperature, pH, DO, FCO_2, CO_3^{2-}, HCO^3, Cl^-, Ca^{2+}, Mg^{2+} and total hardness was done on the spot by following the standard methodology of Adoni (1985) and A.P.H.A (1985).

Analysis of Zooplankton

The zooplankton samples were collected by filtering 20 litres of water through the standard plankton net (25 mesh bolting silk). Finally the volume of planktonic concentrate was filtered to 20 ml and preserved by adding 5% formalin. Zooplankton species identification was done with the help of standard references of Adoni (1985), Battish (1992), Edmondson and Winberg (1971) and Pennak (1978). The number of plankton per ml of the concentrate was calculated by using the formula:

Organism/litre = A x 1/L x n/V

Where,

V = Volume of 1 drop (ml)

A = Number of organism per drop (ml)

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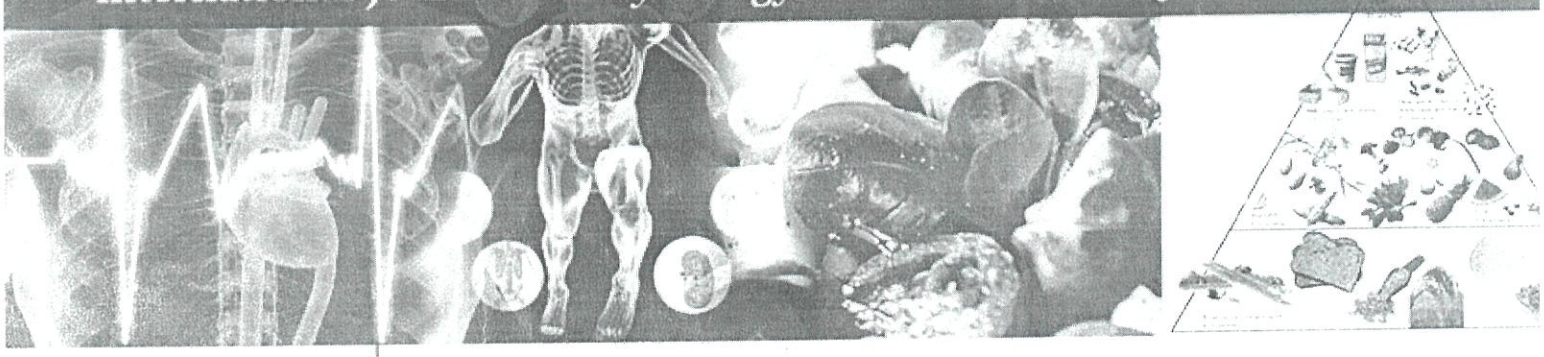

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The Application of physics in sports

Renu Rajput, Vikesh Kumar and Amandeep Singh

Abstract
When we think sports the other words that come in minds are fitness, competition, endurance, ex and recreation: Physical Education and sports is very scientific. It has strong roots in science. M sports are not only demonstration of skills, strength and techniques but it is also shown sci performance. It is equally powerful demonstration of science. From bicycle to tennis rackets and high jump to long jump, it involves science. You may surprise to see sprinter who run 100 m in les 0 sec. It is not only strength and speed that enable to run but it is also science that helps to run i high speed. Why the shape of Helmet in cycling is having long tail? Why discus throwers sp discus in air? There are thousand questions and all answers lies in science.
The purpose of the study was to illuminate various principles of physics and their implication in s The application of physics principles in sports know as biomechanics. The word biomechanics divided into two parts: the prefix bio- and the root word mechanics. The prefix bio- indicate biomechanics has something to do with living or biological systems. The root word mechanics ind that biomechanics has something to do with the analysis of forces and their effects. So it appear biomechanics is the study of forces and their effects on living systems. This comes very close definition of biomechanics presented by Herbert Hatze in 1974: "Biomechanics is the study structure and function of biological systems by means of the methods of mechanics". The goals of and exercise biomechanics are performance improvement, technique improvement, equi improvement, injury prevention and rehabilitation

Keywords: Biomechanics, Physics, Performance

Introduction
In 1968, there was drastically change in the high jump technique. Dick Fosbury an Am athlete uses a peculiar technique known as Fosbury Flop. This technique improves the jump performance to great extend. After 1968 Fosbury flop techniques become popular a

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TREATMENT OF RHEUMATOID ARTHRITI USING TRADITIONAL MEDICINAL PLANT BY THE RURAL AND TRIBAL PEOPLE OF POONCH DISTRICT OF JAMMU AND KASHMIR STATE

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bstract: Rheumatoid arthritis is an autoimmune disease that causes chronic inflammation of joints and other areas of the b he present paper is a part of ethno-botanical survey of Poonch district of Jammu and Kashmir state, undertaken to explor otential of the medicinal plants for the management, treatment and cure of various ailments of humans & animals of this he survey was conducted from June 2016 to June 2018. The data were gathered from rural and tribal people by direct interv sing a semi-structured questionnaire. During this survey, it emerged that the people of the surveyed region utilize 23 pecies belonging to 17 families for the management of rheumatism. It is because of the fact that these plants are accessible xtracts can easily be prepared and administered with little or no cost involved. The most represented families were Solanace steraceae with 3 species each, followed by Brassicaceae & Liliaceae with 2 species each and remaining families with 1 sp ach. The parts used in order of preference were the leaves, whole plant, bark, fruits and roots. The mode of preparation of h edicines was found to be mostly in the form of paste, oil and extract. The main route of administration was application of p il and/or extract over the ailing areas. The present article deals with detailed account of these plants which might be used fo evelopment of innovative, cheap, effective, and eco-friendly herbal formulations to treat rheumatism without any observed ffects as per the preliminary data provided by the informants.

ey Words - **Rheumatism, Ethnobotany, Poonch district, Tribals.**

I. INTRODUCTION

Rheumatoid arthritis is a chronic inflammation of joints & other areas of the body and is basically an autoimmune disea ffects people of all ages. In this disease the joints of the ailing person are damaged to a huge extent that ultimately leads estruction and deformity. The main cause of rheumatoid arthritis is still not known precisely among individuals, however, elieved that some environmental factors or infection trigger the dormant gene. When triggered, the immune system results int

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CESÀRO ORLICZ SEQUENCE SPACES AND THEIR KÖTHE-TOEPLITZ DUALS

KULDIP RAJ, RENU ANAND AND SURUCHI PANDOE

ABSTRACT. The present paper focus on introducing certain classes of Cesàro Orlicz sequences over n-normed spaces. We study some topological and algebraic properties of these spaces. Further, we examine relevant relations among the classes of these sequences. We show that these spaces are made n-BK-spaces under certain conditions. Finally, we compute the Köthe-Toeplitz duals of these spaces.

1. Introduction and Preliminaries

Let w, ℓ_∞, ℓ_p, ℓ_1, c and c_0 represent the spaces of all, bounded, p-absolutely summable, absolutely summable, convergent and null sequences $x = (x_k)$ with complex terms, respectively. The zero element of a normed linear space is denoted by θ.

The space of all complex sequences $\ell_p (0 < p < \infty)$ such that $\sum_k |x_k|^p < \infty$, known as the space of p-absolutely summable sequences. The space ℓ_p for $p \geq 1$ is complete under the norm defined by $\|x\| = (\sum_k |x_k|^p)^{\frac{1}{p}}$ and for $0 < p < 1$, ℓ_p is a complete p-normed space, p-normed by $|x\| = \sum_{k=1}^{\infty} |x_k|^p$.

A BK-space $(X, \|.\|)$ is a Banach space of complex sequences $x = (x_k)$, in which the co-ordinate maps are continuous, i.e., $|x_k^n - x_k| \to 0$, whenever $\|x^n - x\| \to 0$ as $n \to \infty$, where $x^n = (x_k^n)$ for all $n \in \mathbb{N}$ (see [33]).

Let $(X, |.|)$ be a normed linear space and λ is a scalar-valued sequence space, then the vector-valued sequence space or X-valued sequence space $\lambda(X)$ is defined by

$$\lambda(X) = \{(x_k) : x_k \in X \text{ for all } k \in \mathbb{N} \text{ and } \|x\| \in \lambda\}.$$

Clearly, $\lambda(X)$ is a linear space under coordinatewise addition and scalar multiplication over the field of scalars of X. Similarly, if X is a Banach space, then $\ell_p (1 \leq p < \infty)$ is a Banach space with the norm given by

Mathematics Subject Classification. Primary 40A05, 46A20; Secondary 46D05, 46A45, 46E30

Key words and phrases. Orlicz function, Musielak-Orlicz function, n-normed spaces, difference sequence spaces, Köthe-Toeplitz dual.

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Matrix transformations on lacunary orlicz sequence spaces and their toeplitz duals

K. Raj, R. Anand, Charu Sharma

Published in University of Houston

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Abstract

The aim of this paper is to study some lacunary sequence spaces originated with infinite matrices and a sequence of Orlicz functions. We make an effort to study some algebraic and topological properties of these sequence spaces. Some inclusion relations are also establish between these spaces. Furthermore, we compute the beta , gamma-duals and matrix transformations of these spaces. © 2019 University of Houston

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Yoga and Mental Health: A Brief Review

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ABSTRACT: *Life is meaningful when one is able to control one's passions, emotions and sentiments. Yoga plays an important role in the development of these qualities. The practice of yoga protects us from various ailments. The purpose of this study was to review published literature based on yoga and to determine the effect of yoga in preventing and relieving mental illness. The study threw light on the research work done in the field of yoga for attaining a good mental health. It is perceived as a complementary and alternative medicine. The techniques of yoga helps in developing and retaining a healthy balance between all aspects of body and mind. The practice of yoga look simple but have deep positive effects on the person practicing it. It comprises of asanas, pranayama and meditation. With its ever increasing popularity and focus on connection between the mind, body and spirit, it is important to explore the role of yoga in the treatment of various mental disorders, such as stress, depression and anxiety. One great advantage of yoga is that it enhances our work efficiency by making our health, sound and steady. It has the potential to vitalize important organs of the body such as brain, heart and kidneys.*

KEYWORDS: *balance; body; mental health; mind; yoga*

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I. INTRODUCTION

Yoga is a common term that encompasses breathing techniques, postures, exercises, and meditation. It can make our balanced muscular system, to work faster, it increases the elasticity of bones, helps in proper circulation of blood in the body and lead to proper functioning of the glandular system. Yoga works as a therapeutic intervention. The application of yoga began early in the twentieth century. In the development of an individual into a genius and in uniting the individual with the universal soul, yoga plays a vital role. The physical exercises (asanas) may increase the flexibility, coordination and strength and stamina of the person while the breathing exercises and meditation calms and helps focusing the mind to develop greater awareness and reduce anxiety (Pilkington, Kirkwood, Rampes, Tuffrey & Richardson,2005). It results in higher quality of life and good mental health. Other beneficial effects might involve a reduction of stress and blood pressure, and improvements in resilience, mood, and metabolic regulation (Yang, 2007). It is a holistic way of life leading to a state of complete physical, social, mental, and spiritual well-being. It helps in establishing harmony with nature (Taneja,2014). The techniques used in yoga enable the practitioner to become master of his own mind, rather than a victim of his emotions and desires. Among the yogic models of human personality, the principle of homeostasis is most important which says that any type of imbalance in the biological, psychological or pranic systems creates problems related to health, and the cure for this lies in rebalancing them and attaining the state of equilibrium. All yogic methods emphasize how to restore this balance, thus promoting health and well being (Matthews, 1995).

Table 1 Indicating the role of yoga in enhancing mental health

Author/ year	Variable	Sample	Place	Sampling Technique	Design	Statistics	Key findings
Kiecolt-Glaser, Christian, Preston, Houts, Malarkey, Emery and Glaser (2010)	Anxiety, Depression, Positive affect, negative affect, type, frequency and quantity of food intake, sleep quality and disturbance	(N =50) 25 novices and 25 experts	Not mentioned	Not mentioned	Repeated measures design,3 conditions tested-yoga, movement control and passive-video control	Tukey-Kramer procedure, Bonferroni adjustment ,3 way interaction, Logistic regression.	Significant time by condition interaction for PANAS positive affect. Participants' positive mood scores increased following yoga, decreased following the video, and were unchanged following movement. Experts were more apt to report negative affect above the minimum at the end of the conditions than novices.

Malathi, Damodaran, Shah, Patil and Maratha (2000)	Subjective Well being	(N=48) 24 males and 24 females	Mumbai	Not mentioned	Experimental –pre and post analysis	t-test	Regular practice of yoga and adopting the philosophy of yoga lead to significant improvement in feelings of subjective well being.
Yazdani, Esmaeilzaeh, Pahlavanzadeh and Khaledi (2014)	Anxiety, Insomia, social dysfunction and depression	N=30 (male nursing students)	Isfahan	Convenient Sampling	Quasi-experimental two-group three step design	t-test, ANOVA,L SD-..east significance difference	Yoga had a positive effect on students' general health and improved the signs of physical and sleep disorders, lowered anxiety and depression, and promoted their social function.
Jadhav and Havalappanavar (2009)	State Anxiety, Trait Anxiety, Subjective Well being	(N=50) 25 males and 25 females	Karnataka	Not mentioned	Experimental –pre and post analysis	Mean, SD and t-test	Significant difference between before and after the practice of yoga. Yoga practice lead to a significant alleviation of State Anxiety, trait anxiety of the practitioner and improvement in subjective well-being
Woolery, Myers, Sternlieb and Zeltzer (2004)	Current mood, anxiety and depression	N=28,79% females,82 % students(young adults)	College campus recreation center, Los Angeles.	Random sampling	2X3 repeated measure design, pre and post analysis	Independent t-test and exploratory paired t-test, ANOVA, Pearson correlation	The results indicated significant pre- to post-class reductions in depression, anxiety and total mood disturbance .Participants in the yoga group evidenced higher morning cortisol levels than the controls. Change in depression was not significantly related to change in anxiety.
Smith, Hancock, Mortimer &Eckert (2007)	Mental health, Physical function, physical role	N=131 ,Yoga group-68(54 female,14 male)	South Australia	Not mentioned	Randomised comparative trial	Students t-test, Chi square test for categorical data	Yoga appeared to provide a comparable improvement in stress, anxiety and health status compared to relaxation.

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Promising applications of cold plasma for microbial safety, chemical decontamination and quality enhancement in fruits

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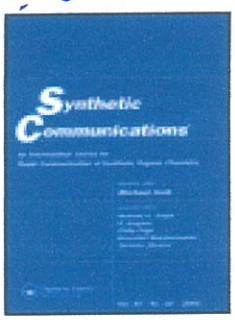

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Triarylimidazo[1,2-*a*]pyridine-8-carbonitriles: solvent-free synthesis and their anti-cancer evaluation

Annah Gupta, Sonakshi Sasan, Avneet Kour, Nargis Nelofar, Dilip Manikrao Mondhe & Kamal K. Kapoor

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Upper and lower bounds for norm of weighted type composition operators

Dr. Anshu Sharma

Abstract
Let ψ be holomorphic map of the open unit disk $\mathbb{D}$, φ a holomorphic self-map $\mathbb{D}$ and $H(\mathbb{D})$ be the space of holomorphic functions on $\mathbb{D}$. For a non-negative integer n, the weighted type composition operator $D^n_{\varphi,\psi}$ is defined by $D^n_{\varphi,\psi}f = \psi \cdot \left(f^{(n)} \circ \varphi\right), f \in H(\mathbb{D})$.
In this paper, we compute upper and lower bounds for norm of $D^n_{\varphi,\psi}$ from $Q_K(p,q)$ spaces to Bloch-type spaces.

Keywords: composition, holomorphic functions

Introduction

Let $\mathbb{D}$ be the open unit disk in the complex plane $\mathbb{C}$, $\partial\mathbb{D}$ its boundary, $dA(z)$ the normalized area measure on $\mathbb{D}$ (i.e. $A(\mathbb{D}) = 1$), $H(\mathbb{D})$ the class of all holomorphic functions on $\mathbb{D}$. Let $\eta_a(z) = (a - z)/(1 - \bar{a}z)$, $a, z \in \mathbb{D}$, that is, the involutive automorphism of $\mathbb{D}$ interchanging points a and 0. It is well known that $\frac{1-|\eta_a(z)|^2}{1-|z|^2} = \frac{1-|a|^2}{|1-\bar{a}z|^2} = |\eta_a'(z)|$. Also let the Green function in $\mathbb{D}$ with logarithmic singularity at a is given by $g(z,a) = \log\left|\frac{1-\bar{a}z}{a-z}\right| = \log\frac{1}{\eta_a(z)}$.
Let ω be a strictly positive continuous function on $\mathbb{D}$. If $\omega(z) = \omega(|z|)$ for every $z \in \mathbb{D}$, we call it a radial weight. A radial weight ω is called typical if it is non-increasing with respect to $|z|$ and $\omega(z) \to 0$ as $|z| \to 1$.
2000 Mathematics Subject Classification. Primary 47B33; Secondary 30H05, 46E15.
Key words and phrases composition operator, weighted composition operator, $Q_F(p,q)$ space, $F(p,q,s)$ space, Bloch-type space.

Norm of weighted type operators

For a typical weight ω, the Bloch-type space $\mathcal{B}_\omega$ on $\mathbb{D}$ is the space of $f \in H(\mathbb{D})$ such that $\|f\|_\omega \sup_{z\in\mathbb{D}}\omega(z)|f'(z)| < \infty B_\omega$ is a Banach space with the norm $\|f\|_{\mathcal{B}_\omega} = |f(0)| + \sup_{z\in\mathbb{D}}\omega(z)|f'(z)|$. When $\omega(r) = (1-r^2)^\alpha, \alpha > 0$ the induced space $\mathcal{B}_\omega$ becomes α-Bloch space $\mathcal{B}^\alpha$. If $0 < \alpha < 1$, then $\mathcal{B}^\alpha$ consists of all functions $f \in H(\mathbb{D})$ satisfying Lipschitz condition $|f(z) - f(w)| \lesssim |z - w|^{1-\alpha}$ for all $z, w \in \mathbb{D}$ (see [5]).
Let $0 < p < \infty$, $-2 < q < \infty$ and $K: [0,\infty] \to [0,\infty]$ a non-decreasing continuous function. A function $f \in H(\mathbb{D})$ is in $Q_K(p,q)$ if $M(f) = \left\{\sup_{a\in\mathbb{D}}\int_{\mathbb{D}} f'(z)|^p(1 - |z|^2)^q K(g(z,a))dA(z)\right\}^{1/p} < \infty$. Throughout this paper, we assume that

$$\int_0^1 (1-r^2)^q K(-\log r)r\,dr < \infty, \qquad (i)$$

Since otherwise $Q_K(p,q)$ consists only of constant functions (see [19]). For $1 \le p < \infty$, $Q_K(p,q)$ is a Banach space with respect to the norm $\|f\|_{Q_K(p,q)} = |f(0)| + M(f)$. If $K(x) = x^s$, $s > 0$, then the spaces $Q_K(p,q)$ reduced to $F(p,q,s)$ which were introduced by D

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MUNICIPAL SOLID WASTE CHARACTERIZATION AND QUANTIFICATION AS A MEASURE OF EFFECTIVE MANAGEMENT: FIRST CASE STUDY FROM THE AREA

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ABSTRACT

The Municipal Solid Waste (MSW) generated from different activities in the township and city areas are a subject of deep concern for its proper management. The improper management of the MSW is a major cause for water, air and soil pollution. Despite some progress, municipal solid waste (MSW) still remains one of the major challenges in environmental management. The results shows that the composition of the waste generated in study area is dominated by food wastes, grasses and leaves(91.69%) followed by plastic and wood(8.31%). The analysis also indicated that solid waste management capacity of the study area was under stress due to different reasons. Currently, the overall technical arrangement right from collection including transport, storage, discharge and disposal is still in poor condition, which leads to environmental and health risks. Finally, it is recommended that these problems should be solved in an integrated manner by improving legislation, environmental education and solid waste management facilities so as to reduce the risk on environmental and public health. The study carried out was first of its kind in the area.

KEYWORDS: Solid Waste, Characterization, Generation Rate, Disposal, Solid Waste Management

INTRODUCTION

Solid waste refers to unwanted or useless solid materials generated from combined residential, industrial and commercial activities in a given region (Parvathamma, 2014). It is classified as domestic, industrial, commercial, construction or institutional and on content basis as organic material, glass, metal, plastic and according to hazard potential toxic, non-toxic, flammable, radioactive, infectious etc. (Festus and Omoboye, 2015). Ecologically, solid waste can be categorized into as biodegradable, non-biodegradable and inert waste (Kumar and Singh, 2013).Due to the fast economic development and urbanization, the generation of municipal solid waste (MSW) has rapidly increased worldwide and the composition of MSW has also changed significantly. These changes bring more pressure on the existing environment, human health and also to the management of MSW system (Wang and Nie, 2001; Zhao *et al.* 2011). Generally, increased population growth and rising consumer choices have resulted in a larger production of waste worldwide (Karak*et al.* 2012). The sources of MSW are primarily classified in to residential, institutional and commercial waste (Yousuf and Rehman, 2008, Kalantariofard *et al.* 2012). Hence, an attempt was made to study the generation and composition of MSW from commercial area of Janipur, Jammu. This study will help us to place before the management the problems arising out of solid waste applicable not only to the study area but to other areas as well.

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SOLID WASTE MANAGEMENT: FIRST REPORT ON GARBAGE PROBLEM IN DODA REGION OF JAMMU AND KASHMIR, INDIA

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ABSTRACT - **Waste has been a major environmental issue everywhere ever since the onset of Industrial revolution. In Doda region of Jammu and Kashmir, due to the increase in the population and the standard of living of people, there has been a tremendous increase in the quantity and variety of waste generation like all other areas of India. There has been rapid increase in the generation of Municipal Solid Waste (MSW) due to increased urbanization. High standards of living of ever-increasing population have resulted in an increase in the quantity and variety of waste generated, particularly in urban areas. It is now being realized that if waste generation continues recklessly at this very pace, then it would become rampant and alarming very soon and possibly beyond rectification. Management of solid waste has, therefore, become very important in order to minimize the detrimental and lasting aftermaths of solid waste. Solid waste (i.e., waste other than liquid or gaseous) can be classified as Municipal, Industrial, Agricultural, Medical/Bio-medical, Chemical, Mining, Radioactive, Metallurgical, Poultry/Animal and Sewage sludge.**

Key Words: Management, Bio-garbage, Solid waste, Municipal waste, Mining waste, Medical Waste and Sewage sludge.

INTRODUCTION

Waste has been a major environmental issue everywhere ever since the onset of Industrial revolution. In developing countries like India, there is a rapid increase in Municipal Solid Waste (MSW) due to rapid urbanization. In Doda region of Jammu and Kashmir, India, due to the increase in the population and the standard of living of people, there has been a colossal increase in the quantity and variety of waste generated. The composition of municipal solid waste varies greatly from municipality to municipality and it changes significantly with time. These different compositions that contribute to Municipal Solid Waste (MSW) are called 'Municipal Solid Waste (MSW) Streams'. In municipalities which have a well-developed waste recycling system, the waste stream mainly consists of intractable wastes such as plastic film and non-recyclable packaging materials.

Solid Waste Management (SWM) has become one of the crucial parameters of urbanization. India has recognized its importance and has set-up "Clean India Mission".

The quantity of municipal waste generated from urban settlement is a function of human development index which in turn depends on the life expectancy, gross domestic product and education indices (Chandrappa and Das, 2012; Kumar, 2016).

Municipal Solid Waste is the most complex heterogeneous solid waste stream, in contrast with more homogeneous waste streams, such as industrial or agricultural waste (Rasool and Balwan, 2020; Wang and Nie, 2001). The quantity of municipal solid waste is invariably higher in the developed nations compared to the developing nations. Typical waste characteristics of the developing nations are (1) high waste densities, (2) high moisture contents, (3) large organic fraction, (4) cities with sweeping as well as open ground storage characterized by large amount of dust and dirt. (Chandrappa and Das, 2012).

The World Bank assessment of collection coverage quoted on their website that 30 to 60% of all the urban solid waste in developing countries is uncollected and less than 50% of the population is served. The poor state of Solid Waste Management in urban areas of developing countries is now not only an environmental problem but also a major social handicap (Daskalopoulos et al., 1998; Rasool and Balwan, 2020).

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Awareness Status of Noise Pollution in Samba Town of District Samba (Jammu & Kashmir): First Report

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ABSTRACT

The present study has been made to assess awareness status of Noise Pollution in Samba Town of District Samba (Jammu & Kashmir). The analysis of the compiled data regarding impact/awareness of noise revealed that majority of the respondents were having the knowledge of noise pollution and all the respondents of the study area were facing the problem of noise pollution. The sources of noise pollution identified by majority of the respondents at all the sites were traffic/vehicular noise, loudspeakers, construction activities, generators, shouting children, agricultural implements etc. Statistically insignificant ($p > 0.05$) difference of response between male and female respondents was observed. The study is first of its kind from the area.

KEYWORDS: Awareness, Impact, Noise, Respondents.

INTRODUCTION

At present, noise pollution is consadered as one of the key problems which have numerous detrimental effects on both physical and social environment. Noise menace has negative bearing on both health and environment. Right from the inception of human civilization, noise has always been there but it was never so evident, so ubiquitous, so varied and as pandemic as it is seen in the first decade of this century. The effect of noise pollution is all-around and interconnected.

Many surveys have been carried out to assess the noise pollution status in many countries of the world including some cities in India. India is among the developing countries where urban environment has undergone significant changes due to industrialization, urbanization, expansion of the road network and the increase in the number of motor vehicles over the last 10 years (Dasarthy, 2013). These changes have resulted in an increase in noise levels that have added to many types of sufferings on humankind. WHO rated Delhi as 2nd noisiest city (World Economic Forum 2017). As per the survey, Delhi was the second worst city for noise pollution, followed by Cairo, Mumbai, Istanbul and Beijing. Dhole and Kadu (2018) while evaluating noise pollution in Washim town, Maharashtra also concluded that noise pollution was emerging as an environmental problem in Washim town and other parts of India. The people staying in noisy area especially above 70 dB (A) should take precautionary and protective measures in order to prevent themselves from noise induced hearing loss.

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Investigation and Abatement of Traffic Based Noise in Samba Town of Jammu and Kashmir, India

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Abstract:
Traffic noise is unwanted sound that comes from vehicles operating on roadways. During the study it was found that noise level of Samba town of Jammu and Kashmir, India is deteriorating at an alarming rate. Outdoor Equivalent Noise Level (L_{eq}), Noise Pollution Level (L_{NP}), Noise Climate (NC) and Traffic Noise Index (TNI) exhibited variable trends at different Subareas at both the first year as well as second year study period. Statistical analysis revealed significant ($p<0.05$) positive correlation($r>0$) between L_{eq} and traffic flow at all the subareas except at ATF1 and ATF7 (non-working hours). The value of TNI was found to be much more higher at all the subareas of study area than respective L_{eq} of study area. The noise levels were more than the prescribed and has reached an alarming level in most areas of the Samba town. So, it is high time to adopt effective mitigation measures to prevent the residents of Samba from the detrimental effects of this menace.

Keywords: Traffic Noise, Noise Climate, Noise Pollution, Menace

INTRODUCTION

A world without sound can be imagined [illegible] with music, feelings of fright and fun. But, the hellish conditions being created by the [illegible] by the insound minds is a matter of great concern not only for the present generation but also for the posterity. Noise pollution has become an unfortunate fact of life nowadays and man-made plague of the 21st century from which hardly anyone can abscond. The ever-rising noise not only adversely affects the quality of life of human beings but has resulted [illegible] other living organism as well.

Noise though being a pressing environmental problem in almost all urban areas has not been properly recognized. As a result, this problem is spreading its claws with every passing day resulting in further escalating this problem in both developing and developed countries and thus engulfing the whole world in its clutches. At present, noise pollution is considered as one of the key problems which has numerous detrimental effects on both physical and social environment.

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RESEARCH ARTICLE OPEN ACCESS

Inoculum Size and Age Studies on Single and Mixed Strain Fermentation of Grape Juice

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Abstract

Single and mixed strain fermentation were compared to check the effect on properties of wine. Two strains of Saccharomyces cerevisiae (MTCC 11815 & MTCC 170) were used to study the effect of inoculum age and inoculum size on fermentation of grape juice. The inoculum sizes used were 2%, 5%, 10% and 15%, while inoculum age effect was studied using 24 h, 48 h and 60 h old inoculum. Fermentation efficiency of 77.2% was achieved in mixed strain culture using 15% inoculum, 17% initial sugars giving ethanol concentration of 6.70% (w/v) after 48 hrs. Fermentation efficiency of 84.65% was achieved with MTCC170 using 15% inoculum and 17% initial sugars giving ethanol concentration of 7.34% (w/v) in 48 hrs. Strain MTCC11815 produced 8.5% (w/v) ethanol from 17% initial sugars giving 98% efficiency using 2 and 5% inoculum. Concentration of phenolics increased with inoculum concentration while nitrogen and phosphates did not show any regular trend. The nitrogen and phosphate concentration was affected by type of strain rather than other factors.

Keywords: Mixed strain fermentation, phenolics, inoculum age, inoculum size, Saccharomyces cerevisiae

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Effect of storage on the physico-chemical, color and microbiological properties of cheese prepared from stored pre-cheese

Monika Hans, Suresh Bhise and KS Minhas

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Abstract
The investigation was carried out to evaluate the physico-chemical properties of Mozzarella cheese made from pre-cheese stored under atmosphere and vacuum conditions for 9 days. A significant difference ($p<0.05$) in the values for acidity, free fatty acid and soluble nitrogen content was observed. Acidity values increases from 0.51 to 0.54 % in atmospheric and 0.51 to 0.53% in vacuum stored pre-cheese, free-fatty acid value also increases i.e from 0.04- 0.24% in atmosphere and 0.04- 0.22% in vacuum packed stored pre-cheese, increase in soluble nitrogen content for the cheese made from atmosphere packed stored pre-cheese was 0.09-0.15% and 0.09-0.12% in vacuum stored. Meltability of cheese made from atmospheric stored pre-cheese increases form 3.98-4.70 cm and 3.98-4.40 cm in vacuum stored pre-cheese. Stretchability score was more for cheese made from pre-cheese stored in vacuum packed i.e 5 than atmosphere stored i.e 3 at the end of storage day. No significant difference in the values for color i.e a*, b* and l* was observed during storage period. It was concluded that increase in acidity, free-fatty acid and soluble nitrogen, stretchability value was more in case of cheese made from atmospheric stored pre-cheese. Meltability increases in case of atmospheric stored sample than vacuum stored. Overall acceptability was more in case of cheese made from vacuum stored pre-cheese than atmospheric stored. It was observed that mozzarella cheese prepared from stored pre-cheese was acceptable after 9 days of storage.

Keywords: mozzarella cheese, physico-chemical characteristics, pre-cheese microbiological quality and sensory quality

Introduction

Mozzarella cheese is the one of the most popular varieties of cheese in the world because of its primary use on the pizza topping (Kindstedt 2004) [15]. It occupies third place in Indian cheese market placed after processed cheese and cheese spreads. Mozzarella is a soft, unripened cheese variety of pasta filata family. It has moist, soft, elastic texture and lively surface sheen and when fresh posses a slightly salty taste and pleasant aroma. It also possesses a unique property called stretchability i.e. ability to form fibres or strings when hot. It is ideal for preparing a variety of food items especially as a topping on Pizza. Mozzarella cheese is made in many countries from cow milk, buffalo milk and even milk powder. The demand of Mozzarella cheeses is growing as the global demand for pizza and other foods has increasing manifold.

Milk production pattern faces great fluctuation/variation during the course of year. Production is abundant during winters and falls dramatically during summer months thereby lowering the fluid milk supply to population and widening the gap between supply and demand. During flush/glut season milk solids are conserved by processing them into a number of concentrated and dried products so that these can be put into use in lean period. A large number of such sources of milk solids i.e. concentrated milks, dried milks, casein powder and caseinates, whey powder and whey protein concentrates, dried cream, butter and butter oil/ghee are manufactured. These milk products have added advantages of longer shelf life than milk, guaranteed supply, uniform quality and improved microbiological quality.

In this work it is aimed to determine the important properties of mozzarella cheese made from fresh and stored pre-cheese stored under vacuum packaging (VP) and atmospheric packaging

Monika

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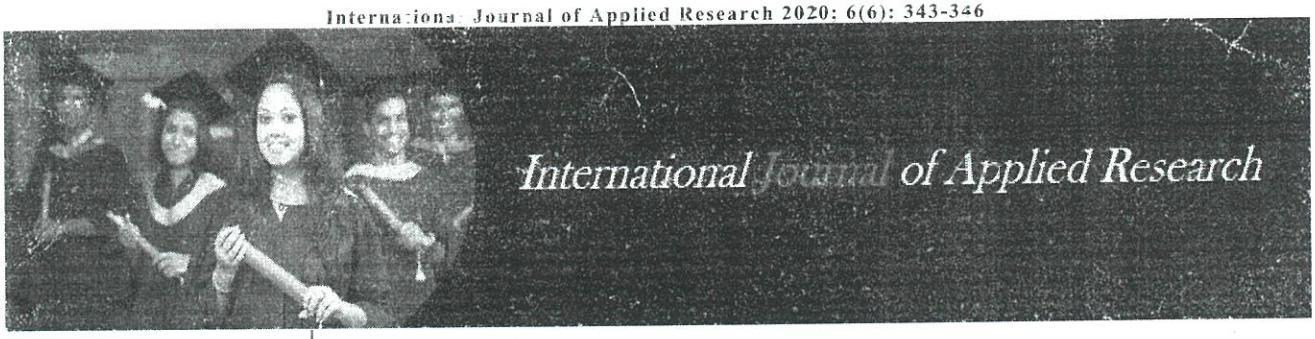

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Single Crystal X-Ray crystallographic study of 2, 2-Diiodo-1-phenylvinyl (methyl) sulfane

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Abstract
The title compound, 2,2-diiodo-1-phenylvinyl(methyl)sulfane ($C_9H_8I_2S$) crystallized in the monoclinic crystal system with space group $P2_1/n$ having unit cell parameters: a = 8.6397(3), b = 13.1631(5), c = 20.8706(7) Å, β = 97.617(3)° and Z = 8. A well-defined single crystal was chosen for data collection. X-ray intensity data of 7796 reflections (of which 4141were unique) were collected using CuKa radiation. The crystal structure was solved by direct methods and refined by full-matrix least-squares procedures to a final R- value of 0.0533 for 3441 observed reflections. There are two independent molecules per asymmetric unit. The experimental crystal F(000) value is 1472. The goodness of fit is 1.029. The phenyl ring is perfectly planar. Maximum shift to e.s.d ratio is 0.001. The crystal structure is stabilized by van der waals interactions.

Keywords: Crystal structure, direct methods, van der waals interactions, monoclinic crystal system.

1. Introduction
Organosulfur compounds contain C−S−C linkage in them and are essential for plants and animals [1]. Currently, most medicinal garlic products are manufactured from the extracts (e.g., garlic oil) which contain organosulfur compounds [2, 3]. These organosulfur compounds contain one or more sulfur atoms bonded with carbon, which is the basis for their biological activities, including antimicrobial, antioxidant, antitumor and antiasthmatic activities [5]. Fossil fuels, coal, petroleum, and natural gas, which are derived from ancient organisms, necessarily contain organosulfur compounds, the removal of which is a major focus of oil refineries. Sulfides, formerly known as thioethers, are characterized by C−S−C bonds [6, 7]. Relative to C−C bonds, C−S bond are both longer, because S is larger than carbon, and about 10% weaker. Representative bond lengths in sulfur compounds are 183 pm for the S−C single bond in methanethiol and 173 pm in thiophene. The C−S bond dissociation energy for thiomethane is 89 kcal/mol (379 kJ/mol) compared to methane's 100 kcal/mol (420 kJ/mol) and when hydrogen is replaced by a methyl group the energy decreases to 73 kcal/mol (305 kJ/mol)[8]. The single carbon to oxygen bond is shorter than that of the C−C bond. The bond dissociation energies for dimethyl sulfide and dimethyl ether are respectively 73 and 77 kcal/mol (305 and 322 kJ/mol).

Experimental
White transparent rectangular shaped single crystals of the title compound (Figure 1) were grown at room temperature from a 2:1 mixture of ethyl acetate and methanol by slow evaporation technique. The crystals were found to be monoclinic. The space group was determined to be $P2_1/n$ from the systematic absences 0k0: k = 2n +1. X-ray intensity data were collected on an XCALIBUR CCD area-detector diffractometer equipped with graphite monochromatedCuKa radiation (l=1.5418 Å). The crystal used for data collection was of dimensions 0.3 X 0.2 X 0.2 mm. The intensities were measured by w scan mode for q ranges 3.98 to 66.92° with h k l values $-7 \le h \le 10$, $-14 \le k \le 15$, $-23 \le l \le 24$. 3441 reflections were treated as observed using ($I > 2s(I)$) as criterion with $R_{int} = 0.0491$. Data were corrected for Lorentz, polarization and absorption corrections.
The structure solution was obtained by employing direct methods using SHELX97 software [9] with the best E map revealing positions for all non-hydrogen atoms.

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Influence of Social Networking Sites on Youth of Jammu Region, J&K, India.

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Abstract:
Over the past few years, technology has advanced at a very fast pace and internet has become an inseparable part of our lives.Along with internet came social media, which is used by everyone, especially youth. Social media has created both significant new challenges and exciting opportunities. However, frequent usage of social media often has behavioral and psychological effects on the youth which may be beneficial or harmful for them. In addition to providing information and being a source of entertainment for many people, social media has some disadvantages as well. Addiction to social media is a major cause of concern along with cyber crime and various health problems.The present study was conducted to test the impact of social networking sites on the youth and various problems associated with it

Key Words: Social networking sites; Social Media; Youth; Jammu;Influence.

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I. INTRODUCTION

Social network services are defined as 'web based services' which allow individuals to construct a public or semi public profile within a bounded system, communicate with users and view the pages and details provided by other users within the system (Boyd and Ellison, 2007). 'Six Degrees' was the first social networking site to be launched (founded by Andrew Weinreich in May 1977), that has paved way for present day social networking sites like Facebook, Snapchat, Instagram, Twitter etc.(Bedell, 1998)). Facilities available on internet are just like a big ocean which contain courtless options and it is entirely up to the youth while scanning this big water body what to pick up, pearls or pebbles as both exist in plenty.

Social media has brought both good and bad aspects into the lives of the young. Although, the use of internet by youth is a burning need of the time, social networking sites have created a very strong impact on the thinking and working of youth.

It may take months and years researching to collect desired material for any kind of work but with the help of social networking sites, things get completed within hours and minutes. By using video conferencing and other visual communication platforms, suggestions, decisions, teaching, counseling and assessments etc. can be conducted effectively (Abhani,2019). Social networking sites have also led to an increase in voter turnout in the elections as sometimes youngsters vote in elections by getting encouraged by their friends' posts. Some sites like Pinterest provide youth with creative and stimulating ideas and help them explore various images, GIFs and videos for their projects(Singh and Guruprasad,2019).

Apart from being user friendly, social networking sites also provide an inexpensive way of keeping in touch with friends and relatives (Khurana,2015) These sites help in communicating with each other, overcoming distress, studies, learning new skills chatting, sharing videos and photos, entertainment, job opportunities and many more (Parvathy and Suchithra,2015).

Social networking sites have both positive and negative impact on the minds of young people. They are getting addicted to these sites and spend a lot of time in useless activities and unnecessary chatting. Information shared is misused by some people. They suffer headaches, eye problems, postural deformities and insomnia. Fashion influencers on social networking sites have set up unrealistic beauty standards for youth due to which they fall prey to the vicious cycle of anorexia and bulimia.(News Article 2012) They may fall victim to cyber crime due to lack of privacy(Das and Shankar,2011). Social media also serves as a vortex of false information and rumors which may prove harmful to the uninformed.

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EVALUATION OF SKILL VARIABLE OF PHYSICAL FITNESS BETWEEN SLUM AND HIGH INCOME SCHOOL GIRLS

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ABSTRACT

Fitness is the ability of a person to live a full and balance existence. The totally fit person possesses physical well- being but also qualities such as good human relations, maturity and high ethical standard. The term physical fitness implies soundness of body organs such as the heart and lungs, a human mechanism that performs efficiently under or work conditions and a reasonable measure of skill in the performance of selected physical activity. This study aimed to find out the evaluation of skill variable of physical fitness between slum and high income school girls. For this purpose the researcher selected 60 girls' slum and high income school girls, age ranges between 10-15 years. Sample were selected for the study thirty slum girls were taken from Gandhi Nagar, Jammu thirty high income school girls were taken from Delhi Public school Jammu. Purposive sampling technique was applied to select the sample. Skill variable of physical fitness static balance was selected for this study. To find out the difference between slum and high income school girls data of selected skill variable of physical fitness 't test was applied at 0.05 level of significance. The result showed that there is significance difference found static balance.

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KEY WORD: Physical Fitness, Girls and Static Balance

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Effect of storage on the physico-chemical, color and microbiological properties of cheese prepared from stored pre-cheese

Monika Hans, Suresh Bhise and KS Minhas

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Abstract
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Introduction
Mozzarella cheese is the one of the most popular varieties of cheese in the world because of its primary use on the pizza topping (Kindstedt 2004) [15]. It occupies third place in Indian cheese market placed after processed cheese and cheese spreads. Mozzarella is a soft, unripened cheese variety of pasta filata family. It has moist, soft, elastic texture and lively surface sheen and when fresh posses a slightly salty taste and pleasant aroma. It also possesses a unique property called stretchability i.e. ability to form fibres or strings when hot. It is ideal for preparing a variety of food items especially as a topping on Pizza. Mozzarella cheese is made in many countries from cow milk, buffalo milk and even milk powder. The demand of Mozzarella cheeses is growing as the global demand for pizza and other foods has increasing manifold.

Milk production pattern faces great fluctuation/variation during the course of year. Production is abundant during winters and falls dramatically during summer months thereby lowering the fluid milk supply to population and widening the gap between supply and demand. During flush/glut season milk solids are conserved by processing them into a number of concentrated and dried products so that these can be put into use in lean period. A large number of such sources of milk solids i.e. concentrated milks, dried milks, casein powder and caseinates, whey powder and whey protein concentrates, dried cream, butter and butter oil/ghee are manufactured. These milk products have added advantages of longer shelf life than milk, guaranteed supply, uniform quality and improved microbiological quality.

In this work it is aimed to determine the important properties of mozzarella cheese made from fresh and stored pre-cheese stored under vacuum packaging (VP) and atmospheric packaging

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Original Research Article

A Comparative study of Zooplankton diversity and abundance of two Ramsar sites (Lake Mansar and Lake Surinsar) of Jammu Region, J & K

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ABSTRACT

Studies were carried out so as to compare the diversity of zooplankton along with physico-chemical parameters in two Ramsar sites (Lake Mansar and Lake Surinsar) of Jammu region. From the survey, 50 species of zooplankton were enlisted from Lake Mansar and 47 species were from Lake Surinsar. Lakes were also investigated for various physico-chemical parameters which interestingly showed some variability, an important reason presently estimated to be responsible for variation in diversity and abundance of inhabitant zooplankton in these two sister Lakes. Presently collected data on qualitative and quantitative aspects of zooplankton community were subjected to correlation studies and statistical

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Single crystal X-ray crystallographic study of 16α,17α-Epoxy-3β-hydroxypregn-5-en-20-one monohydrate

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ABSTRACT.
The title compound, 16α,17α-Epoxy-3β-hydroxypregn-5-en-20-one monohydrate crystallized in the orthorhombic crystal system with space group $P2_12_12_1$ having unit cell parameters: a=7.7080(7), b=9.3543(9), c=26.826(2) Å and Z = 4. A well defined single crystal was chosen for data collection. X-ray intensity data of 2054 reflections were collected using CuKα radiation (λ=1.54184Å). The crystal structure was solved by direct method and refined by full-matrix least-squares procedures to a final R- value of 0.0388 for 1772 observed reflections. The experimental crystal F(000) value is 760. The goodness of fit is 1.048. The H atom of the OH group and water were clearly identified in difference syntheses and both the positional and displacement parameters were refined. Other H atoms were included using a riding model, with C-H=0.93-0.98Å, and U_{iso}=1.5U_{eq} of the attached C atom for methyl H atoms and 1.2 U_{eq} for other H atoms. The maximum shift to e.s.d. ratio for all atoms in the final cycle was 0.001 (for x H32).
KEYWORDS: crystal structure, direct methods, hydrogen bonding, orthorhombic crystal system.

1. INTRODUCTION

The title compound (**II**) ($C_{21}H_{30}C_3 . H_2O$) was prepared by reacting 16-dehydro-pregnenolone acetate (16DPA) is (**I**)with hydrogen peroxide in presence of NaOH. The epoxidation is accompanied by hydrolysis of the acetate, the method used is given in literature [1].

2. EXPERIMENTAL DETAILS

White rectangular plate shaped single crystals of the title compound (Figure 1) were grown at room temperature from a 1:1 mixture of chloroform and petroleum ether by slow evaporation technique. The crystals were found to be orthorhombic. The number of molecules per unit cell was found to be 4. The space group was determined to be $P2_12_12_1$. Intensity data were collected using an Enraf Nonius CAD-4 diffractometer with graphite monochromated Cu *Kα* radiation at 293 K for a transparent rectangular crystal (0.3 x 0.2 x 0.1 mm), mounted on a glass fiber. The cell parameters were calculated by least squares from the setting angles of 25 reflections in the range $12 < \theta < 22°$. Two standard reflections were checked every an hour for intensity variations. There was no significant decay of the crystal over the entire data collection. A total of 2054 reflections were scanned ($0 \le h \le 9$, $0 \le k \le 11$, $0 \le l \le 32$) in a ω/2θ scan technique out of which 1772 were treated as observed using ($I > 2\sigma(I)$) as criterion. Data were corrected for Lorentz-polarization, extinction and ψ scan empirical absorption correction.

The structure was solved by direct methods using SHELXS86 software [2]. All the non-hydrogen atoms of the molecule were obtained from the E-map. Refinement of all the positional and isotropic thermal parameters of non-hydrogen atoms led to an R value of 0.113. Full-matrix least-squares refinement has been carried out using SHELXL97 software [3]. Refinement of all the positional and isotropic thermal parameters of non-hydrogen atoms led to an R value of 0.113. Four cycles of refinement with anisotropic thermal parameters brought the R-index to 0.071. The H atom of the OH group and water were clearly identified in difference syntheses and both the positional and displacement parameters were refined. Other H atoms were included using a riding model, with C-H=0.93-0.98Å, and U_{iso}=1.5U_{eq} of the attached C atom for methyl H atoms and 1.2 U_{eq} for other H atoms. The final refinement cycle converged R = 0.0388 and $wR(F^2)$ = 0.1107. The maximum shift to e.s.d. ratio for all atoms in the final cycle was 0.001 (for x H32). Final difference Fourier map revealed a residual electron density between -0.144 to 0.171 $eÅ^{-3}$. Atomic scattering factors were taken from International Tables for X-ray Crystallography (1992, Vol. C, Tables 4.2.6.8 and 6.1.1.4). The crystallographic data are summarized in Table 1.

3. RESULT AND DISCUSSION

The final fractional coordinates and equivalent isotropic thermal parameters for non-hydrogen atoms are listed in Table 2. Bond distances and bond angles, and torsion angles for non-hydrogen atoms are presented in Tables 3, 4 and 5, respectively. An *ORTEP* view of the molecule indicating atomic numbering scheme [4,5] is shown in Figure 2. Geometrical calculations were performed using *PLATON* [6,7] and *PARST* [8] softwares.

Observed bond lengths and bond angles are in good agreement. The values of the angles C12-C13-C17, C14-C13-C17, C8-C14-C15, C15-C14-C13 show significant deviation from the ideal tetrahedral value of 109.4° agree well with the corresponding values found in steroids and are a consequence of the severe strain caused by the fusion of the five and six-

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Study of multi-quasiparticle energy bands in neutron-deficient ^{117,119,121}Cs

Rawan Kumar, Shivali Sharma & Rani Devi ✉

The European Physical Journal Plus **135**, Article number: 62 (2020)

Abstract

The projected shell model is employed to interpret multi-quasiparticle energy bands in odd-mass neutron-deficient $^{117-121}$Cs isotopes. The experimentally known energy bands and their configurations are reproduced well by employing this approach. The analysis of theoretical results predicts the low-lying spin states to arise from the single quasiparticle band albeit the high-spin states are seen to arise from the superposition of three quasiparticle bands. In addition, the experimentally known signature partner bands and band head energies are also predicted in these isotopes which can serve as a clue for planning new experiments.

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Study of quasiparticle alignments and electromagnetic quantities in neutron-deficient even–even $^{110-120}$Xe isotopes

Rawan Kumar, Shivali Sharma, Rani Devi ✉ & S. K. Khosa

The European Physical Journal Plus **135**, Article number: 386 (2020)

Abstract

The yrast states and quasiparticle alignments in even–even neutron-deficient xenon isotopes are studied in the projected shell model (PSM) framework. A new set of Nilsson parameters are proposed to reproduce the proton alignments in these isotopes. The B(E2) transition probabilities along the yrast line are obtained from the PSM wave functions and compared with the available experimental data. By using the same wave functions, g-factors are also predicted.

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19. Agony of an Ambitious Woman in a Male-Dominated Society with Reference to Vijay Tendulkar's *Silence! The Court is in Session*

Ms. Chetna Mahajan Assistant Professor GCW Gandhi Nagar

Abstract: The word "Woman" encompasses the word "Man." The status of women in India has been subject to many changes over the span of Indian history. The contribution of women to a society's transition from pre-literate to literate is undeniable. Women in a male-dominated society face unique challenges. The purpose of this research paper is to explore the experiences of women working in a male dominated society, the challenges they face and what coping strategies they adopt that enable them to continue on their career paths.

The position of women in Indian society deteriorated early in ancient period, especially in the Indo-Aryan speaking regions, and their subordination continued till India's early modern period. Practices such as female infanticide, dowry, child marriage and the taboo on widow remarriage, have had a long duration in India, and have really proved difficult to root out. With the spread of women's education in India and due to the impact of colonialism, the Indian women rose against the cruelties of the male. They opposed polygamy, sought right to divorce, claimed equality in marital right, widow remarriage and demanded restriction on dowry. On account of these demands, several social legislations were enacted to improve the condition of the Indian women.

Working women face end number of problems at the workplace just by virtue of their being women. Social attitude to the role of women lags much behind the law. The attitude which considers women fit for certain jobs and not others, causes prejudice. Thus women find employment easily as nurses, doctors, teachers, secretaries or on the assembly line. Sometimes, a gender bias creates an obstacle at the recruitment stage itself. When it comes to remuneration, though the law proclaims equality, it is not always practised. In most families her salary is handed over to the father, husband or in-laws. So the basic motive for seeking employment in order to gain economic independence is nullified in many women's case. Women workers in India are faced with lot more challenges than their counterparts in the other countries. Besides of so many efforts from past years, female section of society is deprived in compared to male section. They are not given first

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A Woman's Quest for True Love with Reference to Kamala Das's *My Grandmother's House*

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The poem, My Grandmother's House, first appeared in Kamala Das's first anthology of verse titled *Summer Time in Calcutta* (1965). It is also an autobiographical poem in which the poet's longing for her parental house in Malabar is movingly described. She is reminded of her ancestral house where she had received immense love and affection from her grandmother.

The poet's feminine sensibility finds its clearest loveless relationships in it. A pessimism runs throughout the action of the poem. It reveals the poet's painful unfulfilled to visit her grandmother's house to which she is deeply and emotionally attached. The shocked to learn that the house is all in ruin after the death of her grandmother. She silence due to the wear and tear it has undergone in her absence. A death-like silence her grandmother's house.

Moreover, the intensity of her grief is suggestively conveyed by the ellipsis in the a few dots in this section of the poem. It was her disenchantment with her loveless which reminded her of her grandmother's pure and selfless love. Her heart is itself like window where the fresh air does not blow. The image of the house has stuck to her poet has also used the similes of a brooding dog show her inability to pay a visit grandmother's house. She has also used suggestive visual imagery of 'blind eyes windows' and 'the frozen air' to convey the idea of death and desperation.

There is a house now far away where once(...)
To read, and my blood turned cold like the moon

The poem, My Grandmother's House, which can be read in full here, shows Kamala intense love and attachment to it. She suffers from an acute sense of alienation after having this place after her marriage.

The poet now lives in a big city after her marriage, a remote place from grandmother's house. She is reminded of her grandmother's house where she spent memorable childhood. Ironically, it is the only place where she received love from grandmother. The death of the grandmother is even mourned by the house to which she emotionally attached. A death-like silence reigned in the house after her exit from this world. seems that the grandmother was the very soul of this house. Being deserted, the snakes seen among books in the library of the house. At that point of time she was too young those books which looked quite horrible and repulsive like snakes. She was almost frozen fear at the passing away of her grandmother and seemed cold like the moon.

The very opening lines of the poem capture alive the poet's mood of nostalgia reminded of the happiest days of her childhood which she spent in the company grandmother. She was deeply attached to her grandmother who was very caring and affectionate to her. She was emotionally destabilized after the death of her grandmother and felt almost broken. The intensity of her grief is suggestively conveyed by the ellipse in the form of dots in this section of the poem. It was her disenchantment with her loveless marriage reminded her of her grandmother's pure and selfless love.

How often I think of going
(...)
Dog...

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EMOTION REGULATION, HAPPINESS AND LIFE SATISFACTION IN PRACTITIONERS AND NON-PRACTITIONERS OF YOGA: A COMPARATIVE STUDY

Eisha Gohil*

ABSTRACT

Emotion regulation reduces, reinforces and maintains both positive and negative emotions, depending upon the present goal of a person. Being aware of one's emotions is a key component of mental health. The purpose of emotion regulation is to replace maladaptive emotions with the adaptive ones, in order to produce modifiable responses to the environment, thus increasing happiness and well-being. The aim of the present study was to examine, if yoga training may influence the use of cognitive reappraisal and expressive suppression, the strategies of emotion regulation. The study aimed to assess differences in emotion regulation, happiness and life satisfaction in practitioners and non-practitioners of yoga. A sample of 80 participants (40 practitioners and 40 non-practitioners) in the age range of 40-60 years was collected from different centers of Bhartiya yog sansthan of Jammu city, India. Emotion regulation questionnaire, subjective happiness scale and satisfaction with life scale were used as tools. t-test was used for analysis. Results indicated a significant difference on both dimensions of emotion regulation (cognitive reappraisal and expressive suppression) happiness and life satisfaction. The mean scores indicated that practitioners of yoga had increased level of cognitive reappraisal, happiness and life satisfaction as compared to the non practitioners of yoga.

Keywords: *Cognitive reappraisal, emotion regulation, expressive suppression, happiness, life satisfaction, practitioners, yoga*

Introduction

Emotions are state of mind which are multi-dimensional and are influenced by cognitive mechanisms, experiences, biological responses, and behaviors. On the other hand, emotion regulation is the process of creating, experiencing and expressing emotions as and when they occur (Rottenberg & Gross, 2003). Research suggest that long-term suppression could accustom an individual to emotional stimuli, leading to the development of psychological disorders (Wegner & Zankos, 1994; Wenzlaff & Wegner, 2000). People who practice yoga have significantly high cognitive reappraisal compared to people who do not practice yoga (Gross & John, 2003). Emotional intelligence is a very important aspect of person's psychological functioning that includes emotion regulation within two strategies: cognitive reappraisal and expressive suppression. Reappraisal strategy refers to experiencing and expressing greater positive emotion and lesser negative emotion with better interpersonal functioning, while suppression strategy refers to experiencing and expressing lesser positive emotion and greater negative emotion with worse interpersonal functioning (Cross & John, 2003).

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Researchers have tested the effectiveness of yoga in relieving the symptoms of depression, anxiety, PTSD (da Silva, Ravindran, & Ravindran, 2009) and neuropsychiatric disorders (Balasubramaniam, Telles, Doraiswamy, 2013). As reappraisal occurs early in the emotion-generative process (an antecedent-focused strategy; Ochsner & Gross, 2008), it may modify the whole emotional process and response. It is a form of cognitive change that involves changing the way of thinking about a situation by altering its emotional meaning and impact. Suppression is a form of response modulation (a response-focused strategy) that involves inhibiting ongoing emotion-expressive behavior (Gross, 1998). It comes later in the emotion-generative process and does not influence the emotion

city, India. The data was collected over a period of 1 month.

Measures

Emotional Regulation Scale (ERQ; Gross & John, 2003) will be used to assess the ability to control emotions. It looks at two emotion regulation strategies of cognitive reappraisal as a positive strategy and emotion suppression as a negative. The questionnaire includes 10 statements which require participant to respond by using a 7-point type scale and placing suitable numbers preceding each statement in paper and scale and tick an appropriate answer. The version on the scale ranging from 1 to 7, including Strongly Disagree to Strongly Agree. There are two subscales in the questionnaire:

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An efficient down conversion luminescencent probe based on a $NaGdF_4:Eu^{3+}/Ce^{3+}$ nanophosphor for chemical sensing of heavy metal ions (Cd^{2+}, Pb^{2+} and Cr^{3+}) in waste water†

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Heavy metal ions (such as Cd^{2+}, Pb^{2+}, Cr^{3+} etc.) present in wastewater effluents pose a great challenge in developing and underdeveloped countries. Herein, we report a facile hydrothermal synthesis and characterization of hexagonal Eu^{3+} doped and Eu^{3+}/Ce^{3+} co-doped $NaGdF_4$ nanophosphors. Importantly, we demonstrate the $NaGdF_4:Eu^{3+}/Ce^{3+}$ nanophosphor as an efficient photoluminescent probe for chemical sensing of heavy metal ions, namely Cd^{2+}, Pb^{2+} and Cr^{3+}, present mainly in industrial effluents. The structural characterization of the as fabricated nanophosphors has been appropriately performed by powder X-ray diffraction study (PXRD), field emission scanning electron microscopy (FE-SEM), transmission electron microscopy (TEM), high-resolution transmission electron microscopy (HR-TEM), Fourier transform infrared spectroscopy (FT-IR) and energy-dispersive X-ray spectrometry (EDS). Vibrating sample magnetometry (VSM), photoluminescence (PL) spectra and phosphorescence lifetime measurements of the as synthesized nanophosphors have been used to explore their potential applications. It is observed that Eu^{3+}/Ce^{3+} codoped nanophosphors show relatively better luminescence intensities as compared to $NaGdF_4:Eu^{3+}$. The energy transfer process (through sensitizer Ce^{3+} to mediator Gd^{3+} and finally to activator Eu^{3+}) has been validated in an elegant way. The observed data for chemical sensing of three heavy metal ions (Cd^{2+}, Pb^{2+} and Cr^{3+}) show good Stern–Volmer fitting.

Introduction

Lanthanide doped nanocrystals are of great interest in the field of science and technology due to their highly efficient and extraordinary photoluminescence properties.[1] The rare-earth doped nanophosphors have been extensively studied for their fascinating wide range of applications. These nanophosphors find widespread use in multicolour displays, lasers, television tubes, solar cells, mobile telephone screens[2–6] and many other fields such as multicolour emission.[7] Lanthanide ion based luminescent nanomaterials have played an incomparable role due to the occurrence of intra f–f transitions with large Stokes shifts, narrow emission bands[8–10] and long-lived luminescence.[11] Multicolour luminescent materials have been synthesised by co-doping of lanthanide ions with transition metal ions into the host nanocomposites.[12–14] Multicolour emission by such phosphors generally involves excitation of the activator to a higher energy state followed by relaxation to the lowest energy level and transfer of photon-energy to the emitter, which ultimately shows emission as photoluminescence.[15,16] Host matrices with high tolerance for luminescent centers are co-doped with a sensitizer, activator and mediator to enhance the intensity of photoluminescence emission.[17–21] Moreover, core–shell nanostructures have been probed to protect the dopants against surface quenchers and improve the luminescence properties. Generally, the shell layer encapsulates the core in the nanocomposite and shows enhancement of the luminescence intensities.[22] In nanophosphor chemistry the trivalent cerium ion is regarded as an excellent sensitizer as it shows a broad ultraviolet band ($4f \rightarrow 5d$) transition allowed by Laporte parity selection rules.[23] However, when the Ce^{3+} and Eu^{3+} ions are codoped in any host materials, they may show quenching of each other due to electron transfer processes. Therefore, $NaGdF_4$ is chosen as an ideal host material in order to circumvent the quenching processes as Gd^{3+} ions play a crucial role by acting as a mediator. The trivalent

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† Electronic supplementary information (ESI) available: FESEM images of $NaGdF_4:Eu^{3+}$ and $NaGdF_4:Eu^{3+}/Ce^{3+}$ (Fig. S1 and S2), SEAD patterns (Fig. S3), EDS spectra (Fig. S4 and S5), FT-IR spectra (Fig. S6 and S7), photoluminescence (Fig. S8–S10), lifetime decay curves (Fig. S11–S13) and tables of EDS data (Tables S1 and S2). See DOI: 10.1039/c9nj04889h

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"IMPACT OF DEMOGRAPHIC VARIABLE ON COLLEGE CLIMATE OF TEACHERS WORKING IN HIGHER EDUCATION DEPARTMENT"

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ABSTRACT

The aim of present paper was to explore the Factors and Impact of Demographic Variable on College Climate of Teachers working in Higher Education Department.

Methodology & Selection of Sample: To collect the data regarding College Climate Dr. A.K. Gaur College Climate Questionnaire was used. 40 Teachers of Govt. Degree College Samba was selected for the study. Z Scores, Mean, S.D. and t-test was used to test the hypothesis.

Findings: The findings of the study showed that there is significant difference between Gender on Physical and Administrative College Climate of Teachers.

Limitations: The study is limited to one district only and it only covered Govt. College of Samba District.

Keywords: College Climate, Organisation, College Teachers, Well-being Programmes.

INTRODUCTION

A teacher is a member of the society. A teacher plays his role towards society in two ways (a) inside the college by helping students for effective citizens and outside the college by performing the role of a social worker and an agent of social change. In the college he plays a vital role. In the words of Dr. E.A. Pires "he has to concern himself with the total development of the child and not only with one or two aspects. He must befriend him and help him in his emotional and social development. He must be a philosopher illuminating the way of this intellectual and spiritual progress. He must be his guide in his moral and aesthetic advancement.

In fact, he must be all things to all the pupils – a physician concerned about their physical health, a mental hygienist leading them carefully to sound mental health, a philosopher guiding them painstakingly in their search for truth, a moralist assisting and encouraging them to acquire goodness, an artist helping them to find beauty. In fact he must be a

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Study of Characterization and Quantification of Municipal Solid Waste in Doda Town of Jammu and Kashmir as a Measure of Effective Management

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ABSTRACT

Waste has been a major environmental issue everywhere including the Doda region of Jammu and Kashmir, due to the increase in the population and the standard of living of people. High standards of living of ever increasing population have resulted in an increase in the quantity and variety of waste generated. It is now realized that if waste generation continues recklessly then very soon it would be beyond rectification. Management of solid waste has therefore become very important in order to minimize the detrimental aftermaths of solid wastes. The Municipal Solid Waste generated from different activities in the residential and city areas are a subject of deep concern for its proper management. The improper management of the Municipal solid waste is a major cause for water, air and soil pollution. Despite some progress, municipal solid waste still remains one of the major challenges in environmental management. The results shows that the composition of the waste generated in study area is dominated by food wastes, grasses and leaves (89.59%) followed by plastic and wood (10.41%). The analysis also indicated that solid waste management capacity of the study area was under stress due to different reasons. Currently, the overall technical arrangement right from collection including transport, storage, discharge and disposal is still in poor condition, which leads to environmental and health risks. Finally, it is recommended that these problems should be solved in an integrated manner by improving legislation, environmental education and solid waste management facilities so as to reduce the risk on environmental and public health. The study carried out was first of its kind in the Doda Town of Jammu and Kashmir, India.

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Preliminary Survey of Sedge and Grass flora of GCW, Gandhi Nagar, College Campus, Jammu, J&K and their Ethno Botanical Uses

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Abstract

Govt. College for Women, Gandhi Nagar, Jammu is located in suburbs of Jammu, on the southern bank of Tawi river. The college spreads over 186 Kanals of land. The vegetation of the college campus is of a dry, mixed deciduous type and sedges and grasses form an important component of its wild flora. Although sedges and grasses represent the main wild plant component of the vegetation of college campus they have never been studied so far.

Taking into consideration taxonomic diversity of sedges and grasses and their functional role in the restoration of ecosystem, biogeochemical cycling and their ethnobotanical uses, a preliminary survey of sedge and grass species was conducted in the college campus from July 2019 to March 2020. The study revealed a total of 1 genus and 2 species of sedges and 17 genera and 22 species of grasses. Many of these sedge and grass species have known ethno botanical uses.

Keywords: Sedges, Grasses, Ethno Botanical Uses.

Introduction

The term "Grasses" commonly refers to monocotyledonous, annual and perennial herbs with narrow leaves growing from the base and having fibrous roots. They include both the "true grasses", from the Poaceae family and the sedges from Cyperaceae family. The true grasses include cereals, bamboo and the turf grasses, while sedges include many grass-like non grass plants particularly, wildmarsh and grassland plants from Cyperaceae family.

Poaceae and Cyperaceae are the two largest families of Monocotyledons. Cyperaceae is represented by 70-80 genera and 4000 species distributed throughout the world. The Family Poaceae comprises of about 11,290 species in approximately 707 genera [1] worldwide. Grasses and sedges are the dominant vegetation in many habitats, including grassland, marshes, reed swamp etc., and they form important part of almost every other ecosystem. Grasslands are among the largest ecosystems in the world. Their area is estimated at 52.5 million square Kilometers, or 40.5 percent of the terrestrial area excluding Greenland and Antarctica [2].Grasses are very important source of food and fodder. Many types of animals including many herbivorous mammals and insects are dependent on these grasses and grass like plants as their main food. In addition they also find their use in ethno medicinal and various religious practices. Many of grasses and sedges find their mention in ancient Indian medicine literature.

From the ecological point of view also they are very important as good soil binders as they make a carpet over the soil thus preventing soil erosion. They also add lot of Soil Organic matter (SOM), thus increasing fertility of soil. In addition they also play important role in biogeochemical cycling of Carbon, Nitrogen and Phosphorus [3]. They are an important component of the urban and suburban landscapes in most parts of the world. Despite the importance of grasses to humans in various ways, the grasses remain to be less studied plant groups as compared to other flowering plants especially in India. This may be due to difficulty in identification because of their small size of floral organs and complicated structure of inflorescence. Some important works on diversity of grasses in Indian include "A Handbook of some South Indian Grasses" by Achariyar

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Integration operators from H^∞, bloch and bmoa spaces to Bloch type spaces

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Abstract
In this paper, we characterized boundedness and compactness of generalized integration operator from H^∞, Bloch and BMOA spaces to Bloch type spaces. Moreover, the operator norm is estimated.

Keywords: Integration, operators, bmoa, spaces, Bloch

1. Introduction

Let $\mathbb{D}$ be the open unit disk in the complex plane $\mathbb{C}$, $H(\mathbb{D})$ the space of all functions holomorphic on $\mathbb{D}$, $dA(z) = \frac{1}{\pi}dxdy = \frac{r}{\pi}rdrd\theta$ be the normalized area measure on $\mathbb{D}$ and H^∞ the space of all bounded holomorphic functions with the norm $\| f \|_\infty = \sup_{z\in\mathbb{D}} |f(z)|$.
Let $\alpha > 0$. The α-Bloch space B^α on $\mathbb{D}$ is the space of all holomorphic functions f on $\mathbb{D}$ such that $\sup_{z\in\mathbb{D}} (1-|z|^2)^\alpha |f'(z)| < \infty$.
The little α-Bloch space B_0^α consists of all $f \in B^\alpha$ such that $\lim_{|z|\to 1} (1-|z|^2)^\alpha |f'(z)| = 0$.=
Both spaces $\mathcal{B}^\alpha$ and $\mathcal{B}_0^\alpha$ are Banach spaces with the norm $\| f \|_{\mathcal{B}\alpha} = |f(0)| + \sup_{z\in\mathbb{D}} (1-|z|^2)^\alpha |f'(z)|$, and $\mathcal{B}_0^\alpha$ is a closed subspace of $\mathcal{B}^\alpha$. If $\alpha = 1$, they become the classical Bloch space B and little Bloch space B_0 respectively. Throughout this paper constants are denoted by C, they are positive and not necessarily the same at each occurrence. The notation $A \lesssim B$ means that there is a positive constant C such that $A \leq CB$. When $A \lesssim B$ and $B \lesssim A$, we write $A \approx B$.
It is well known (see Theorem 5.4 of [21]) that for each $n \in \mathbb{N}$ and $f \in \mathcal{B}$, we have

$$\sup_{z\in\mathbb{D}} (1-|z|^2)^n |f^{(n)}(z)| \lesssim \| f \|_{\mathcal{B}}.$$

Since $H^\infty \subset B$ and $\| f \|_{\mathcal{B}} \leq 2 \| f \|_\infty$ for all $f \in H^\infty$ (see Proposition 5.1 of [21]). Then for all functions $f \in H^\infty$, we have

$$\sup_{z\in\mathbb{D}} (1-|z|^2)^n |f^{(n)}(z)| \lesssim \| f \|_\infty. \tag{1.1}$$

For more information about Bloch spaces we refer to [21].
For $0 < p < \infty$, the Hardy space H^p containing all holomorphic functions $f: \mathbb{D} \to \mathbb{C}$ such that

$$\| f \|_{H_p} = \sup_{0<r<1} \left(\int_0^{2\pi} |f(re^{i\theta})|^p \frac{d\theta}{2\pi} \right)^{1/p} < \infty.$$

If $0 < p < 1$, H^p is a complete metric space. For $1 \leq p < \infty$, H^p is a Banach space under the above norm (see [6]).
For $a \in \mathbb{D}$, let $\sigma_a(z) = (a-z)/(1-\bar{a}z)$ be the automorphism of $\mathbb{D}$ that interchanges 0 and a. Let the Green function in $\mathbb{D}$ with logarithmic singularity at a is given by

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Rise of E- Learning and Teaching

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ABSTRACT

E- learning has features that cater to these modern learner preferences – hence its rise in popularity. With online learning, learners can access content anywhere and anytime. E-learning tools enable learning designers to make content interactive. Electronic Teaching involves computational systems that communicate and cooperate with learners at many levels. E-teaching constitutes an essential prerequisite for achieving efficient and fruitful e-learning in higher education, particularly at the undergraduate level.

Keywords

e- learning, computational system, higher education

Introduction

E-Learning means a lot of different things and it is understood differently by players with very different roles. The E-Content Report (2004) describes e-learning "as an umbrella term describing any type of learning that depends on or is enhanced by electronic communication using the latest information and communication technologies (ICT)".It is also defined as "a generic term covering a wide set of ICT technology-based applications and processes including computer-based learning, web-based learning, virtual classrooms, digital collaboration and networking"

Education can become transformative when teachers and students synthesize information across subjects and experiences, critically weigh significantly different perspectives, and incorporate various inquiries. Educators are able to construct such possibilities by fostering critical learning spaces, in which students are encouraged to increase their capacities of analysis, imagination, critical synthesis, creative expression, self-awareness, and intentionality. The development of online courses in higher education doesn't happen overnight. While in general, internet-based learning is considered an option, an alternative to traditional learning, during the Coronavirus pandemic it became an essential element for maintaining the activity of schools and universities.

Online education is here and is highly likely to stay and grow. The review of its history clearly shows online education has developed rapidly, fueled by Internet connectivity, advanced technology, and a massive market. It has evolved from 19th century correspondence programs to the 21st century's vibrant and well-designed institutional online offerings. We can well anticipate that online education will continue to increase its presence and influence higher education through a vigorous process of reshaping, refining, and restructuring. It is unlikely, however, to replace traditional higher education but merely to be an alternative. But, owing to its flexibility, accessibility and affordability, online education is gaining in popularity, especially for people who are otherwise unable to obtain education because of physical distance, schedule conflicts, and unaffordable costs.

Growing demands for e-learning require a combination of methodologies, tools, and technologies to effectively scale by e-learning development throughout the organization. As e-learning is definitely a growing field in the educational and training market and elearning standard is a new emerging area, there are many challenges in implementation of undergoing technological changes and developments. The security of services, the encryption of messages and the common taxonomies to describe services and service x= access points in e-learning systems

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environments are all in need of consideration. However, Supporters of e-learning are always looking forward some new developments. Technology advancements will continue to reshape learning over the Internet with increasing use of advanced tools and techniques. Many business houses are now moving towards using e - learning technologies for induction and refresher trainings. The key drivers influencing businesses to consider elearning technologies: 1. Cost: e-Learning can reduce costs of travel and lost productivity associated with face-to-face training, and can also reduce costs of content development because content can be reused and repurposed. 2. Scalability: Networking or Internet capabilities permit content to be scaled up to large numbers of learners, with

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CAREER OPPORTUNITIES IN HOME SCIENCE

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Abstract:

Home Science is an integrated field of study that provides scientific and systematic knowledge about various aspects of family living .Home Science is concerned with home and includes health and happiness of each and every person residing in it. It is a blend of science and art which gives a variety of skills to the youth such as cooking, catering, processing, stitching, decoration, boutique, fashion designing, day care and health care. It also aims at developing an individual, its knowledge, attitudes, values and skills which guides one to meet personal needs and aspirations of an individual to become a well adjusted member of the family. The present study mainly focussed on an overview, emerging career opporunities of home science in the country. In recent scenario home science is gaining huge popularity among youth owing to its wide application in private sector, government sector, semi govt. and along with entrepreneurshing opportunities.

Home Science professionals have ample opportunities in private sector (cooking, fashion designer, housekeeping, dietician) NGOs (social welfare office, food analysts, research officer), government sector (scientists, professor, research analysts) and entrepreneurial opportunities (boutique, grooming centre, hobby classes, child care centre, catering, health care etc). Thus, home science is an emerging academic discipline which has numerous opportunities for wage employment as well as self employment.

Keywords: ***Home Science, Career Opportunities, Self Employment, Wage Employment, Entrepreneurship.***

I. INTRODUCTION:

Home Science means the art of managing your resources efficiently and the science of achieving a healthier, happier home and if need be a successful career. You must have noticed that words 'art' & 'science' being used together in the above definition. This is because the home science teaches you the art of using things so that a beautiful harmonious whole is achieved and an overall pleasant effect is created. At the same time, it gives you all the knowledge of the scientific problems involved in making a home beautiful.

Home Science in simple words includes all the things that concern yourself, your home, your family members and your resources. It aims at getting maximum satisfaction for you and your family members through the effective and scientific use of

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Inherent Relationship between Mechanical Properties and Microstructure of Eutectic All Pb-Cd

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Abstract: *The main aesthetics and motivation of the current study was that batch growth of eutectic alloys in fusion wo high-quality composites with anisotropic properties of greater industrial interest. In the present study conducted for this anisotropic hardness of eutectic Pb-Cd alloys was revealed, with particular focus on the relationship between isotropic and solidification modes and the microstructure obtained from mechanical properties. Since the essence of composites technolo concept of designing materials with novel properties into acceptable analogues for production, briefly implied in this work to place strong rigid lamellae in the right place, in the right volume proportions, and in the right orientation.*

Keywords: Eutectic alloys, anisotropic, isotropic, lamellae, composite technology

1. Introduction

One of the most systematic techniques to produce composite materials of Industrial value is anisotropic solidification which includes the periodic growth of eutectic alloys from their molten states. Thermal stability and mechanical properties of composites thus produced are remarkable when compared to their individual constituents. These materials are used at higher service temperatures than their base metal counterparts; and their reinforcement may improve specific stiffness, specific strength, abrasion resistance, creep resistance, thermal conductivity, and dimensional stability. These materials have many advantages than polymer-matrix composites due to their higher operating temperatures, non-flammability, and greater resistance to degradation by organic fluids. Metal-matrix composites are used in automobile industries, drive shafts, extruded stabilizer bars, forged suspension and transmission components, aerospace industries, etc. structural applications include advanced aluminum alloy metal-matrix composites; boron fibers are used as reinforcement for the space shuttle orbiter, and continuous graphite fibers for the Hubble telescope.

2. Experiment Details

The constituent metals Pb (99.97% Thomas Baker Chemicals Limited, m. p.600 K) and Cd (99.99% Alpha Aesar, A Johnson Matthey Company, m. p.594K), were used in the preparation of binary eutectic alloy. The purity of constituent metals was authenticated by thermal analysis as their melting temperatures were found approaching the literature values very closely and is given in the parenthesis. Eutectic alloy Pb-Cd was prepared with weight percent compositional proportions, 64 wt% Pb and 36 wt% Cd. Homogeneity of the eutectic alloy was ascertained by the heat-chill method. The composition of the alloy was confirmed with the determination of its melting temperature by the thermal analysis (LINSEIS STA PT-1000). The experimental melting temperature of eutectic alloy Pb-Cd (513.18 K) was found in good agreement with the literature value (513.20 K).

The technique adopted to compute modulus tensile and compressive strengths for the anisc isotropic mode of solidification of eutectic and materials are presented in the following

Anisotropic growth: Pyrex tubes were used to d shaped growths of alloys in the molten experimental sealed Pyrex tube containing fresh semi-molten eutectic or metal was fixed in the c empty graduated beaker (volume ~10^{-3}m^3) place oven at a temperature 30 K above the melting p sample. The molten mass in the tube was ma circulating silicone oil at 21 different inter experimental time interval of 5-45 min in a pe reservoir at a temperature of ~300 K. The silicon touched the bottom of the tube, resulting in an growth process along the length of the tube. Seve of the eutectic alloy and its constituent m anisotropically with different but nearly const rates determined by the circulation of an app equal volume of oil during the indicated intervals.

Isotropic growth: Critical-sized nuclei gre instantaneously in all directions, holding a l containing a melt 30 K above its free; perpendicular to an ice bath maintained at ~27. Many samples of eutectic alloys and their pl immediately.

Mechanical strength: After dimensioning w calipers, the test samples were subjected to ten burst modulus (flexural strength) and compre Rockwell hardness tester.

a) Tensile test: Known dimensional samples of or instantaneously grown eutectic or n materials were tested by holding them perpe tensometer at both ends. A continuously incr was applied until the captured sample or resisted and ruptured approximately at the mass.

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Spatio-temporal changes in the Machoi glacier Zanskar Himalaya India using geospatial technology

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ABSTRACT

We present the temporal changes of Machoi glacier, Zanskar region of the north-western Himalaya, India using multi-temporal Landsat satellite data from 1973 to 2018. The results suggest that the Machoi glacier has retreated consistently from last 45 years with an uneven retreat rate. The temporal fluctuations since 1973 AD reveal that the glacier snout has retreated ~563 m at an average of ~12.51 m yr^{-1}. However, the snout has retreated at variable rates during different time intervals e.g., 80 m (average of ~11.43 m yr^{-1}) from 1973 to 1980 AD, 120 m (average of ~12.0 m yr^{-1}) from 1980 to 1990 AD, 123 m (average of ~12.3 m yr^{-1}) from 1990 to 2000 AD, 128 m (average of ~12.8 m yr^{-1}) from 2000 to 2010 AD and 112 m (average of ~14 m yr^{-1}) from 2010 to 2018AD. The highest rate of snout (~14 m yr^{-1}) retreat during 2010–2018 AD is linked to the changing climate in the region as observed from the meteorological data. The analysis of meteorological data suggests that during this period temperature as well as the liquid precipitation have increased due to global warming whereas the extent of solid precipitation has decreased which might be the possible causes of higher retreat of Machoi glacier.

1. Introduction

Glaciers in the Himalayas are spread from east to west in mountainous part of Indus, Ganga and Brahmaputra (IGB) basins. However, the concentration of glacier varies from northeast to northwest of Himalayas because of variability in latitude and altitude. The Himalayas comprises around 9500 glaciers which cover 37000 km^2 of area (Raina and Srivastava, 2008) and are considered as third pole of the earth, forming a permanent storage house of water and act as reservoirs of the natural fresh water (Brahmbhatt et al., 2015; Abdullah et al., 2020; Bisht et al., 2021; Singh et al., 2021a,b; Sood et al., 2021a). The mass balance estimations carried recently using Spot-5 and Shuttle Radar Topography Mission (SRTM) derived Digital Elevation Model (DEM) for Himalayas, demonstrates that mass loss is less in the central and eastern Himalaya compared to the western Himalaya (Gardelle et al., 2013). Furthermore, the estimated ice loss for the end of 21st century is maximum for glaciers of Jammu-Kashmir region (Kaab et al., 2012).

In general, the Himalayan glaciers are retreating faster than other glaciers on the earth, with an average area loss of ~0.4% per year in response to the climate changes (Bolch et al., 2012; Kulkarni et al., 2011). The glaciers of Karakoram region are stable or advancing, commonly called as "Karakoram anomaly", as compared to retreating

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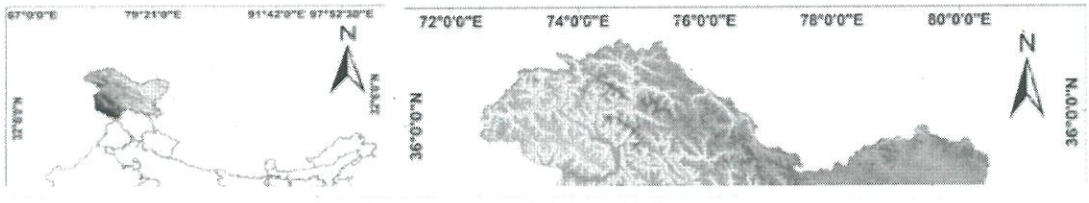

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Abstract

The Coronavirus disease (COVID-19) has impacted every segment of life like commercial establishment, education, economy, religion, transport tourism, employment, entertainment, food security, sports, etc. The outbreak is a major destabilizing threat to the global economy. COVID-19 has heightened human suffering, undermined the economy, turned the lives of billions of people around the globe upside down, and significantly affected the health, economic, environmental and social domains.

Keywords

COVID-19, education, economy, tourism, health, social domain.

Introduction

World Health Organization (WHO) announced Corona Virus which is also referred as COVID-19 as a disease on 11th February 2020. It is a respiratory disease which impacts the health of the individual as a whole. The first case of COVID -19 was first reported in China in December 2019. The WHO declared the novel Corona Virus as a Pandemic disease in March 2020, which means that the new virus is spreading rapidly across the countries around the world. The symptoms of this virus include, fever, and cough, sore throat and difficulty in breathing. Initially, the individual shows mild symptoms and most of the time people treat this as mild flu. As it is a respiratory disease, it can spread by inhaling the droplets in the air. It can also spread by touching the infected person.

The world is undergoing a process that some have called "covidisation", or the unravelling of the manifold, far-reaching medical, economic, and social impacts of a global health emergency[1]. There is no dearth of analyses of the many health and economic dimensions of this first massive global civil emergency of the 21st century[2].

Older people and people with many serious medical conditions are the most likely to experience lingering COVID-19 symptoms, but even young, otherwise healthy people can feel unwell for weeks to months after infection. Common signs and symptoms of Covid include

An Overview of Ethno-Veterinary Plants used in the Union Territory of Jammu and Kashmir (J&K)

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Abstract

Ethno-veterinary plants are traditionally used for general healthcare and disease treatment of the livestock. Plants have been used for treatment of not only human diseases but also diseases of the livestock since the domestication of animals during the course of civilization. But at present this practice is only prevalent in the tribal and rural populations. This indigenous knowledge regarding ethno-veterinary practices of local people is based primarily on the respective regional flora available in their surroundings. Therefore, all these medicinal plants need to be documented for their scientific screening in order to find out newer sources of ethno-veterinary drugs of herbal origin. The present paper aims at providing a detailed review of the studies done on ethno-veterinary plants of the Union Territory of J&K, which is a pre-dominantly rural area with major agricultural and pastoral population.

Keywords: indigenous use. Ethno-veterinary, livestock, traditional, medicine

Introduction

Human beings have been using plants for various purposes since their evolution on this planet. Apart from meeting the basic requirements of food, clothing, shelter and medicine; plants have been used for art, craft, jewellery, adornments, religious purposes and in numerous other ways to enrich human life since the dawn of civilization. The branch of botany dealing with traditional knowledge of all these aspects of plant use by indigenous people is referred to as Ethnobotany. Man has used medicinal plants for treating human as well as animal diseases. The plants traditionally used for general healthcare and disease treatment of the livestock are called Ethno-veterinary plants. The study of these plants is an important aspect of Ethnobotany which is sum total of all the relationships between man and plants. The primary research in this field, like all branches of ethnobotany involves the documentation of all the plants used in traditional practices. This ensures preventing further loss of traditional knowledge as it is mostly passed on verbally to generations and there is no written record. The documented records of these plants can be further used for scientific investigations (Sikarwar and Tiwari, 2020). The present paper aims at reviewing the studies done on ethno-veterinary plants of the Union Territory of J&K, India. The review shall be helpful to identify the unexplored as well as underexplored areas of the field in order to document and preserve the traditional knowledge regarding ethno-veterinary plants for further research.

Study Area

The Union Territory of J&K has an approximate geographical area of 42,241 km² and is divided into 20 districts. The region being located in the Northwest Himalayas is habitat of diverse flora. The area is predominantly rural with mainly agricultural and pastoral livelihood.The Union Territory is home to different ethnic groups such as Kashmiri, Dogri, Bhaderwahi,etc and many tribes like Gujjars, Bakarwals, Gaddi, Sippi, Shina, Bot,etc also inhabit the area. People use locally available plant species in many ways including the ethnomedicinal and ethno-veterinary purposes. The multicultural population, various tribal groups, less urbanization and high plant diversity are responsible factors for rich traditional knowledge of this region.

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BATTLING ORTHODOX : GRACE UNDER PRESSURE IN *THE HOLY WOMAN* BY QAISRA SHAHRAZ

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ABSTRACT

Qaisra Shahraz is the novelist of the new era, dealing with the issues of modern society. She has set her novels in modern day Pakistan, but her characters transgress time and the locale they are set in. The insight in to the life of each character brings live the society that she has depicted in her navels. The rustic settings of her novel make us realize the complexity of life in rural Pakistan and the close knit society. Although her locale is basically rural but her characters have a universal appeal, going through the familiar feelings of love, agony, suffering, pain and tolerance. Human feelings are well identified by the readers and one tends to live by the joys and the sorrows of the characters. Qaisra Shahraz brings forth the norms of Islam and demystifies them to the myths of the West. She has thrown light on the issues of marriage, divorce, life, death, guilt and honour. She has depicted most complex human emotions and their role in an individual's life in the most tactful manner. She has highlighted the laws of Islam and their distortions in the name of islam. She has laid bare the practices of the Muslim community where the spirit of Islam is being crushed under the burden of traditions. Zari Bano is a modern woman for whom traditions did not matter much she is an open minded, outward girl of modern times. She shows tolerance towards the patriarchal culture and takes up the religious teachings and denounces the tradition of the *Shahzadgi Ibbadat*. The tradition of the Holy Woman ceremony is just like a normal ceremony in the Pakistani culture but the only difference is that there is no groom; the woman is married to the Holy Quran. She transforms herself gradually into the role of a tradition of a holy woman who seeks sound knowledge of Islam. *The Holy Woman* shows how the old and the new, the traditionalist and the rationalist, the patriarch and the feminist, standing at the crossroads of rural Pakistan, make an effort to identify ,and follow the path of their choices. Zarri Bano epitomizes how women, noosed by traditions, negotiate their way to self-realization by blending the modern with the traditional. Change, however, does not mean standing alone, Qaisra Shahraz advocates a cohesive framework forging solidarity between the first and the third world women.

Keywords: Holy Woman, Religious Traditions, Violence, Identity, Transformation, Culture, Self-Realization.

Qaisra Shahraz is a novelist of the new era, dealing with the issues of modern society. Her novels give an insight into th life of people of Pakistan in the modern society, as she has presented the basic faith of the Muslim's and the principles of Islam. She has dealt with the most sensitive themes in the most subtle manner. The sight into the life of each character brings alive the society that she has depicted in her novels. The rustic settings for her novel make us realize the complexity of life in rural Pakistan and the close knit society. Although her locale is basically rural, her characters have a universal appeal, going through the familiar feelings of love, agency, sufferings, pain and tolerance. Human feelings are well identified and one tends to live by the joys and the sorrows of the characters.

The society depicted by Qaisra Shahraz is a typical Muslim Society, truly self-conscious and self-evaluative. Her characters have a delicate human balance. They are neither totally evil nor

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Research Article

CLOTHING DISPOSAL BEHAVIOR AMONG WOMAN IN JAMMU

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ABSTRACT

With the growingpopulation and improvement of living standard, the consumption of textile has subsequently increased; the overconsumption of clothing has had a significant impact on environment as well as on society. Clothing consumption can be regarded as an aspect of sustainability issue, in which consumers feel responsible to contribute to sustainable consumption by disposing their used clothing in a right way. Hence, there is a need to understand how consumers can dispose their unwanted or used textile products. The present research was carried out with an aim to know the clothing disposal behavior of females residing in Jammu. The sample for the research was conducted among hundred women (fifty each from rural and urban areas) randomly selected from Jammu tehsil of Jammu district. The data was analyzed quantitatively and qualitatively. The present study results revealed that majority i.e. 57% of the women respondents both from urban and rural areas shopped twice or more than that in a month. The average money spend by respondents on clothing in both the group was Rs. 4000 to Rs. 6000/-. It was also found thatalmost half of the respondents would like to dispose their clothes sustainably by donating to charities/servants and by giving them to friends/relatives. Most of the respondents from rural areas preferredto use their unwanted clothes for reutilization by making some usable household products like bags, pillow covers and many more.

INTRODUCTION

Clothing and textile as a basic material has a great significance in human history. From the animal skin to the synthetic fiber, the development of textile reflects the improvement of technology and development of civilization, as well as culture. The apparel and textile industry is one of the most ancient and established industries. Also it is a major contributor to many national economies (Shakya and Swami, 2021). This industry is also is one of the most essential consumer goods industries. Although, it is considered as the second mostpolluting industry after petrochemical (Shakya and Swami, 2021& Krishnaraj, 2020). The rise in demand for cheaper and fast produced industry-made textile products also led to the rise of production to meet that demand of the consumers but they forgot something very important i.e. disposing capacity of these products and their impact to the environment which led to the adoption of wasteful behaviour both by the consumers as well as the producers (Tarai & Shailaja 2020). Hence, textile waste has become a major concern on both economic and environmental fronts. So, it is essential to convert the waste textile & clothing material into usable materials to reduce the waste which leads to landfill damage.

There has been a steep rise in fast fashion, the stylish, yet cheap characteristics of fast and short fashion life cycle has led to over consumption and contributed to the growth of unwanted clothing items (Yan *et al*, 2021 and Tarai & Shailaja, 2020). Hence, today's consumer live in a throwaway society where products are disposed of before they are broken or even worn, long before the end of its actual functional life (Cox et al, 2013). The majority of consumers perceive the lifetime of clothing to be shorter than ever before (Morley et al., 2006). According to Birtwistle and Moore (2006), a trend of 'throwaway' fashion attitudes is growing among consumers, especially young fashion leaders.

In the apparel and textiles industries, disposal is of great interest because the amount of textile waste produced annually is on the rise (Claudio, 2007). This waste is comprised of both pre-consumption and post-consumption textiles (Hawley, 2006). Pre- consumption textile waste includes byproduct materials that result from manufacturing practices in the textile industry. Post-consumption textile waste, which is the focus of

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Evaluation and development of healthy pancake premix from pseudocereals amaranth and buckwheat

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Abstract
The era of health conscious has influenced the food industry to introduced healthy foods. According to the demand of consumer's health, people now-a day's demand nutritious food with sufficient health benefits. The aim of this study was the development and standardization of healthy pancake premix. Healthy pancake premix was prepared comprising of ingredients buckwheat flour, amaranth flour, makhana flour, jaggery, milk powder, almond, baking powder. Healthy Pancake premix was packed in laminates and polypropylene. Pancake premix was analyzed for chemical parameters (moisture and crude fat) content for 21 days and sensory attributes during the storage period of 28 days. The moisture content was increased during storage period of 21 days whereas fat and ash content was decreased. Sensory evaluation was done by nine points hedonic scale method. However, sensory attributes were recorded throughout the storage interval of 28 days under ambient conditions. Thus it was found that among all the treatments, the Treatment T (30:18:10: BWF:AF:MF) packed in laminates was best in appearance, aroma, taste and texture among the other treatments.

Keywords: Premix, pancake, laminates, polypropylene, healthy, storage

Introduction

Ready-to-eat foods are those foods that do not require any additional cooking and generally are stored in refrigeration or at room temperature. Ready-to-eat foods provide the advantageous benefits of convenience, health and variety (Mukhawat and Varma, 2013) [16]. Premix usually refers to a substance which is mixed in an early stage of manufacturing and distribution process.

Pancakes could be easily prepared from the premix by adding required quantity of fat or butter and water to the premix. Pancakes made from different instant mixes are consumed in different parts of the world with different regional names and are considered to be very popular wheat-based breakfast food items. Studies have been made on conventional wheat pancakes extensively on the processing conditions for the improvement of texture and flavor (Yamamoto *et al.*, 2013) [?]. Cereals are a staple food in almost all parts of the world and play an important role in the human nutrition. Rice, maize and wheat are three most widely grown cereal species, but there are several other important cereals like millet, sorghum, oat and barley, as well as the pseudocereals amaranth, quinoa, and buckwheat (Bender and Schoenlechner, 2020) [?]. Recent years have witnessed that the pseudo cereals have attracted much interest because of their favorable characteristics (high dietary fiber, proteins, vitamins, minerals and essential amino acid content). Among the pseudocereals the most important are the buckwheat and amaranth with higher protein and mineral content than traditional cereals.

Buckwheat is a dicotyledonous plant, in the *Polygonaceae* family. *Fagopyrum esculentum* (common buckwheat) and *Fagopyrum tataricum* (tartary buckwheat) are the two main types of buckwheat species. Both are primarily grown in the temperate zones of the Northern hemisphere. Because of its similarity in use and chemical composition to cereals, buckwheat is often known a pseudo cereal (Singh *et al.*, 2014) [?]. Buckwheat seeds, flowers and tissues contain many nutraceutical compounds. It contains variety of dietary compounds, including proteins with essential compounds (which are deficient in staple foods) and high biological value phenolic compounds. The seed of buckwheat also contains phenols in the form of flavonoids and flavones, plant sterols, fagopyrins, thiamine binding proteins, allergenic proteins and their derivatives, which have the healing properties for human beings. Whole buckwheat contains total of 55% starch, 12% protein, 4% lipid, 2% soluble carbohydrates, 7% total

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Gloria Naylor: Black Ecstasy or Agony

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ABSTRACT
In view of the already published secondary criticism on Gloria Naylor as a novelist and her individual works, the present study incorporates all the major works of Naylor, analyses these in the perspective of *avowed* depictions of feminist stances about African-American women personages as portrayed in the novels of Black American feminist writers. The primary works of Naylor incorporated in the study are *The Women of Brewster Place* (1982), *Linden Hills* (1985), *Mama Day* (1988) and *Bailey's Cafe* (1992). An attempt has been made to analyse these individual works with an itinerant focus upon the central female characters in every novel, taking into consideration the rubrics of plot — narrative, characterization, theme and imagery. The basic approach employed while analyzing the individual work included in the study is largely sociological with special emphasis upon the *alazon-eiron* existential syndrome as it operates within the plot-matrix of the included novels.

I. INTRODUCTION TO NAYLOR'S INSPIRATIONAL JOURNEY

Gloria Naylor's mother wanted Gloria to seek quality education and provided her access to various libraries in New York City during her schooling period. While undergoing graduation, she also served as a missionary for Jehovah's Witnesses in Florida, North Carolina and New York. Naylor recognized her interest in literature, and went to Brooklyn College, to study, English where she published her first short story titled, "A Life on Beekman Place", in the journal *Essence* and later converted the story into her first full-fledged novel, *The Women of Brewster Place* in 1982. The novel was awarded the American Book Award for the best new novel in 1983. Naylor got her B.A. degree from Brooklyn College in, 1981 and her Masters in African-American studies, from Yale in the year 1983. The same year, she also received a National Endowment for the Arts fellowship. Besides practicing her writing skills, Naylor taught literature and even lectured at several American Universities including New York University, George Washington University, the University of Pennsylvania, Boston University, Cornwell University, and the University of Kent in Canterbury, England.

II. DESCRIPTION OF GLORIA NAYLOR AS A MULTI-FACETED PERSONALITY

2.1 A popular women centric novelist of Afro-American stock

Naylor infuses female bonding in all her novels. She is recognized for her moving stories of African-American women, particularly in *The Women of Brewster Place* (1982). Her lyrical prose and her skillful infusion of the mythical and the magical in her novels made Naylor quite realistically popular as a novelist of Afro-American stock. She portrays the varied lines of African-Americans, particularly deep insights about being a woman in a male-oriented society. Infusion of images from Dante's *Inferno* in *Linden Hills* (1985), those of Shakespeare's *The Tempest* in *Mama Day* (1988), and from Chaucer's *Canterbury Tales* in *Bailey's Cafe* (1992) can be interpreted as Naylor's creative expertise at transcreating influx of literary motifs from the works of great writers like Dante, Chaucer and Shakespeare, Naylor also draws on African-American literary and creative traditions in her novels. Novels like, *The Women of Brewster Place* (1982), *Linden Hills* (1985), *Mama Day* (1988), *Bailey's Cafe* (1992), successfully project the Afro-American fictional female as an individual, who metamorphoses her identity as an identity of womanhood, a womanhood which eventually becomes an inexhaustible repository of strength, assertion all well as inspiration.

2.2 An invariant of western philosophy of human values

Gloria Naylor disregarded the normal western philosophy as well as the white-dominated American hegemonistic appropriation of human values and culture. As an Afro-American woman

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Understanding COVID-19: A COMPREHENSSIVE REVIEW

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ABSTRACT: The 2019 novel coronavirus (2019-nCoV), commonly known as severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) or coronavirus disease 2019 (COVID-19), was first revealed in late 2019 in Wuhan city, Hubei province, China. It was subsequently spread globally and thereby declared as a pandemic by WHO in March 2020. The disease causes severe acute respiratory illness and is highly contagious due to the fast-onward transmission. As of the mid of November 2020, the disease has affected 220 countries with more than 16 million active cases and 1.3 million deaths worldwide. Males, pregnant women, the elderly, immunosuppressed patients, and those with underlying medical conditions are more vulnerable to the disease than the general healthy population. Unfortunately, no definite treatment is available. The aim of this review was to understand the mechanism of entry of virus inside human body and its effects on various organs.

Key Words: covid-19, life cycle, immune system

Introduction: Severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), the pathogen responsible for coronavirus disease 2019 (COVID-19), has caused morbidity and mortality at an unprecedented scale globally1 . Scientific and clinical evidence is evolving on the subacute and long-term effects of COVID-19, which can affect multiple organ systems2 . Early reports suggest residual effects of SARS-CoV-2 infection, such as fatigue, dyspnea, chest pain, cognitive disturbances, arthralgia and decline in quality of life3–5 . Cellular damage, a robust innate immune response with inflammatory cytokine production, and a pro-coagulant state induced by SARS-CoV-2 infection may contribute to these sequelae6–8 . Survivors of previous coronavirus infections, including the SARS epidemic of 2003 and the Middle East respiratory syndrome (MERS) outbreak of 2012, have demonstrated a similar constellation of persistent symptoms, reinforcing concern for clinically significant sequelae of COVID-19 (refs. 9–15). COVID-19 is an enclosed RNA virus that is distinctly present in people and animals. The virus belongs to the Nidovirales order that consists of families, namely, Roniviridae, Arteriviridae, and Coronaviridae [16,17]. At the same time, the Coronaviridae family is divided into two, which include Torovirinae and Coronavirinae. Further, the Coronavirinae subfamily is classified as into alpha-, beta-, gamma-, and delta- COVs [16]. These viruses have virus-related RNA genome that measures from 26 to 32 kilobases in dimension, and this makes it possible to isolate them from different animal species. Moreover,

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the coronaviruses can be seen under the electron microscope as it possesses a crown-like appearance. Ideally, the

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Utilization of conventional methods of malting and roasting for nutritional profile augmentation

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Abstract
The dried grains of both the cereals (wheat and barley) and legumes (soybean and chickpea) were initially processed by germinating at 30± 2 °C for 72 hours for cereals and 24 hours for legumes. The germinated grains were washed and kilned by drying in hot air oven at a temperature of 65± 5 °C. Cereals and legumes were processed by roasting in hot air oven at 120 °C for 10 min and then cooled. Malted and roasted cereal and legume grains were milled into flour and analysed. Malting and roasting induced beneficial changes in the cereal (wheat and barley) and legume (chickpea and soybean). The protein content increased from 11.96 to 12.34 percent in wheat, from 12.34 to 12.54 percent in barley, from 17.34 to 19.53 percent in chickpea and from 40.63 to 42.28 percent in soy bean. Crude fibre, and carbohydrates also increased after malting and roasting. However the moisture content decreased after malting and roasting.

Keywords: Malting, roasting, protein, cereal, legume

Introduction
Cereals are an important source of food for a large part of the world's population. About 50% of the total protein consumed by humans is supplied by cereals and wheat alone contributes one third of the total cereal protein production. Wheat (*Triticum aestivum*) is a good source of calories and other nutrients but its protein is of lower nutritional quality when compared to milk, soybean and pea as its protein is deficient in essential amino acids such as lysine and threonine (Ndife *et al*., 2011) [2].

Barley (*Hordeum vulgare*) is the world's fourth most important cereal and is an excellent source of dietary fiber, vitamins and minerals. It is a rich source of tocophenols and tocotrienols, which are known to reduce serum low-density lipoprotein cholesterol through their antioxidant action. Because of its excellent nutritional value barley has tremendous potential to be used in high energy functional foods. In western countries, barley is used in breakfast cereals, soups, bakery flour blends and baby foods (Gupta *et al*., 2010) [3].

Legumes have been known as "a poor man's meat". Soybean (*Glycine max*) is one of the most important oil and protein crops of the world. Soybean contains 30 to 45% protein. Its protein content is about two times of other pulses, four times of wheat, six times of rice grain, four times of egg, twelve times of milk and has been referred to as "the protein hope of the future" (Ndife *et al*., 2011) [2]. Moreover, isoflavones contained in soybeans are effective cancer-preventive agents and helps in the prevention of cardiovascular diseases. Nutritionally, soybean protein is an excellent complement to lysine limited cereal protein. Chickpea (*Cicer arietinum*) occupies first position among pulses representing 35% of total cultivated area of pulses and contributing 45% of total production in India. It is a rich source of carbohydrates, dietary fiber, vitamins and minerals. It contains 19.2% protein which is of best quality among the legumes. It has high protein digestibility and is rich in phosphorous, calcium and widely used in different countries as a protein source in preparation of different food products (Rababah *et al*., 2006) [4].

The technologies suitable for developing supplementary foods include roasting, germination, milling, baking, cooking, drying, fermentation, extrusion (Carrillo *et al*., 2007) [5]. Malting is the controlled germination followed by controlled drying of the kernels. Germination improves the nutritional quality of food products (Mansour, 1996) [6] whereas roasting improves the flavor, texture and nutritive value of grains and eliminates most of the anti-nutritional or toxic factors in legumes either partially or wholly (Mridula *et al*., 2010) [7].

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Effect of Blending Apple Juice on the Sensorial characteristics of Whey Beverage during Storage

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ABSTRACT: The goal of the current investigation is to utilize acid whey obtained after *channa/paneer* manufacturing to turn into products that have the potential to provide extra value to the users. The viability of mixing apple juice in whey at different ratios (apple juice 0-50%) and its effect on organoleptic characteristics were explored during refrigerated storage. The parameters measured were color appearance, flavour, texture (consistency), and overall acceptability. There is a significant impact ($p<0.05$) of the incorporation of apple juice on the sensorial quality of apple-whey beverages. The result revealed that the sensory panelist highly preferred the apple juice: whey ratio (50:50). The product sensory scores were satisfactory until 45 days, beyond that the product quality deteriorated significantly ($p<0.05$).

Keywords: Apple, whey colour and appearance, flavour, consistency, Overall acceptability.

INTRODUCTION

Chhana/paneer is the heat and acid-coagulated product (Arora *et al.*, 2019a; 2021) and whey is a greenish-yellow liquid produced as a by-product during their production. About 5 million tonnes of whey is generated in India, with *channa* and *paneer* whey accounting for roughly 80% of overall whey (Gupta, 2008), and the majority of it is discarded as waste. Whey consists of appreciable quantities of total milk solids, lactose, milk proteins, minerals, and vitamins (Horton, 1995). Proteins in whey are high in absorption capacity as well as it contains sulfur-containing amino acids for instance valine, leucine, and isoleucine, boosting tissue development and maintenance, muscle strength, and body makeup (Arora *et al.*, 2019b). Whey proteins are functionally suitable for beverage preparation because they have a fresh, neutral taste. In the production of whey beverages suitable quantities of fruit juices, minimally processed whey along with adequate levels of stabilizers and acidulants are combined together to formulate a quality product (Singh *et al.*, 2005).

Fruit juice beverages are thought to be easy carriers for transporting and delivering whey proteins into human meals. Apple fruit stands second as a fruit of choice consumed the world over (Drogoudi and Pantelidis 2011) and is a storehouse of many phenolic compounds essential for good health (Wolfe *et al.*, 2003).

Despite several bio-actives, apple contains insignificant proteins and is deficient in minerals like potassium and calcium (Lee, 2012). Several studies have been conducted to formulate whey-based fruit juice mixes with different ratios based on the sensory profile (Djuric *et al.*, 2004). The poor sensory profile of whey beverages is still challenging for consumer acceptance. Our study explores the level of apple juice that can be added to whey thereby a tastier healthier variant can be made. Also, apples are nutritionally rich and the juice made could have the potential to use as a blend for utilizing the nutritionally rich by-product of milk. Thus, utilizing apple and whey can be a novel idea. The commercialization and popularization of such drinks may yield economic benefits.

MATERIAL AND METHODS

Materials. Double-toned milk of the Amul brand was obtained from the local market. Apple juice of brand real active was brought from the local market. Apple blended whey beverage was packaged and stored in glass bottles with crown closures (200 mL). These were procured from the local market.

Methods. The double-toned milk was heated to 95°C and cooled down to 70°C. Thereafter citric acid @ 2.0 percent solution was added to the milk. After the formulation of the coagulum, the contents were kept undisturbed. Whey is strained through a neat and clean muslin cloth. The greenish-yellow clear whey is kept undisturbed for 2 min. The whey thus obtained is again heated (100°C) for 5 minutes so that the remaining protein curdles and, after settling, is decanted (Fig. 1). The whey thus obtained is then suitably blended with sugar-free apple juice in the concentrations T1-20%,

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Research Paper

Socio-Cultural Insight of Gujjar and Bakerwal in Jammu and Kashmir

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ABSTRACT
Gujjars and Bakerwals are a unique and significant ethnic group of Jammu and Kashmir. Gujjar and Bakerwal is the third largest community constituting 11.9 percent of the total population of the state (census 2011). It is believed that Gujjars migrated to Jammu and Kashmir from Gujarat (via Rajasthan) and the Hazara District of North Western Frontier Province. The present paper aims to study the social and cultural characteristics of tribal group Gujjars and Bakerwals. This paper is mainly based on secondary data sources as collection of primary data was difficult in COVID-19 pandemic. The various sources of secondary data was population census of India 2001 and 2011, Journals, Newspaper Articles, Books, Reports etc. Various studies and reports indicate that sociological status of Gujjars and Bakerwals in Jammu and Kashmir is not at all satisfactory but culturally they are stable. It was observed that transhumance (frequent seasonal migration) is impediment for the education of Gujjars and Bakerwals Community. Nomads are culturally very much depictable by dancing, religious rites and customs. The Gujjars and Bakerwals Community of Jammu and Kashmir speaks the Gujari also called Gojri, comes from the Rajasthan. It was found that though there is much influence of modernization and development on society, but the nomads have not changed and still follow the traditional customs and attires. The women folk of Gujjars are fond of silver jewellery. As far as festivals are concerned, Gujjars and Bakerwals have clear influence of both Hindu and Islam religions. Majority of the Community prefer early marriages. It is an interesting fact that majority of Gujjars and Bakerwals are vegetarian Maize, Milk and its products are their staple food. Their economic profile is poor than the general population of the region.
***KEYWORDS**: Jammu and Kashmir, Gujjars and Bakerwals, Social, Cultural.*

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I. INTRODUCTION

Jammu and Kashmir has twelve notified communities as the schedule tribes. Eight Communities, that is Balti, Beda, Bot, Brookpa, Changpa, Garra, Men and Purigpa among them were given this status in 1989 and Bakerwals, Gujjars, Gaddis and Sippis were notified as the scheduled tribes under the constitution scheduled tribes Amendment Act 1991. (Census, 2001).

Bakerwals and Gujjars are the third largest ethnic group after Kashmiri and Dogra inhabiting the Indian Union Territory of Jammu and Kashmir. According to 2011 Census, the Gujjars and Bakarwals constitute 11.9% of the state's population 1.5 million out of 12.5 million. (Census 2011)

Gujjars and Bakerwals are a unique significant ethnic group of Jammu and Kashmir. It is believed that Gujjars migrated to Jammu and Kashmir from Gujarat (via Rajasthan) and the Hazara District of North Western Frontier Province. Most probably in the 5th and 6th century A.D. at the occurrence of some serious droughts they moved out of Gujarat and crossing Rajasthan and Punjab entered the green pastures of the Swaliks and the Himalayas. The diffusion and spread of Gujjars in the state of Jammu and Kashmir are not known with certainty. When the Gujjars of Jammu and Kashmir are asked about their place of origin, they simply say that their forefathers had migrated from Gujarat and Rajasthan. The arrival of Gujjars in Jammu and Kashmir is attributed to the outbreak of devastating droughts and famines in Rajasthan, Gujarat and Kathiawad. There are archaeological evidences to prove that there was a spell of dryness in the 5th and 7th centuries in Rajasthan and Gujarat which led to the outmigration of these people, who along with their cattle entered the pastures of the Siwaliks and the Sub-Himalayas. (Tufail, 2014).

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Preparation And Standardization of Herbal Fruit Juice

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Abstract

Preparation And Standardization of Herbal Fruit Juice

Human nutrition science has moved from a focus in the prevention of nutrient deficiencies to an emphasis on health maintenance and reduce the risk of chronic diseases. Fruits have formed an essential dietary suppliments since early times, providing nutritionally valuable components. The most significant contribution that fruit makes to our diet is by the way of vitamins, being rich in both ascrobic acid, Beta carotene(precursor of vitamin A). Fruits have high content of water and contain various minerals like sodium, potassium, iron and other elements in small amount. On the other hand herbs have played an important role in man's life. Spices are termed with magical powers probably due to medical value. The Juice is prepared by blending pineapple juice with Amla juice, Aloe Vera juice, Honey, Lemon juice, Mint juice, Ginger juice and common salt. Mature and ripe fruit were selected subjected to washing, sorting and trimming followed by peeling, juice extraction and straining. Pineapple juice was taken addition of Aloe Vera, Amla, Lemon, Ginger and Mint juice was done. Then honey and common salt were added and mixing of the ingredients was done. Then straining of the blended juice was done with the help of muslin cloth to remove suspended particles present. Then bottling and capping of bottles was followed by pasteurization (65'C for 15minutes) Cocling was done, Bottles were sealed labelled and storage of juice done at 5 – 6'C

Keywords - Blending, Sorting, Extraction, Pasteurization.

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Challenges Faced by Students in Online Classes during Covid-19

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Abstract: The lockdown has compelled many educational institutions to cancel their classes, examinations etc. and to choose the online modes. In this regard, E-learning tools have played decisive role during this pandemic, helping educational institute to facilitate students learning. The use of suitable and relevant pedagogy for online education may depend on the expertise and exposure to information technology for both educators and the students. The present study assesses the challenges faced by students and its impact on their studies due to online classes during Covid-19. A total of 140 respondents were participated in survey that was pursuing their graduation. The research instrument used for survey was Google form and link was created and sends to the students by WhatsApp mode. The results reveal that the low connectivity issue was the one of the hurdle students were facing. Results also indicate that online learning has reduced the quality of education.

Keywords: Covid-19, online classes, challenges, Impact, Education

Introduction: The corona virus outbreak brought almost all aspects of life to a standstill. Stuck at home amid the nationwide shutdown, students all across the country were left with little to do. It was only in 2020 the WHO declared it as pandemic. It has claimed millions of lives across the world. More than 90% of the world student population was affected due to the pandemic during the initial phase of its outbreak due to the suspension of classes of school, institutions etc. (Pokhrel and Chettri, 2021). It has caused a serious and very deep rooted impact on the guidelines that were issued by the WHO which were ratified by the most of the countries across the world compelled the governments to shut down the institutions of mass gatherings (Tari and Amonkar, 2021). Since its outbreak in late December 2019, COVID-19 has caused confusion across the world and has impact every sector around the world and education has been hit hard. Students, schools, colleges and universities have been deeply impacted. It forced many great nations to enforce lockdown thereby bringing everything to an abrupt halt for a certain period of time. Indian government has also announced the lock-down and closure of educational institutions as a logical solution to enforce social distancing within the communities (Rawal,2021 and Pareek & Soni, 2020). Right from the big businesses to educational institutions this Pandemic has literally altered and devastated the traditional ways of carrying out

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REVERSE OSMOSIS (RO) FILTERED WATER: RANDOM SAMPLING, ANALYSIS AND CONCLUSION

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ABSTRACT

Reverse Osmosis (RO) is a membrane based process technology to purify water by separating the dissolved solids from stream resulting in permeate and reject stream for a wide range of application in domestic as well as industrial applications. It is seen from literature review that RO technology is used to remove dissolved solids, colour, organic contaminants, and nitrate from feed stream. RO-filtered water, samples were collected from different commercial points from Jammu, Samba district and Kathua district of Jammu Division of J & K (UT). In all these samples the mineral nutrients were either within limits or below limits it reflects that use of such type of filtered water is not providing proper nutrients to the populations and may be cause of health issue to the public at large.

INTRODUCTION

Minerals are essential for health and many important minerals like magnesium, calcium and potassium are found in tap water. Minerals contribute to strong teeth, bones, healthy skin and hair. They are also very important for the growth and development of the body. When pure water in the form of rainfall lands on the soil, it passes through the earth and gets mineralized with important minerals like calcium, potassium and sodium. However, while these are minerals that are good for health, the water could also get contaminated with substances that are toxic. To remove traces of such harmful chemicals, biodegradable waste and bacteria, we use water purifiers. While water purifiers ensure that we drink only pure water, most RO water purifiers also remove the essential minerals from the water. WHO has been updating quality parameters for drinking water and setting guidelines for the same. Maximum acceptable concentrations of inorganic and organic substances and microorganisms have been established internationally and in many countries to assure the safety of drinking water. WHO guidelines on various parameters for drinking water quality are laid down in standard references.[1–4] The Indian standards of drinking water have been laid down as per IS 10500:1991, Ed 2.1 published by Bureau of Indian Standards.[5] For health calcium and magnesium are both essential elements. Although drinking water is not the major source of our calcium and magnesium intake, the health significance of supplemental intake of these elements from drinking water may outweigh its nutritional contribution expressed as the proportion of the total daily intake of these elements. Even in industrialized countries, diet that is not deficient in terms of the quantity of calcium and magnesium may not be able to fully compensate for the absence of calcium and in particular, magnesium in drinking water.[6] Demineralized soft water, when used for cooking is known to cause substantial losses of all essential elements from food (vegetables, meat, cereals). Such losses may reach up to 60% for magnesium and calcium or even more for some other microelements (e.g., copper 66%, manganese 70%, cobalt 86%). In contrast, when hard water is used for cooking, the loss of these elements is much lower, and in some cases, even higher calcium content was reported in food as a result of cooking.[6–9] Since most nutrients are ingested with food, the use of low-mineral water for

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Identification of species of the genus *Acer* L. using vegetation indices calculated from the hyperspectral images of leaves

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ABSTRACT

Selection of the most suitable spectral vegetation indices which are applicable to the remote sensing of the forest species composition and status, is an important task aimed at the evaluation of the large-scale plant communities. There are 80 vegetation indices have been collected in the present work using the hyperspectral data, including that for the *Acer platanoides* L., *A. saccharinum* L. and *A. pseudoplatanus* L. The obtained data showed that 40 vegetation indices were significantly differed between species in their values simultaneously (all over the experiment) in all the following pairs: *A. saccharinum* —— *A. platanoides*, *A. saccharinum* —— *A. pseudoplatanus* and *A. platanoides* —— *A. pseudoplatanus*. *A. platanoides* —— *A. pseudoplatanus*: Boochs2, MCARI2, TCARI2, Vogelmann2 and Vogelmann4; *A. platanoides* —— *A. saccharinum*: Carter2, Carter3, Carter4, Carter5, CI, CI2, CRI3, CRI4, Datt, Datt2, Datt3, Datt5, DDn, DWSI4, EGFN, EGFR, EVI, GI, GMI1, GMI2, Green NDVI, Maccioni, MCARI2, mSR2, MTCI, NDVI2, NDVI3, OSAVI2, PARS, PSSR, REP_Li, SR1, SR2, SR3, SR4, SR8, Vogelmann2 and Vogelmann4; *A. pseudoplatanus* —— *A. saccharinum*: Carter3, Carter5, CRI3, Datt5, Datt6, DWSI4, EGFN, EGFR, GI, GMI1, Green NDVI, NDVI3, PARS, SR3, SR4, SR5, SR8 and TGI. The selected list of the vegetation indices may be recommended for the identification of the maple species using the method of the remote hyperspectral sensing.

1. Introduction

Vegetation cover is a key component for understanding the terrestrial ecosystems (Houborg et al., 2015). Remote hyperspectral sensing provides an powerful tool in researches of the vegetation patterns, including that related to the vegetation types, changes in growth characteristics, physiology, and morphology (Xue and Su, 2017). It is an art combined with science and information technology that helps monitor and manage crop health, soil architecture, weather forecast, temperature, humidity, etc, in real-time (Singh et

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Existential bonding or fracture: A comprehensive review of the novel The Women of Brewster Place by Gloria Naylor

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Date of Submission: 02-04-2022 Date of Acceptance: 16-04-2022

ABSTRACT:
The Women of Brewster Place (1982) is the first novel Gloria Naylor wrote and this work made her a celebrity overnight among the African-American women writers in the United States. The revisioning of the African-American female self finds a powerful and an innovate representation in, *The Women of Brewster Place*. Brewster Place, becomes, a rallying point for seven Black women characters, who are defined as, "hard-edged, soft-centred, brutally demanding and easily pleased." These women "came together, prepositioned, bargained, and slowly worked out the consumation of their respective desires"

I. INTRODUCTION:

Brewster Place, as the abode of mostly coloured people also functions, as a major business district. As, a residential locality, "Brewster Place had no less to offer the second generation, of children – these, of its middle years – but it did what it could for them". Women living at Brewster Place, are fiercely aware humans, determined, self-willed with well-defined existential objectives, objectives which, also form the sonum-bonum, of their lives and living. This assembly of seven coloured females living, at Brewster Place target male-hegemony, racial domination by whites and above all socio-cultural problematics in their own aggressive style.

II. DETAILED REVIEW OF THE NOVEL THROUGH THE SEVEN WOMEN CHARACTERS

i. Mattie Michael

Among the Black women it's Mattie Michael who comes to Brewster Place followed by Etta Mae Johnson, Kiswana Brown, Cora Lee, Ciel Turner and a group of two women, Lorraine and Theresa. Mattie Michael has her own reflections on Brewster Place as a living place. She's as dark as, "rich, double-cocoa" a lady who defied her over protective father to take a man because the man was for her "Pure temptation, almost a force of nature – a Pan.

Mattie Michael really provides the bonding essence, the cohesive power for the other women who like her, have also suffered as *eironic* individuals, at the hands of patriarchal social and sexual tyranny. Mattie attains almost a mythic stature in the novel because as a work of fiction, *The Women of Brewster Place* cannot be categorised as a realistic fiction, as the thematic role-playing matrix is purely mythic. Though, nothing supernatural happens in the novel, still the narrative about each of these women personages, who assemble at Brewster Place is earthy downright practical and Mattie in particular seems constantly on the brink of, "breaking out into magical powers" considered in the totality of the plot and the narrative, *The Women of Brewster Place* has two climaxes: one related to healing and rebirth and the other one implying destruction. Thus, the novel symbolizes both renewal and reaffirmation as well as apocalyptic annihilation. In the beginning of the novel, Mattie acts as the personage, of renewal, when she infuses new life into Ciel Turner who is dying of grief. In the second part, we again witness the mythic aspect of the narrative when Lorraine rejected by the others is gang-raped a kind of, "a blood sacrifice brutally proving the sisterhood of all women." Thus, while giving the narratives about these women at Brewster Place, Gloria Naylor at the risk of appearing sentimental and

REVISITING LITERARY, MYTHOLOGICAL AND FOLKLORISTIC PERSPECTIVE IN FITZGERALD'S THE GREAT GATSBY AND THE LAST TYCOON

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Abstract

In American literature, the relationship between 'iterature, folklore, mythical patterns and archetypa' figures is complex. Writers concerned with creating conscious work of art like Mark Twain, Melville, Steinbeck, Hemingway and FitzGerald used folklore and myths functionally and not merely as providing transcripts from life .The charm for all these writers was naivete' of their conviction of success in the stories and fables, which often began in childhood. They also believed in the gospel of prosperity, which assured that their hardwork will be rewarded. This belief in wonderful future eventualy culminated in the genesis of American Dream .The Adamic myth propelled the American Dream to great heights, relating itself directly to a desire for spiritual and material improvement. Such a tendency became more pronounced and writers found themselves torn between mutually exclusive cultural imperatives. The paper adopts FitzGerald's notion of myth, orality and folklore as a way to interrogate the seemingly nostalgic strain of American modernistic fiction produced in the early decades of the 20th century. The first part argues, that how he reaches comparable insights into the ideological dimensions of the struggle to rehabilitate oral narrative practices. The second part take these insights as the point of departure for an examination of FitzGerald's novels, The Great Gatsby and The Last Tycoon as an affiliated attempt to create an attempt to recreate or refashion the fairy tale as compensatory response to the burdens of every day existence in urban- industrial modernity. This paper generates a perspective that parallels FitzGerald's brief speculations on the folkloric and mythological genre.

Key words: *myth, orality, folklore, ideological dimensions.*

In American literature, the relationship between literature, folklore, mythical patterns and archetypal figures is subtle and complex. What was initially borrowed from European tradition gradually grew into a literary tradition and folk tradition that had a distinctive cultural identity. 'Folklore and archetypal myths in American literature were used in two ways: passively as a transcript or actively and functionally. Writers concerned with creating conscious works of art, like Mark Twain, Melville, Steinbeck, Hemingway and FitzGerald, used folklore and myths functionally and not merely as providing transcripts from life. The charm for all these writers was the naïveté of their conviction of success in the stories and fables, which often began in childhood. They also believed in the gospel of prosperity, which assured that their hardwork will be rewarded. This belief in wonderful future eventually culminated in the genesis of American Dream. America came to be looked upon as a secular garden of Eden with the image of the American Adam as the central driving, motivating and intoxicating image. The Adamic myth propelled the American Dream to great heights, relating itself directly to a desire for spiritual and material improvement. In Emerson, Thoreau and Whitman, the American Dream was an ideal vision for individual and national transcendence. During the crucial metamorphosis from the imitative to the optative phase of the American Literary thinking and expression, the concept of the American came to occupy the centre-stage. Innocence and tragedy and transcendentalist optimism, all these cohered conceptually to inspire an obsessive proclivity toward recapturing the original state. But the burgeoning of the American economy and individual wealth propelled a fairy-tale view of life, with the Horatio Alger myth, of a rags to riches boom, the rich girl as the dream girl and ultimate success turned the dream into a materialistic vision for selfish ends. A running feud between materialism and idealism or between reality and fables became a chronic paradox for every American individual. The American writer with a pronounced sociological bias found himself torn between mutually exclusive cultural imperatives.Repeatedly,

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WOMEN WRITING, SCIENCE FICTION AND MEANING OF EXISTENCE: IN MANJULA PADMANABHAN'S HARVEST

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ABSTRACT

Harvest brilliantly allegorizes the relationship between the First and Third worlds, literalizing the fundamental practice of globalization as its central situation. Harvest is a darkly comic and unsettling tale of globalism and organ harvesting. It is fiction, science fiction, examination of relations between developing and developed countries. In the play, Om has sold his body through the aptly named Inter-planta services company to an American receiver. Padmanabhan goes to the extreme of the unholy relations between the third and the first world where the basic commodities of exchange are body organs. She has exposed the macabre that may likely befall the developing world if critical attention is not given to the phenomenon of globalization. Padmanabhan chooses to concentrate on the challenging coherence of the human body as a figure through which culture is processed and oriented.

Key Words Organ Selling, Globalization, Violence, Abuse of human body, Uncontrolled trafficking, Brutal reality

Science Fiction is a unique literature, Science Fiction is the first literature that says " Tomorrow is going to be different than yesterday , it's going to be a lot different".

- David Gerrold

The play takes us to the tensed apartment of a poor family in Mumbai. It deals with stories of Om Prakash - the protagonist of the play and his family members. The entire family goes through a serious economic problem when Om is dismissed from his job. In a small one room apartment, the whole family resides including Om, his wife Jaya,Om's old mother and his younger brother, Jeetu. The whole family was surrounded by conflict and mess. ManjulaPadmanbhan draws attention towards the prevailing trend of organ selling in India by representing this poor family whose members take recourse to organ selling to survive and overcome poverty.

The word 'Harvest' means the process of collecting or gathering crops. In this context, the title Harvest seems to be suitable as the play deals with the issue of buying and gathering human organs. The members of Om's family fall victim of this flesh market in India which is mostly controlled by the West. Joblessness, desperation are the defining natural sentiment. As Om has become jobless, he decides to sell his organs to a company called Inter-Planta in hopes of reversing his financial status. The family portrait is an archetypal picture of dissolution and decay. It is into this world of disorder that Inter-Planta services brings relief when Om signs up to be an organ donor for an American woman named Tanni because he is jobless in Mumbai. As the family's life becomes more comfortable, their relationships become more strained than they ever were in their poverty and eventually the whole family is at risk of losing not only body parts but their souls and identities as well.

The title *Harvest* relates to human organs which are taken from people in the Third World within a fully institutionalized trade with body parts. The scientific technology has advanced far enough to enable the prolongation of human life body - transplants. Om, a young unemployed Indian man suffering from poorness and unemployment, sells the rights to his body parts to a buyer from the

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THE BEGINNING OF PROTOSCIENCE FICTION: AN ANALYSIS OF THE BLAZING WORLD BY MARGARET CAVENDISH

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ABSTRACT

The Blazing World as a literary work, defies all the literary traditions of the seventeenth century. Cavendish created this Utopian fiction and moved beyond the boundaries of reason and compartmentalised standards. Through *The Blazing World*, she shows that women can be as creative and capable as male writers and calls for abandoning the masculine restrictions. As Utopian and science fiction, the novel can be seen as a feminist festo. It is written for the female readers and has women as central characters, the Empress and the Duchess, discussing topics like Science, governance and philosophy in a fantastical setting.

The Description of the New World, called *The Blazing World* is often considered a forerunner to the genres of both science fiction and utopian novels. It is satirical in tone and can also be seen as a treatise on nature philosophy. The work is divided into two parts and delineated different genres like 'romantical', 'philosophical', and 'fancy' or 'fantastical' Science fiction was used by Margaret Cavendish to highlight the negative-both present and potential aspect of her time. *The Blazing World* binds to Cavendish's philosophical reflections, highlighting how her criticism of the mechanistic approach and the experimental scientific method has important political and epistemological consequences, even for the contemporary feminist debate on science and knowledge.

KEYWORDS: Science Fiction, Blazing World, Philosophical Reflections, ProtoScience Feminism, Power and Science.

It is somewhat fascinating to note that woman writer Margret Cavendish, the Duchess of NewCastle, is the first prolific writer in Science Fiction who explored feminine power in the 17th century. She was an English philosopher, poet, scientist, fiction writer and playwright. Being related to royalists, she spent some of the English Civil War in France. She wrote in her own name in a period when most women writers remained anonymous. She was born in 1623 to an aristocratic, royal family in colchester, Essex. She was privately educated in childhood, but appears to have read widely on a range of topics more usually reserved for male writers. She was a natural philosopher, at a time when women were not formally educated. As a young woman Cavendish travelled with Charles I's wife, Henrietta Cavendish, Marquess of New Castle upon Tyne, who was more than 30 years. Although denying he had secretly authored her works, as some detractors insisted, Cavendish openly acknowledged her husband as an important influence apon her work.

The Blazing World as a literary work, defies all the literary traditions of the seventeenth century. Cavendish created this Utopian Fiction and moved beyond the boundaries of reason and compartmentalised standards. Through *The Blazing World*, she shows that women can be as creative and capable as male writers and calls for abandoning the masculine restrictions. As Utopian and science fiction, the novel can be seen as a feminist festo. It is written for the female readers and has women as central characters, the Empress and the Duchess, discussing topics like science, governance, and philosophy in a fantastical setting. The character of Empress can be seen as a symbol of the 'power' that Cavendish wished the women of then English society possessed.

The Description of the New World, called *The Blazing World* is often considered a forerunner to the genres of both Science Fiction and Utopian Fiction. It is satirical in tone and can also be seen as a treatise on natural philosophy. The work is divided into two parts and delineates different genres, like 'romantical', 'philosophical', and 'fancy' or 'fantastical' Science Fiction was used by Margaret Cavendish to highlight both present and potential aspects of her time. She uses fiction to call into

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IMPACT OF PRISON THEATRE: EXPLORING THE AESTHETICS OF LIBERATION

DR. SHAZIA [illegible]

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ABSTRACT

Theatre is a millenary art that has stably maintained its ... an indispensable elements over the years. Researchers say that theatre is today a well-established activity in many prisons in the whole world. Theatre in Prison has to be intended first of all like an artistic activity that enters deeply in persons affecting time, space, human and ... [illegible] so as to reverse and to align them to its own needs. It means theatre in prison must not be a tool managed and exploited by prison itself but led by an independent entity whose human resources are professionals of the sector. Theatre in Prison must involve and create strong commitment in prisoners by exploiting and experimenting new and different languages, developing workshops, training and the production of plays, performances and any other relevant artistic or cultural result, promoting proactive attitude. It does not happen ... [illegible] rehabilitating and socializing effects. It requires a huge commitment of each single person as well of the team and leads to ... [illegible] evolution of the penal institution. Continuity and durability are two fundamental features for theatre in prison. Moreover Continuity and durability take away theatre in prison from the idea it is pastime or recreational. In this way, it really assumes the shape of training for arts theatre jobs and professionalization. Infact, the most successful experiences of theatre in prison are those which go beyond the occasional trait and turn into training and working projects, able to catalyze attention and to network with internal operators, local institutions, schools, universities and other local, national and international objects

Keywords: Prison Theatre, Aesthetics, Theatre Studies, Liberatory Pedagogy, Theatrical Practice and Transformation.

According to Interdisciplinary research, there is a strong linkage between the development of the right brain and arts education and practice, which in turn leads to higher order thinking skills and greater emotional self-regulation. Further, there is compelling creativity, intellectual flexibility, patience, self-discipline and the ability to work with others. Prison arts program evaluations show that beyond encouraging and facilitating creativity, communication, and reflection, art teaches inmates how to work with a focused discipline finding the right word when writing poetry or prose, capturing an image when drawing or

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CYBER LITERATURE AND CYBERFEMINISM : FIGURING SCIENCE, NATURE AND TECHNOLOGY

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ABSTRACT

In Cyberspace and Electronic Literature the reader and writer become posthuman. Machines become writers and writers become machines. The term posthuman is regarded as the part of intelligence which lies in the human brain, part in intelligent machines and part in the interface between them. Electronic Literature is the one that can only be read on a computer while Cyber Literature is generated by computers. Cyber Literature is a literary proposal where the machine can be considered co-author of the text. In generative writing the human writer disappears. It is the machine which creates writing without human intervention. The traditional printed text is static while the digital is dynamic.

Our daily use of computers is influencing us to become cyborgs. We depend on Cyberspace allowing the individual to lose gender or to acquire different identities at the same time. When the internet user adopts different roles, body or gender, he/she may acquire unconsciously transgressive identities. Cyberspace has been seen as a place where nobody is judged in any respect by one's body, but perhaps by an imagined body. Gender, race and class can disappear in the non-physical relationship online. In online games, social networks and chats, people change their genders and play the role of a different gender from the one they own.

On the other hand, it is also through the cyber platform that other forms of digital violence against women all created and encouraged. This not only uses the internet to disseminate feminist texts and themes, but also as a political tool with unique features for the mobilization of feminist causes and the promotion of gender equity in the cyberspace. This also shows some aspects of the double face of cyberism for women - risks and resistances. So it is not easy to identify the limits between science, nature and technology. The main focus of this paper is to discuss the major aspects of science, nature and technology in the cyber world.

Keywords : Cyberspace, Cyber Feminism, Social Network, Multi-literacies, Cyber Culture, Cyber Violence, Cyber World, Science and Technology

In Cyberspace and Electronic Literature the reader and writer become posthuman. Machines become writers and writers become machines. The term posthuman is regarded as the part of intelligence which lies in the human brain, part in intelligent machines and part in the interface between them. Electronic Literature is the one that can only be read on a computer while Cyber Literature is generated by computers. Cyber Literature is a literary proposal where the machine can be considered co-author of the text. In generative writing the human writer disappears. It is the machine which creates writing without human intervention. The traditional printed text is static while the digital is dynamic.

Our daily use of computers is influencing us to become cyborgs. We depend on the internet to manage practically all our social and commercial transaction emails, booking on-line, searching for information, using GPS with our mobile phones, teaching-learning on-line, interacting on social networks etc. When technology is added to the human body in a real physical extension to repair a deficiency in the use of contact lenses, glasses, false teeth or to change the physical appearance i.e., highlights on the hair, wearing heels or beauty-surgery. Humans have always used tools to satisfy their needs and desires. Primitive men and women worked with sticks, stones, spices and wore piercings. Present day humans use cars, computers, cellphones and other technological body extensions such as prosthesis.

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FOODS OF HIMACHAL PRADESH : A FEAST OF MIND AND SOUL

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ABSTRACT

Himachal Pradesh is a northern mountainous state of India. It is the land of Kailash Mountain and Lord Shiva and is famous for its natural beauty, rich culture, traditions, dress, art and language. The rich culture and traditions of Himachal Pradesh are reflected in its cuisine that encompasses a wide range of delicacies enriched with a surfeit of aroma and taste. The food is different in terms of taste, variety, and style of cooking, be it north, south, central east or west India. Each part has its own distinct quality, yet woven together with the common thread of spices and mouth-watering flavours.

Himachali Dham is a traditional festive feast prepared during weddings, festivals and religious gatherings. It comprises of all local dishes and a fair representation of traditional food. Himachali Dham can be called the traditional food of Himachal Pradesh. It comprises of Madra, Dal, Kadhi, Khatta and Meetha. Instead of using cooking gas, Dham is usually cooked on firewood. The process of cooking begins one night before the actual feast, and is usually served for lunch. Dham is prepared by Bhoths who are Brahmin chefs and have traditionally been cooking Dhams for generations. Most of the utensils used for cooking are made from copper and brass.

Dham is made in huge pot-shaped containers known as 'Charoti' or 'Baral'. Pattals, leaf plates, are traditionally used to serve Dham, as people sit on the floor and enjoy it in community gatherings. There is no use of garlic and onion in dishes of Dham. Himachali Dham can be said to be the birthplace of Dham with regards to the history. The cuisine is developed keeping in mind not only the geographical and climatic conditions of the state but also surrounding the traditional methods under natural conditions mostly from the staple ingredients.

Keywords: Dham, Beanfeast, Traditions, Taste and Delicacies.

Every food discourse or representation has a relationship to a specific body politic. That is, food is a way of talking about the body, of constructing both ideal and abject social bodies. In literature this happens through the representation of consumption in literary texts as well as through implicit assumptions about the body and what feels it. Studying food thus becomes one mode of learning medical history, particularly when studying those periods and cultures, like antebellum America or ancient Greece, in which food and medicine are often seen as the same thing. Studying food in literature is one mode of studying material history. Thus it is particularly useful to pay attention to the food objects that are associated with particular social locations. In studying what kinds of food appear in literature one can trace the economic and cultural circuits that are in play during the moment of cultural production.

Chamba Dham is one of the well known dishes in Chamba which is very traditional and delicious. It is a complete food and gives a delicious taste and is full of nutrients. It comprises the following dishes.

Ma Ira Madra of Chamba is famous for being a real treat for the taste buds. It is one of the famous foods and originally belongs to Chamba is famous food and originally belongs to chamba. This delicious dish is prepared by soaked red-kidney beans, ghee, yogurt, adding all other spices like cloves, cinnamon, cardamom, cumin, coriander powder and turmeric powder to increase the taste of the dish to the next level. Madra is also known for the cultural food of Himachal Pradesh and almost all the restaurants serve dishes by heart.

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THE CONSEQUENCES OF GLOBALIZATION: LITERATURE AND LANGUAGE

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ABSTRACT

Globalization has become one of the most debated topics in the modern era. Global Literature here has the ability to transform and sow the seeds of courage and build knowledge. Indian English Literature is also nevertheless a gala of the transcended modern India reflecting the various shades of globalization. The term 'Globalization' in itself is self-explanatory. It is an international platform for maintaining consistency in the living mode of the people all over the world. Globalization is the result of the interchange of worldly views, opinions and the various aspects of culture everywhere around the world.

Globalization has both positive and negative impacts throughout the globe. The effect of Globalization can be seen in the literature of the world too. The Third World perception of globalization is that of a harmful process that maximises inequality within and among states. Being Global means a change in one's view of looking at life, values, culture and language. This aspect has been captured wonderfully by writers all over the world. The aim of the paper is to present the effects of globalization on Literature.

Key Words: Globalization, Literature, Values, Culture and Language.

The Consequences of Globalization: Literature and Language

Globalization leaves no clone unturned. Indian Literature is renowned throughout the world for its range of fiction reflecting the incredible diversity of India itself and engaging with the forces of globalization and modernity which are reshaping the country. The visible impact of globalization can be found in metropolises across the world which have suddenly become cosmopolitan and metro-cultural. Being global means change in one's view of looking at life, values, culture and language. In India, there is a great deal of awareness that globalization is a mixed, contradictory and heterogeneous phenomenon.

The impact of western cultures through the English language on Indian life is inevitable. Infact in the era of globalization, no society can resist the influence of alien cultures. Indian culture has also influenced world culture. In other words, there is the rise of global culture which has blurred the boundaries of traditional culture. The various means of telecommunication, social media, and most importantly the Internet has a big role to play in the spread of globalization. On one hand, many researchers scrutinize and explore works of literature to verify the realities of globalization through literary forms. On the other hand, literature and literary studies are developed into a platform for supporting, evoking and interpreting different social, political, literary and cultural concepts within the globalization realm. Indian Diaspora acts as a bridge between two cultures, countries and strengthens their bilateral ties. India and its Diaspora can enrich each other in a spirit of mutual interest. The distinct Indian flavour was back in the English Language and thus the works of the modern Indian writers reflected the Indianized English. Be it Shashi Tharoor, Amitav Ghosh, Salman Rushdie the deconstruction of the British of English was quite evident.

Cyberspace that connects the world contributes to the obliteration of national and geographic boundaries and fosters the new global culture and literature. Globalization is defined by how it is spoken or recounted. The importance of material, technical and social processes is directly proportional to the perspective taken on globalization. Globalization and literature are not maintained apart just because the latter may be able to reflect something of the former, but are reached together each that they combine in a conjoined field that processes globalization in Literature. The globalized world experiences a blend of freshness and dirt which stimulates an individual to enrich and elevate

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THE WIDOWS IN SUBJUGATION: VICTIMS & VICTORS IN BAPSI SIDHWA'S NOVEL *WATER*

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ABSTRACT

Bapsi Sidhwa is one of the widely known Pakistani American novelist, writing from a post-colonial consciousness. The images of the changing India, politically and socially, [illegible] Sidhwa's mind. The novel *Water* is about the unprojected sufferings of women in India with child marriage before the independence. Through three women characters namely, Chuhiya, Kalyani and Shakuntala, the novelist portrays the subjugation of women in pre- independence era. Feminist Literature always deals with the psychological, emotional and physical problems faced by women around the world. Women took a medium to show their real image in a society wherein they are more or less marginalized in terms of gender and sex. Transforming a novel into a film is called 'adaptation' whereas writing a novel based on a film is called 'novelization'. This novel is one such example. The book certainly enhances the visual appeal of the film. Both Deepa Mehta and Sidhwa have done a commendable job in creating a film and a book. This paper contains a wide range of [illegible] in the film *Water* as a visual text and the novel *Water* a literary text. Moreover, the paper will also highlight how marriage becomes a turning point in the life of the protagonist, the torture and misery at the widow's ashram and the ideological conflicts of our Indian society.

Key words: Feminism, Marriage, Widowhood, Adaptation, Cinematic tools, Punishment, Ashram and Freedom.

Water was set in 1938, when India was still under the colonial rule of the British, and when the marriage of children to older men was commonplace. Chuhiya is an eight year old girl who has just lost her husband. She is deposited in the Ashram for Hindu widows to spend the rest of her life in renunciation. She befriends Kalyani who is forced into prostitution to support the Ashram. Shakuntala, one of the widows, and Narayan, a young and charming upper-class follower of Mahatma Gandhi and of Gandhism. *Water* is a dark introspect into the tales of rural Indian widows in the 1940's and covers controversial and subjects such as child marriage, misogyny and ostracism.

In keeping with traditions of widowhood, she is dressed in a white saree, her head is shaved and left in an Ashram, to spend the rest of her life in renunciation. There are fourteen women who live in dilapidated house, but there to expiate bad karma as well as to relieve their families of the financial and emotional burdens the financial and emotional burdens of caring widows. The Ashram is ruled by Madhumati, a porous lady in her 70's. Her only friend is the pimp, Gulatri helps Madhumati prostitute kalyam, a beautiful young widow, by ferrying her across the Ganges to customers. Kalyani was forced into prostitution as a teenager to support the ashram. Chuhiya is convinced that her stay is a temporary one and that her story is a temporary one and that her mother will come to take her away but quickly adapts to her new life. She befriends Kalyani, and witnesses Kalyani's budding romance with Narayan. Despite her initial reluctance, Kalyani eventually buys into his dream of marriage and new life in calcutta. She agrees to go away with him.

Shakuntala is perhaps the most enigmatic of the women. Attractive, witty and sharp, she is also one of the few widows who can read. She excludes enough anger that even Madhumati leaves her alone. Shakuntala is caught between being a God-fearing, devout Hindu, and her hatred of being a widow. She seeks the counsel of Sadanbenda, a priest, who makes her aware of her unjust and unholy situation. She becomes attached to Chuhiya upon her arrival at the Ashram. Water, the fifth novel of Bapsi Sidhwa has been filmed by Deepa Mehta, an Indo-canadian filmmaker, evoking strong reactions. It constitutes the third part

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SELF PORTRAIT IN FEMINISM: WOMANISM & CULTURAL REQUISITIES IN ASRA NOMANI'S *STANDING ALONE IN MECCA*

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ABSTRACT

Standing Alone in Mecca is an autobiographical account by a young American woman. She talks about her childhood and early career as a journalist, her struggle to find her identity as a person, and particularly as a woman growing up in the US within the cultural constraints of an Indian Muslim family. She also explores the writings and traditions of other religions and then makes the pilgrimage to Mecca with her family, to understand her own tradition more deeply. Asra Nomani combines her own reflections on her life and experience with accounts of the Islamic traditions and people historically associated with Mecca and pilgrimage rituals, particularly the women.

This novel offers an alternative view to the stereotypical depiction of Muslim women. This paper traces and explores thematic concerns particularly Nomani's physical and spiritual journey which transcend both geographical and imaginary borders and spaces. Their transformations are reflected in her stages of conflict and spiritual awakening. They are also revealed through the depiction of Nomani's relationships with God and others. Thus, through careful study of *Standing Alone in Mecca* one can challenge much accepted assumptions of a monolithic Islam as typically static and traditional.

Keywords: Identity, Religion, Traditions, Pilgrimage in Mecca, Muslim women, Superstitions, Taboos, Gender and Justice.

Standing Alone in Mecca is an autobiographical account by a young American woman. She talksabout her childhood and early career as a person, and particularly as a woman growing up in the US within the cultural constraints of an Indian Muslim family. As part of that, she explores the writings and traditions of other religions and then makes the pilgrimage to Mecca with her family. As part of that, she explores the writings and traditions of other religions and then makes the pilgrimage to Mecca with her family to understand her own tradition deeply. She describes her personal journey of finding her voice as a Muslim woman, an author and a single mother back in America and then the novel encludes with the last two sections i.e. asserting the lessons of the Pilgrimage and Harvesting the Fruits of the Pilgrimage. This recounts her efforts to be allowed to pray as a woman in the main section of the mosque with the men. This is the culmination of her experiences during the pilgrimage in Mecca and her appropriation of her own voice in public forums.

However, despite the conventions of pilgrimage in Mecca, Nomani encounters aggressive opposition when she tries to do the same in America. At the same time, she encounters support for herself, and her position from a number of Muslim women and men. This part of the novel helps us to understand the cost of seeking reform within the Muslim community and the opposition faced by those who seek to do so. As an autobiographical account, it is valuable in taking the reader into an insider view of lived experience of making the pilgrimage, and also of challenging a conservative diaspora position of practised Islam. It shows the tensions and identity struggles of Muslim children growing up in the west, between two worlds, two sets of expectations and rules of behaviour. This also includes relationships with their parents, even ones as accepting and supportive as Nomani's parents, in their roles negotiating faith, life and work across two cultures. The novel demonstrates the diversity of positions, it is possible to occupy on practices of life and faith with the Muslim community.

An important part of Asra's identity was what Turner would call as her self-categorization as a modern Muslim woman, who was aware of her rights and would fight to assert them. She was a woman who tried to live life on her own terms. Though she new of her parents stand on sexual matters, she experimented for herself. When she was abandoned by the father of her child, she still decided to go ahead with the pregnancy. All this was possible because she was a strong woman, who not only

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Spatial Distribution and Floristic Composition of Overstorey Vegetation in *Zanthoxylum armatum* DC. inhabited sites of Union Territory of Jammu & Kashmir, India

The spatial distribution and floristic composition of an area is the outcome of various environmental factors, and needed to be studied for assessing the macro-ecological biodiversity patterns and framing a strategy for biological conservation. The present study was conducted in three Zanthoxylum armatum DC. inhabited sites located in Kathua (Bhaddu and Sukrala) and Udhampur (Dhandal) districts of Union Territory (UT) of Jammu and Kashmir (J&K) with the aim of studying the distribution, ecological status, composition, and diversity of overstorey vegetation, especially Zanthoxylum armatum, and to define the soil attribute/s responsible for these characteristics of vegetation. The results of the study show that aggregate distribution (68.4 - 84.2%) was more common than random distribution pattern (15.8 - 31.6%). Ecological status of more than 50% of the species, including Zanthoxylum armatum, was rare in all the three sites. Quercus oblongata, Pinus roxburghii and Pyrus pashia recorded the highest values for importance value index (IVI) in Bhaddu, Sukrala and Dhandal, respectively. As per Dominance-Diversity Curves, the most dominant species were following the geometric curve and hence were utilizing the bulk of resources in the respective sites whereas other species were log normally distributed. Dhandal was the most diverse site having the highest values for species richness (19) and Shannon-Wiener's index (2.59). The Canonical Correspondence Analysis depicted that Zanthoxylum armatum along with Cu at Axis I and available K at axis II were the driving variables responsible for the distribution, diversity, and floristic composition of overstorey vegetation in the present study.

Key words: Aggregate distribution, Canonical correspondence analysis, Diversity Dominance-Diversity curves, *Zanthoxylum armatum* DC.

Structure of overstorey vegetation of *Zanthoxylum armatum* DC. inhabited sites of J&K (UT), India

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Introduction

The spatial distribution and floristic composition of an area is determined by a complex of environmental factors including biotic influence, climate, soil, and topography (Hanson and Churchill, 1965). These vibrant factors keep on changing due to various interactions both within and between themselves resulting in micro-gradients, expressed in the form of vivid habitats and vegetation types (Hanson and Churchill, 1965; Siefert *et al.*, 2012). Therefore, it is important to study the vegetation composition and structure and correlate it with environmental variables for understanding of mechanism of plant distribution in an area (Kent, 2012). Moreover, distribution of species is one of the most important parameters for; studying macro-ecological biodiversity patterns (Gaston and Blackburn, 2000), understanding the environmental factors responsible for species distribution (He *et al.*, 2003; Hurlbert and Haskell, 2003), assessing the effect of habitat fragmentation and climate change on the existence and/or extinction of a species (Thomas *et al.*, 2004; Fagan *et al.*, 2005), and framing a strategy for biological conservation (Myers *et al.*, 2000).

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ORGINAL RESEARCH ARTICLE

Ethnobotanical Studies on Some Angiosperms of Tehsil Hiranagar of DistrictKathua (Jammu and Kashmir), India

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ABSTRACT

The present study highlights the ethnobotanical use of different angiosperm species growing in the wild in tehsil Hiranagar of district Kathuain the Union Territory of Jammu and Kashmir, India. During the present study, information was collected regarding the various plants used in the area to cure different ailments by local people residing in distant villages of Hiranagar. The information collected for 50 plant species belonging to 29 families of angiosperms depicted that most of the species were used for general health problems such as cough, fever, indigestion, constipation, headache, dysentery, and boils, in addition to the treatment of cancer, kidney stones, eye troubles, female problems, rheumatism, and ulcers. The present investigation also revealed that mostly leaves were used for curing different ailments followed by roots, seeds, bulbs, flowers, and whole plants. Previously, many ethnobotanical studies were available from the district of Kathua. However, to date, no such study is available for Hiranagar.

Keywords: *Ethnobotanical use, Angiosperms, Hiranagar.*

INTRODUCTION

Traditional knowledge is the main source of all the ethnobotanical investigations.Fromthe past days of civilisation, humans have bowedto plants for healing, a tradition thathas survived thearrival of modern medicine and found new strength at the end of the 20thcentury. About seventy percent of the world's population still relies on traditional plant medicine [69]. India is one of the mega-diversity countries with the significantly high number of medicinal plant resources It has been estimated that more than eighty-five percent of herbal medicines which areused in traditional healthcare systems are obtained from medicinal plants [46] Many of the drugs that are prescribed have compounds thatare directly derived from the plants and several others which are being sold are natural products.The increase in alternative systems of medicine is primarily because such systems of medicine produce minimal side effects, and the systems are affordable to large sections of poor population [21]. In many of developing countries, namely, bangladesh (90%), myanmar (85%), india (80%), nepal (75%), sri lanka (65%) and indonesia (60%), rural people are mostly dependent on this system of medicine [2]. Who has estimated that the global market for medicinal plants and herbal medicine is worth usd 14 billion per year [57] and usd 1billion per year in india [23] ,[24]. As per the estimation of who, the demand for the raw materials of the plants is increasing annually at the rate of fifteen to twenty-five percent which is further estimated to get increased up to more than usd 5 trillion by the year 2050 [25]

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REVIEW PAPER
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An Overview of Smart and Intelligent Textiles

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ABSTRACT

se to textiles more than anything, and certainly we carry it most, other than anything. The last few own enormous growth in the development of wireless communication technologies, nanoengineering, hnologies, and miniaturization of electronic devices. These developments draw the attention of nvisage the significant characteristics of these advancements to the belongings with whom we are ince the last 20 years, the developments of new kinds of textiles called smart and interactive textiles lobe. Recently published Literatures, books and journals on the fields of textiles, electronics, information nced materials and polymers indicate that Smart textile materials and their application will boom in the ey are not dreams any longer. Two decades have elapsed since they become one part of the modern lothing, being on the shelves of the apparel and fashion markets. They are everywhere: from geo oil to the outer space in the expedition of the universe; from the hospitals beddings and clothing's to nts; and from the personal healthcare to sportswear applications. Smart and interactive textiles are es that are capable of sensing, actuating, generating/storing power and/or communicating. Research nt towards wearable textile-based personal systems allowing e.g. health monitoring, protection & thy lifestyle gained strong interest during the last 10 years. This work aims to make a look on the iew of these incredible, dynamic and very important objects.

nart textiles, Interactive textiles, Wearable antennas, Smart materials

TRODUCTION

eenth century, revolutionary changes sake of mimicking their natural counterparts. The technology has progressed so that synthetic fibres and their products surpass them in many aspects. Biological

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Relationship Between Burnout and Mental Health in Nurses Working in Intensive Care Unit

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Abstract

Burnout affects all varieties of healthcare professionals, but it is especially prevalent in those who provide care for seriously ill patients. Burnout is caused by an imbalance between an employee's personal traits and workplace problems or other organizational factors. Numerous negative effects are linked to it, such as higher rates of job turnover, lower patient satisfaction, and lower levels of care quality. Additionally, it has a direct impact on the physical and mental health of the large number of critical care doctors, nurses, and other healthcare professionals who work around the world. Nursing practice is complex, as nurses are challenged by increasingly intricate moral and ethical judgments. The purpose of this research was to examine the relationship between burnout and mental health in a group of intensive care unit nurses. A sample of 46 female nurses working in intensive care unit in the age range of 25-40 years was collected from Jammu city. Burnout assessment tool and mental health continuum-short form were used as tools. Results indicated significant negative relationship between burnout and mental health in nurses.

Keywords: Burnout, intensive care unit, mental health, nurses

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Green Chemistry- Promising Step towards Sustainable Development

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ABSTRACT

The role of chemistry is essential in ensuring that our next generation of chemicals, materials and energy is sustainable. Worldwide demand for environment-friendly chemical processes and products requires the development of novel and cost-effective approaches for preventing pollution. The most important goals of sustainable development are to reduce the adverse consequences of the substances that we use and generate. It is a challenge before chemists to develop synthetic methods that are less polluting i.e. to design clean or 'green' chemical transformations. The area of chemistry which is particularly directed to achieve such goals is termed as 'green chemistry'. Green chemistry is a central issue, in both academia and industry, with regard to chemical synthesis in the 21st century. This review paper presents a brief description on green chemistry principles and its developments as well as applications in daily life.

Key Words: Green Chemistry, Sustainable Development.

INTRODUCTION

The first principle of the Rio Declaration on Environment and Development states that "*Human beings are at the centre of concerns for sustainable development they are entitled to a healthy and productive life in harmony with nature*[1]", which highlighted the challenge to all of us to define the objectives of sustainable development and to provide scientific, technological and social tools to achieve these objectives. We do not have to look too far back to see how a society could lose its sustainability the rise and decline of Easter Island, discovered by Polynesians around 400 A.D.[2] Its population reached a peak at perhaps more than 10,000 far exceeding the capabilities of the local system. The forests were cleared for agriculture and to move the giant stone monoliths, known as "Moais" from 1400 to 1600. Core sampling from the island has shown deforestation, soil depletion, and erosion resulting in over population, food shortage, and ultimately the collapse of the society. Thus, the history of Easter Island indicates that the sustainability of our civilization depends on whether we can supply the rapidly increasing population with enough energy, food and chemicals simultaneously without compromising the long term health of our planet.

The role of chemistry is essential in ensuring that our next generation of chemicals, materials and energy is sustainable. Worldwide demand for environment-friendly chemical processes and products requires the

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WILEY

REVIEW ARTICLE

Comprehensive review of nickel biogeochemistry, bioavailability, and health risks in the environment

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Abstract

Elevated nickel (Ni) content in soils and water cause a potential threat to food safety and human health. Owing to its numerous uses from common domestic items to industrial usage, it is vital to assess its bioavailability and speciation in the natural environment. In this review, the biogeochemical cycling of Ni in the natural environment and numerous aspects like dissolution, reducing-oxidizing condition, pH, precipitation, and biological transformations have been briefly discussed. Moreover, health risks associated with Ni have been assessed based on the datasets (soil samples from diverse countries) collected from the literature, and it exerts various health perils in humans for example punctures of the nasal septum, prolonged rhinitis, and contact dermatitis instigated by the absorption of Ni-metal dust, Ni alloys, and Ni salts on injured skin etc. The carcinogenic and non-carcinogenic risks inferences showed that dermal interaction is the foremost method of revelation, and children are more susceptible than adults. The findings of this study will be significant for scientists, environmentalists, and policymakers in making strategic strategies for environmental protection and strategic human health management to reduce Ni pollution in the natural environment.

KEYWORDS
biogeochemical, cancer risk, nickel, source, speciation

1 | INTRODUCTION

Nickel (Ni) is an indispensable element for humans at lesser quantity, assisting reproductive competence and enzyme actions (Li, Wang, et al., 2020) and occurs in diverse types comprising nitrates, sulfates, halides, and organic constituents, and greater amounts (Ni >100 mg/kg) of soil can be deleterious for plants and living beings (Chen et al., 2020; Kumar, Jigyasu, et al., 2021; Kumar, Pinto, et al., 2021). The occurrence of undue concentrations of Ni above permitted limits in soil (35 mg/kg) and water (0.02 mg/L) is harmful to live beings (Hussain et al., 2017; WHO, 1996). However, it is vital for plants with a concentration of <10 mg/kg in plants (Sugawara & Nikaido, 2014) and in the human microbiota at less ingestion rate of 5 μg/kg body weight per day (Russell et al., 2001), a greater consumption of Ni leads to severe peril in humans like allergy, cancer, and compacted lung role (Zambelli et al., 2016). Consequently,

Amit Kumar and Vinod Kumar contributed equally to this study.

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Jatropha curcas L.: A sustainable resource for biofuel feedstock with medicinal and commercial attributes

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The Euphorbiaceae family includes *Jatropha curcas* L., a tree with the greatest potential for producing biofuel. A perennial, drought-resistant, and extremely adaptable plant, it is gaining prominence in the biodiesel industry. Ratanjyot, Nutmeg plant, Barbados nut, and Physic nut are some of its more well-known names. *Jatropha* trees grow 3 to 6 meters tall, with heart-shaped green leaves, smooth, grey bark, and latex. A huge shrub or small tree known as *Jatropha curcas* L. produces seeds containing inedible oil. *Jatropha curcas*, a tropical plant, can be cultivated as a commercial crop or on farms in areas with varying precipitation levels, ranging from low to high. Plants can be grown as a crop or as a border hedge to keep grazing animals away from crops and minimize soil erosion. *Jatropha* leaves, seeds, and bark have been used medicinally since ancient times, treating constipation, anthelmintic difficulties, and stomach illnesses. Many different secondary metabolites were discovered when physio-chemists studied the extracts and latex, such as alkaloids, saponins, curcin, curcusones-B, curcain, lectin, curcacycline A, phorbol acetate, tannins, steroids, etc. The *J. curcas* plant is used in various ways, including replacing fossil fuel diesel for domestic purposes, soap production, and raw materials

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Breaking the Silence: A Struggle for Freedom in *My Feudal Lord*

Shakun Mahajan

Tahmina Durrani was born in a very rich Afghan family. Her father, Shahkur Ullah Durrani was the Governor of State Bank of Pakistan and the managing director of Pakistan International Airlines, while her mother was a house wife. At the age of seventeen she was married to Anees Khan but the couple divorced in 1976. Then she was married to Ghulam Mustafa Khar, a former Chief Minister and Governor of Punjab. After thirteen years Khar and Tehmina were divorced. Durrani is married thrice elected Chief Minister of Punjab, Shahbaz Sharief, the brother of Nawaz Sharief, the Ex Prime Minister of Pakistan. Tehmina started writing in 1991. Her works are *My Feudal Lord* (1991), *Mon Seigneur Et Maitre* (1991), *A Mirror to The Blind* (1996), *Blasphemy* (1998), *Happy Things in Sorrow Times* (2013). Her first book, *My Feudal Lord* (1994), caused discord in Pakistan's society by describing her abusive and traumatic marriage to Ghulam Mustafa Khar, a politician.

In this novel she has described the evil and the callousness of the feudal system and discussed how women of Pakistan live in a depressed and male-dominated society. It also represented the exclusive details of how corrupt and immoral Pakistan's ruling, feudal elite truly was and how society turned a blind eye to this wretched evil. *My Feudal Lord*, not only narrates extra-marital affairs or adultery but also the struggle and eventual triumph of a victim against astonishing odds. The novel occupies a prominent place amongst those contemporary Pakistani women writers who raised their voices against the ruthless marginalization of women and also against the murderous patriarchal social structures. A critique of the feudal system remained signifying feature of Durrani. Pakistani women writers have portrayed the lives of Pakistani women under the imposed role of religious, social and economic parameters. These roles were partly traditional and partly modern, women invariably face these realities every day. Women in Pakistani fiction, however, have been shown constantly changing and developing. They have been portrayed mostly as round characters which are initially bound and restrained by the chain of customs and traditions. They are also depicted as subaltern, as marginalized by social taboos in dominant patriarchal system reigning supreme in Pakistan.

Tehmina Durrani shows how marginalization of women emerges

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SUFI AESTHETICS: A STUDY OF M.G. VASSANJI'S *THE ASSASSIN'S SONG*

Abstract:

Sufi writings are experiences of access to the Absolute based on myth and symbol; in other words, on the profoundest and most unconscious part of the human being. The paper aims to explore Sufi aesthetics based on two foundations of Sufi aestheticism: the first, that the attempt to discover the hidden only leads to a greater need to attempt it. The second foundation consists of the fact that the experience of revelation imposes a discourse that escapes from the chains of rationality and logic, and from the chains of normal common sense, in addition to freeing itself from doctrinarian theology and the norms of religious law.

For the purpose of study the paper takes into consideration M.G. Vassanji's The Assassin Song which tells the story of Nur Fazal, a mysterious thirteenth century Sufi saint and his successors, the Sahebs of Pirbaag (Pirbaag, the Garden of the Pir, is the shrine of the Wanderer, a Sufi).

Sufism has often been quoted as being "a foreign plant in the sandy desert of Islam" by old school muslims and Westerners alike. For a long time Sufism has been considered part of an Iranian development inside of Islam and it has also been stressed by western scholars that Sufism holds strong ties to Neoplatonist influences. However followers of Sufism trace its beginnings back to Prophet Mohammad and argue that their seemingly pagan antics are inspired by the holy words of Koran. Sufism is a type of mysticism that focuses on the dissolutions of forms and rationality and instead supports the universal love of truth. Sufism (Arabic *Tasawwuf)* is a name

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