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Satyendra Singh

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A - 11

SEM, FTIR, 1HNMR

GROWING DIGIIYAL SKILL GAP- NEED FOR INDUSTRY-ACADEMIA INTEGRATION

Dr.Bineet Sinha, Head of the Department
Management Studies
Sobhasaria Group of Institutions

The wide spread digitalization and consequent demand or the skills which can fill the gap has been invariably n demand. According to Digital Skills Index from Sales orce 73% of the global workforce are unprepared for uture work demand -Jan 2022,Forbes Magazine. The ndian software industries are grappling with skill hortage. The Hindu, March,5-2021says India's digital work force need to grow Nine fold by 2025 in order to neet 3.9 billion digital skill sessions. At present only 2% India's workforce has digital skills. These are the ew example of my paper. The purpose for writing this paper is to find out probable solution of growing skill gap. Till 1998 Kodak was the leading Company in Selling Photo Papers in the world having 1,70,000 mployees with 85% of market share. In just few years Kodak became bankrupt due to the introduction of Digital Photography and all their employees were out of job. The only answer to this alarming problem is "Creating closer Industry – Academia collaboration. The higher education sector needs to come out of the shell and create a broad engagement between Industry-Academia and other stakeholders. The concept that academia is supplier and industry is customer misleading and this concept has to be broken. The concepts or ideas or Technology germinates in the market and then comes to the book to be refined, develop and organize. I strongly believe in redefining the curriculum at HEI's by mixing engineering –management curricula so that "know How and Show How" can go hand in hand to create techno-professionals.

Keywords: academia, technoprofessional, skill Gap

A - 12

COMPARATIVE STUDY OF VARIOUS RANKING FUNCTIONS FOR FUZZY OPTIMIZATION PROBLEM

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In this paper, we discussed fuzzy optimization problems in which all parameters of problem are used in form of trapezoidal fuzzy number in fuzzy environment. We obtained crisp models for these fuzzy optimization problems by using various ranking function. Illustrated examples of fuzzy optimization problem are given to clarify our proposed technique.

Keywords: Ranking Function, Optimization Fuzzy Problem,Membership Function, Trapezoidal Fuzzy Number

A - 13

A REVIEW STUDY ON CHALLENGES AND THREATS OF BIRDS DURING MIGRATION

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Bird migration is one of nature's most amazing occurrences. This paper is based on the review study on challenges and threats of birds during migration. We will discuss the different types of challenges and threats of birds during migration. This paper includes a brief discussion on literature review regarding why and when birds migrate. Donald investigated bird migration over the Himalaya in 1952, while Ali researched wagtails in Kerala in 1962.Birds migrate from one environment to another in pursuit of better living

have been focused on this issue. The present study evaluated changes in the elements of the soil irrigated with wastewater. This ability of conductance in water is directly proportional to the concentration of the ions present in the water. The Compounds which dissolve into the ions are known as the electrolytes. The more the numbers of ions present in the electrolyte, then the higher the conductivity of water. Similarly, the fewer ions present in water, the less conductive the conductivity of water. Deionized or distilled water can also act as an insulator due to the very low conductivity value. Seawater is said to possess a very high value of conductivity. Pure water is said to be a bad conductor of electricity. Normal water is said to have impurities from ions called minerals etc. These ions are known to be responsible for the conduction of electric current in the water. Because the electrical current in water is transported by the ions present in them, the electrical conductivity is said to increase with the increase in the concentration of ions in them. The waste water from household (kitchen and sewage) consist such substances which result in high pH and electrical conductivity making it unfit for plants and human usage. This waste water can be treated easily at home in the following manner. Firstly the water should be collected in a pit and then allowed to settle for some time so that heavier waste material settles down and the lighter waste can be filtered through a fine net. Then when the filtered water is passed through the fine fibrous coarse net of dried ridge gourd (turai) then there is slight reduction in pH and a considerable reduction in the electrical conductivity of water (reduction measured from 117 to 1). Now, treated water is free from harmful substances therefore can be used for gardening (watering plants) and other household chores such as washing clothes, floor mopping etc.

Keywords: ridge gourd (turai), pH and EC, water

A -347

FAUNAL DIVERSITY OF SIKAR DISTRICT, RAJASTHAN

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[2]Wildlife Laboratory, Head P G Department of Zoology, Seth G B Podar College, Nawalgarh, Jhunjhunu, Rajasthan

Rajasthan has three major physiographic regions, the western desert (Thar Desert), the Aravalli hills and the southeastern plateau. The most striking geographic feature is the Aravalli range, the oldest folded mountain range in the world, which intersects the State diagonally end to end north-east to south-west into three-fifth north-western desertic zone and two-fifth eastern semi arid region. The elevation of Aravalli range gradually decreases in north-east direction, as it is 1,772 m at Mt. Abu (Gurushikar),1100 m at Bijapur, 913 m at Harshanath and 792 m at Khetri; the elevation further decreases to 335 m at Delhi beyond the boundaries of the State in north-east direction. The total forest area of the State is 16,036 Km2, which occupies 4.69% of the total geographical area (FSI, 2009). The vegetation delineation depends on spatial, spectral and temporal resolution of the satellite sensor on one hand and the spatial extent and degree of homogeneity of the species assemblages on the other hand. The forest class subdivided into mixed species forest types, gregarious species forest types, locale specific types, degraded types based on composition and location specific distribution controlled by physiographic, edaphic and disturbance conditions. The most commonly spotted bird species of this area were Cattle Egret, Intermediate Egret, Red-wattled Lapwing, Rock Pigeon, Eurasian Collared-Dove, Spotted Dove, Chestnut-headed Bee-eater, Bank Myna and Common Myna. The Indian

owl was observed which is listed as schedule –I as WPA, 1972 and others listed as schedule IV as per PA, 1972. The reptile, Common Garden Lizard, mmon Indian Monitor, House Gecko and Fan-oated Lizard, Rosebelly Worm-eating Snake and alayan Wolf Snake were observed; Indian Cobra Russell's viper were provided protection as per edule-II of Wild life Protection Act, (1972). mmon Mongoose, Jackal and Monkey were rved which are protected under schedule II and ai is Schedule-II animal as per Wildlife Protection 1972. Common Indian monitor is schedule-I as per an Wildlife Act and should be protected. I

words: Aravalli, bird species, Rajasthan

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VAILABILITY OF NITRATE IN WATER IN AWALGADH DISTRICT OF JHUNJHUNU (RAJASTHAN)

*Dau Lal Bohra[1] and Maha Singh Rao[2]
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[2]Head, Departments of Zoology, Government Science College, Sikar, Rajasthan

rate in ground water is unequally distributed in the asthan. Major parts of Churu, Alwar, Bharatpur, re, Jaipur, Sikar, Tonk and Jhunjhunu, are inherited nitrate rich ground waters while districts like swara, Bundi, Bikaner, Chittor, Kota and Jhalawar e low nitrates in their ground waters at many places. well documented internationally that water supplied taining high levels of nitrate have been responsible cases of infantile methemoglobinemia which may mately lead to death. A very high infant mortality e in Rajasthan might be a consequence of high nitrates in drinking water supply. Some recent studies have shown that nitrates in drinking water besides causing methemoglobinemia can result in various other clinical manifestations like recurrent stomatitis, recurrent respiratory tract infections (RRTI) etc. These findings have indicated that a rethinking has to be given to the existing standards for nitrates in drinking water. Based on potential nitrate toxicity studies in view of above health effects the whole region has been classified into five water quality zones, namely, safe, mild, moderately problematic, highly problematic and dangerous. For areas falling under fourth and fifth zones it is recommended that immediate measures be taken to overcome the adverse health effects.

Ground water is increasingly being sought as a source of drinking water due to the scarcity, non-availability and bacteriological pollution of surface water. The different parameters determined are pH, TDS, fluoride, chloride, nitrate, sulphate, total alkalinity and total hardness. It has been observed that nitrate values are higher compaired to ICMR standards. Other parameters were found within desirable limits. The interesting fact is that the nitrate alone is making ground water unfit for drinking. The nitrate concentration in the studied area varied from 41 to 380 mg/L. The maximum permissible limit is 50 mg/L (ICMR). The general taste of water is also good. A layman cannot determine the possible hazards of water quality. This fact makes the study important. There is no industrial growth in Nawalgadh, no dense population but the higher nitrate concentration in ground water indicates some other source. Irrigation is the main occupation of the surrounding population and chemical fertilizers are more commonly being used. The higher nitrate concentration may be attributed to the chemical fertilizers.

Key Words: Ground water, Physico-chemical analysis

Optical Properties of Laser Beam Irradiated Polycarbonate/Polystyrene composites Film

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Abstract

Polycarbonate/polystyrene composites films were irradiated by laser beam with various time durations from 5 minutes to 15 minutes. The polymer composites films were prepared by sol-gel method. The effects of laser beam on structural, optical and surface morphology of PC/PS composites films were investigated by various characterization techniques such as X-ray diffraction (XRD), UV-visible spectroscopy (UV-vis), Fourier Transform Infrared Spectroscopy (FTIR) and Optical Microscope. The XRD pattern shows the average crystallite size, percentage of crystallinity and inter-chain separation, which decreases with increase in times. UV-Vis spectra show that the energy band gap and transmittance decreases while number of carbon atoms increases with times. The FTIR spectra evidenced very small change in cross linking and chain scissoring at high times, while the optical microscopy shows a color change with increasing time.

Objective

- To understands the effects of laser beam in polymer composite films by means,
- XRD Analysis- Crystallinity and average inter-chain separation.
- Evaluation of energy band gap and carbon cluster by UV-Vis spectra.
- FTIR Analysis- cross linking and chain scissoring.
- Optical Microscopy Analysis- Surface morphology

Introduction

- Laser beam irradiation is an effective technique to the modification of various properties of the polymeric material such as electrical, optical and mechanical properties etc.
- Polymer Composites films were play a very important role in the field of Electrical properties of polymeric insulating materials.
- The selection of polymeric material is very important parameter to investigate the thermal, optical and mechanical properties of polymer composites films.
- In this study we are select polycarbonate (PC) and polystyrene (PS) because, there are many similarities in PC and PS such as both are amorphous, transparent, light weight, high stability and wide band gap materials.

Laser beam irradiation

- The polymer composites films were prepared by sol-gel method.
- The PC/PS composites films (20 μm thickness) were cut in to the size of 1×1 cm^2 and mounted on the copper ladder.
- Laser beam at different times ranging from 5 minutes to 15 minutes.

XRD Analysis

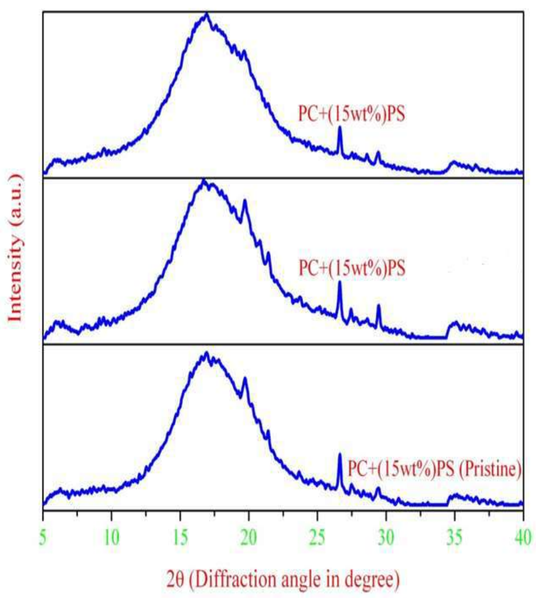


Table 1

PC/PS	Percentage Crystallinity	Inter-chain separation (A^0)
Pristine	55.76	4.32
2	53.27	3.91
3	51.08	3.39

$$B = \frac{A}{A'} \times 100\,\% \qquad (1)$$

$$R = \frac{5}{8}\left[\frac{\lambda}{Sin\theta}\right] \qquad (2)$$

Uv-Vis Spectra

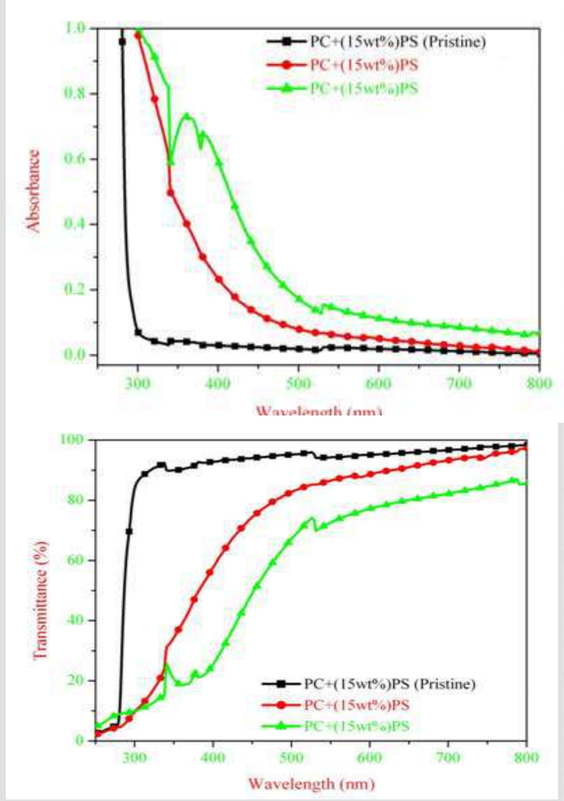
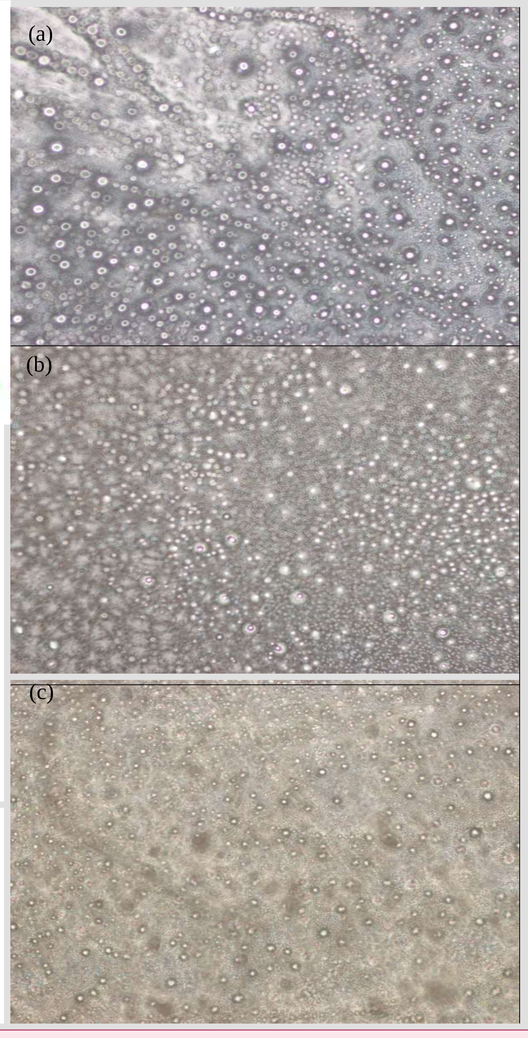


Table 2

PC/PS	Direct energy band gap (eV)	Indirect energy band gap (eV)	No. of Carbon atom
Pristine	4.34	4.16	65
2	4.00	3.50	84
3	3.83	3.37	91

Optical Microscopy



Conclusion

The effect of laser beam in polymeric films are:-

(i) The percentage crystallinity, Inter-chain separation, Energy band gap (Direct and indirect) decrease and number of carbon atoms are increase with increase in the ion fluence.(ii) After irradiation PC+ (15wt%)PS films colour is found to change from colourless to yellowish to dark brown.

The decrease in the percentage crystallinity, Inter-chain separation, energy band gap while the number of carbon atoms increase and colour change from colourless to yellowish with increase in the ion fluence. There is no appreciable colour change but formation of nanoclusters due to the to interaction of carbon ion beam. The change in colour of PC/PS films colorless to yellowish to dark brown could be attributed to the formation of conjugated polyene system and the conjugation length in irradiated films, so it becomes darker with increases in ion fluences. It could be attributed to chain scissions and formation of carbon nanoclusters.

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Effect of 55 MeV Ions Beam Irradiated on Structural and Thermal properties of Polycarbonate/Zinc oxide Nanocomposites thin films

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Abstract

Polycarbonate (PC)/ Zinc oxide (ZnO) nanocomposite films were prepared by a solution mixing method and irradiated by 55 MeV carbon ion beam at various ion fluences ranging from 1 E11 to 1 E13. The structural and thermal properties of pristine and ion beam irradiated PC/ZnO nanocomposite films were investigated by various characterizations techniques such as scanning electron microscopy (SEM), energy dispersive X-ray spectra (EDX), X-ray diffraction (XRD), Fourier transform infrared spectroscopy (FTIR), and differential scanning calorimetry (DSC). The SEM measurement shows the uniform dispersion of ZnO nanoparticles in PC matrix. EDX spectra indicate the presence of ZnO on the surface of the nanocomposite films. The XRD pattern shows that the average crystallite size and percentage of crystallinity decrease with increases of ion fluences. FTIR spectra depict the position of different bonds in PC and nanocomposite films. The DSC result shows that glass transition temperature decreases with ion fluences.

Objective

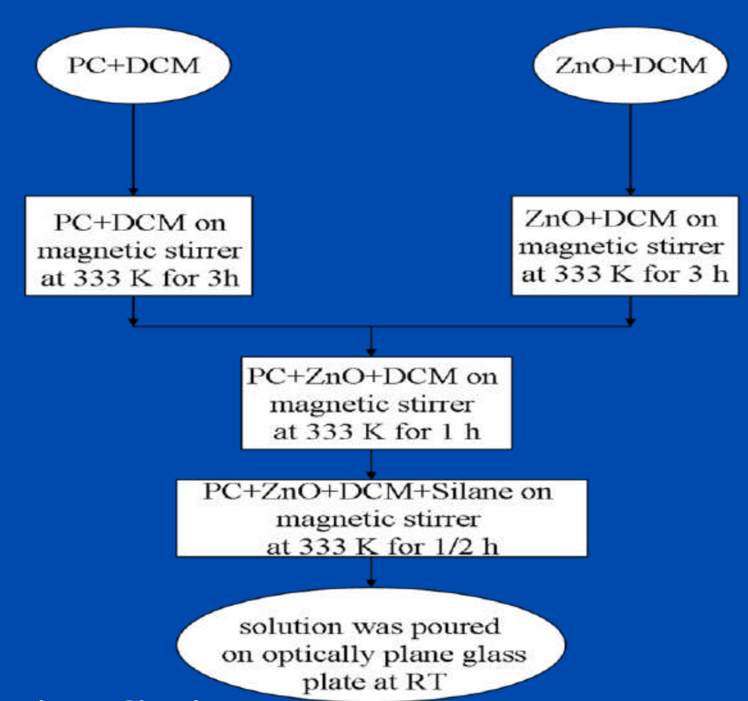
- EDX Analysis- Composition of the materials•
- SEM Analysis- Dispersion of ZnO nanoparticles in PC matrix
- EDX Analysis- Composition of the materials
- XRD Analysis- Crystallinity and average average crystallite size
- FTIR Analysis- Cross linking and chain scissoring
- DSC Analysis- Glass transition temperature (Tg).

Introduction

- Swift heavy ion beam irradiation is an effective technique to the modification of various properties of the polymeric material such as electrical, optical and thermal properties etc.
- Polymer nanocomposites films were play a very important role in the field of optical, electrical and thermal properties of polymeric insulating materials.
- Recently , several articles have been published on effect of ion beam in pristine polymer-nanocomposites , but effect of ion beam on optical and thermal properties of polymer-nanocomposite is rarely reported.
- In last few years the filling of inorganic nanoparticles in organic polymer has much attention because of its excellent physical, mechanical, optical, electrical, and thermal properties.
- Organic polymers generally have long-term stability and good process ability.
- Inorganic nanoparticles possess outstanding optical, catalytic, electronic and magnetic properties, which are significantly different their bulk states.
- By combining the attractive functionalities of both components, nanocomposites derived from organic polymers and inorganic nanoparticles are expected to display synergistically improved properties.

Experimental

Method for sample preparation



SHI beam irradiation

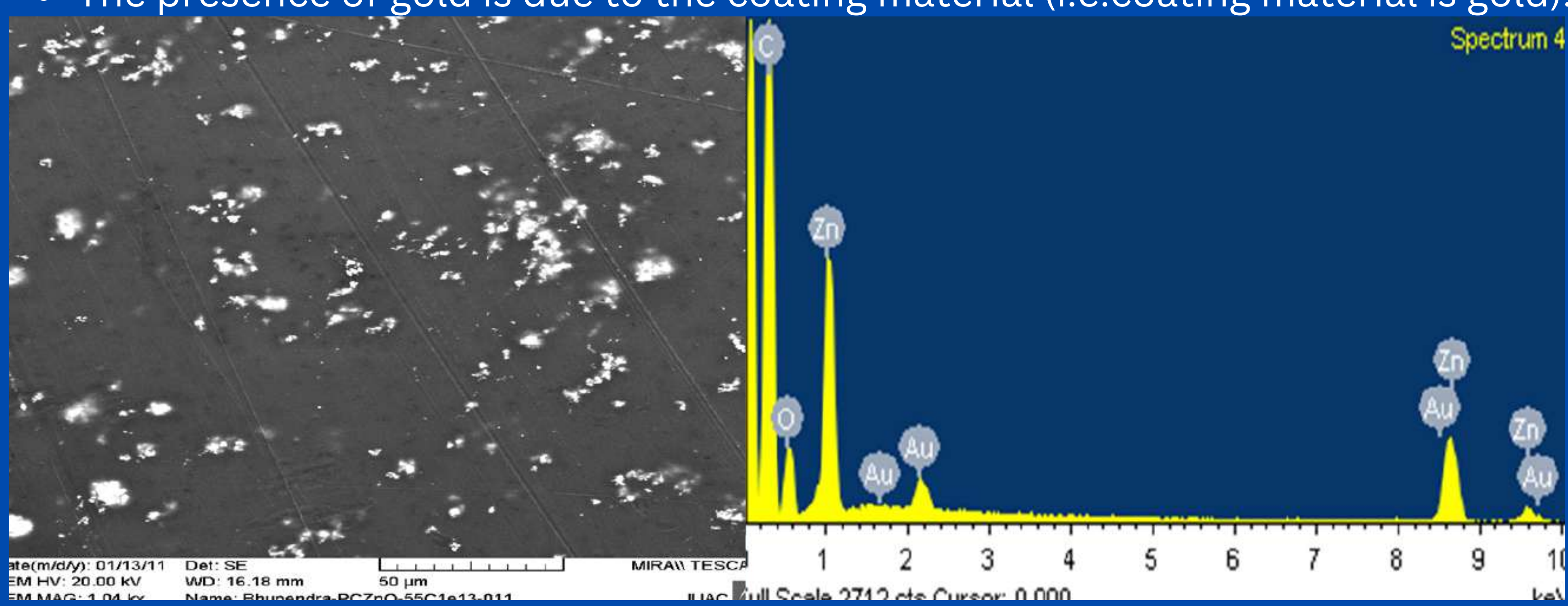
- The PC/ZnO nanocomposites films (20 μm thickness) were cut in to the size of 1×1 cm2 and mounted on the copper ladder.
- 55 MeV energy and C+5 beam at different fluences range from 1E11 - 1E13 ion/cm2.
- Vacuum - 5×10-6 Torr.
- For irradiation, using the 15 UD Pelletron facility, general purpose scattering chamber (GPSC) at Inter University Accelerator Centre (IUAC), New Delhi.

SEM analysis

- The dispersion of ZnO nanoparticles in PC matrix is characterized by SEM.
- It is found that ZnO nanoparticles are uniformly dispersed in PC matrix.
- The ZnO nanoparticles are shows in form of white parts and PC shows in gray part.

EDX Analysis

- The presence of the elements are found by EDX.
- The EDX spectra is showing the presence of Zinc, oxygen, gold and carbon.
- The presence of gold is due to the coating material (i.e.coating material is gold).



XRD analysis

The variation of percentage crystallinity and crystallite size are shown in Table1.
The percentage crystallinity is calculated by

$$B = \frac{A}{A'} \times 100\%,$$

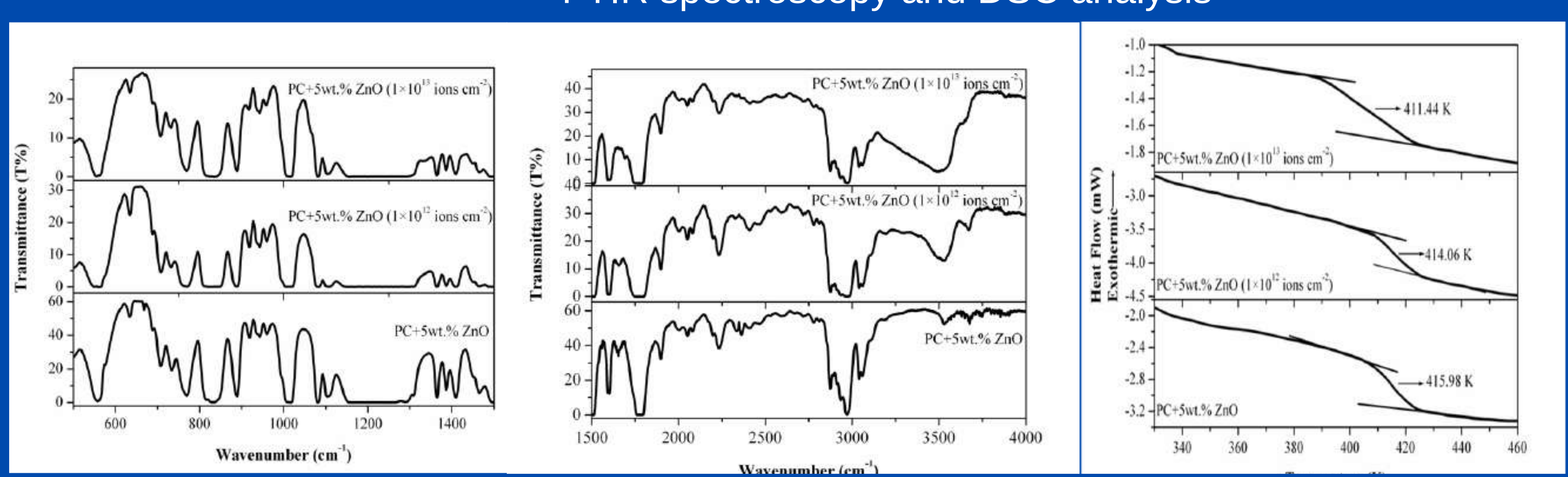
Average crystallite size is calculated by

$$L = \frac{k\lambda}{\beta \cos\theta},$$

The percentage crystallinity and average crystallite size decrease with increase in ion fluence.

Fluence (ions/cm2)	Crystallinity (%)	Crystallite size (L) Å			
		PC	(100)	(002)	(101)
Pristine	77.45	12.67	318.63	346.48	321.46
1E12	74.81	12.28	317.02	319.84	312.01
1E13	71.11	11.95	306.11	303.12	301.21

FTIR spectroscopy and DSC analysis



Conclusion

The percentage crystallinity and crystallite size are decrease with ion fluences.
It could be attributed to chain scissions and formation of carbon nanoclusters.
The decrease in the glass transition temperature is further evidenced by the chain scission and cross-linking.
These results indicate on an increase in the content of amorphous phase with increase in the ion fluences due to the scissoring of the polymer chains.

The Need for Critical Chemical Study of "Ayurveda Mahodadhi" in special context to water

Prof. Chetan Dadheech

Head, Department of Chemistry, Seth G.B. Podar College, Nawalgarh (Raj)

Abstract:

If India has to make progress in the field of science in true sense, then the primary need is to eradicate the inferiority complex from the minds of Indian students and researchers that ancient Indian texts are only poetic forms of imagination or are merely rendering of divine existence. They have to understand that whatever knowledge, in the field of science and other wonderful miracles exist in the world, it is the gift of all Indian texts. It must also be understood that Indian texts have been the basis of whatever we get from modern science, but the world has not been able to get as much benefit from those texts as it should have. The main reason for this is that the learning and understanding of those texts are difficult to understand as they are available in less known la has not been exact. It has been said in Indian scriptures that the knowledge described in them is received only by the men of Sattva Prakriti. The people of Rajas nature understood few points and spread misconceptions while those with tamasic tendencies get knowledge only in the wrong way from these scriptures. Although all Indian scriptures are full of scientific knowledge and research is needed on them for human welfare, yet the article presented has been written by targeting only water among various subjects explained in "Ayurveda Mahodadhi" (Annapan-Vidhi) which was written by Vaidyaraj Shushena and beautifully explained the role of water for life.

Keywords: Water, Indian text, Research, Knowledge, Human Welfare.

Biodeterioration of Paper Manuscripts: A SEM & TEM Study of Fungal Spoilage Reproduced Under Controlled Conditions

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Abstract:

Biodeterioration phenomena, a complex of physical and chemical alteration processes in various materials, such as organic, inorganic and composite in nature those constituting the objects that represent our rich cultural heritage. The biodegradation of paper is conditioned by several variables such as the materials from which cellulose is obtained during process, the manufacturing processes employed, the occurrence of other affecting substances such as lignin or metallic compounds, and by the environmental conditions in which papers are conserved. In the study, biodeterioration of paper was artificially induced in order to evaluate the role of a range of chemical and physical variables on damage caused by cellulolytic fungi. A variable pressure SEM & TEM instrument was used to characterize paper samples with different fibre origins, and alterations obtained *in vitro*. Two fungal strains, *Aspergillus terreus* and *Chaetomium globosum*, which are cellulolytic species frequently associated with paper deterioration, were used to produce stains with characteristics very close to those observable on the art objects made from paper. The stains obtained during the study on the different samples of paper were compared at both low and high magnification, in order to visualize the macro- and microscopic characteristics of paper fibers, inorganic constituents, impurities, and the deteriorating agents related to the spoiled areas. During the study It was observed that single paper characteristics can strongly influence the intensity and the results of the fungal action. For example, the activity of a fungal strain on paper grades containing fibers of the same origin, but with different sizing, led to the formation of profoundly different stains and alterations. Moreover fungal structures, analyzed by low vacuum SEM & TEM, in areas on paper corresponding to the stains appeared in different physiological states suggesting an important effect of paper constituents on fungal growth and their sporulating ability.

Keywords: Biodeterioration, Cellulolytic fungi, SEM, TEM,

Structural and thermal properties of ION beam irradiated polycarbonate/polystyrene bilayer films

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Abstract: Polycarbonate/polystyrene (PC/PS) bilayer films prepared by solution mixing method and irradiated with ion beam at different fluences ranging from $1X10^{11}$ to $1X10^{13}$. The structural, surface morphology, optical and dielectric properties of these films were investigated by X-ray diffraction (XRD), UV–visible spectroscopy, Fourier-transform infrared (FTIR) spectroscopy, optical microscopy and dielectric measurements. The XRD pattern shows that the percentage of crystallinity decreases while inter-chain separations increase with irradiation of ion fluences. UV–visible spectroscopy shows that the energy band gap decreases and the number of carbon atoms in nanoclusters increase with the increase in ion fluences. The refractive index is also found to decrease with the increase in the ion fluence. Optical microscopy shows that after irradiation polymeric bilayer films color changes with ion irradiation. The FTIR spectra evidenced a very small change in cross-linking and chain scissoring at maximum time leaser irradiation. Dielectric constant decreases while dielectric loss and AC conductivity increase with irradiation fluences.

Keywords: Ion; bilayer; energy band gap; refractive index

THE CIRCULAR ECONOMY

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ABSTRACT

A circular economy model is the implementation of renting in traditional ownership areas e.g. electronics, clothes, furniture, transportation etc. Through renting the same product to several clients, manufacturers can increase revenues per unit, thus decreasing the need to produce more to increase revenues. Recycling initiatives are often described as a circular economy and are likely to be the most widespread models. Proponents of the circular economy suggest that a sustainable world does mean a drop in the quality of life for consumers and can be achieved without loss of revenue or extra costs for manufactures. The argument is that circular business models can be as profitable as linear models, allowing us to keep enjoying similar products and services.

Keywords: Revenue**,** Waste materials**,** Sustainability etc.

Research in Classical Scientific Indian Text for the Welfare of Society and Life

Yogesh Verma, Research Scholar

Department of Chemistry, Seth G.B. Podar College, Nawalgarh Rajasthan

Abstract:

Indian texts are rich source of the knowledge and popular in all over the world from ancient times. It is known to all that India does possess a large number of classical texts in various classical and non-classical languages and most of these resources are not available to people due to many theoretical and practical constraints. Most of the classical texts of advanced languages are available in digital form to all for academic, non-academic, and commercial purposes based on which these texts have not only generated opportunities for occupation, application, and income but also have made lasting impact on knowledge and cognition of the text's users.

Keywords: Sushruta Samhita, classical texts, Charaka Samhita, Ashtanga Hrdyam.

Importance and Repercussions of *Datura stramonium* in the Classical Indian Medical System and its significance in the Modern Era

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Abstract

Datura stramonium or jimson weed is a wild shrub belonging to the family *Solanaceae*. Dhatura (Datura metel) is one of the Upavisha mentioned in Ayurveda. Upavisha's are less poisonous in nature and has been proven to have great pharmacological potential with a great utility and usage in folklore medicine. It has both toxic and medicinal properties. It can be used as an antidote, and its treatment is mentioned in both Ayurvedic and Modern texts. Datura is well known and frequently used drug for treating various ailments and it is an ingredient in most of the formulations in Ayurveda that are being utilised in daily life. It is commonly known as “devil's trumpet” and it was first described by Linnaeus in 1753. When properly purified Datura can be used for therapeutic purposes and be useful for various ailments. *D. stramonium* has been scientifically proven to contain biologically active substances like alkaloids, tannins, atropine carbohydrates and proteins. Traditionally it is used for skin disorders, ear pain, cough, fever and asthma. Fruit Juice is used to treat body pain. Leaves extract are externally used for injuries and wounds bleeding. fruit Juice is applied to scalp for falling hair and as antidandruff. About ten species of *Datura* are found, of which *Datura anoxia* and *D. stramonium* are the most important drug plant. The major toxic components of Datura include hyoscine, hyoscyamine, atropine and the seeds are considered to be the most dangerous part of the plant. So, also can add Datura-like upavishas in ayurvedic formulations to attain a quick result in ayurvedic therapies. This abstract attempts a sincere attempt to summarize the details of the lethal medication drug Datura (Datura metel Linn) as it is described in the Indian medical system.

Keywords: *Datura Stramonium*; Medicinal Plant; Pharmacological Activities; Traditional Uses

Medicinal plants in Ancient Religious Texts: A Natural Aid to cure infectious disease

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Abstract: Nature is always a golden sign to show the prominent phenomena of coexistence. Natural products from plants, animals and minerals are the basis for treating human diseases. Medicinal plants are presently in demand and their acceptance is increasing progressively. Medicinal plants are viewed as possible bridge between sustainable economic development, affordable health care and conservation of biodiversity. Over the centuries, the use of medicinal herbs has become an important part of daily life despite the progress in modern medical and pharmaceuticals research. Ayurveda, Rigveda and other Indian literature have mentioned the use of plants in treatment of various human ailments. Medicinal plants are important source to combat the serious diseases in all over the world. The presence of different phytochemical constituents in plant parts confirms their potential as medicinal plants. The need of the hour is to conserve the medicinal plants for the betterment of future mankind.

Key words: Medicinal plants, Phytochemical constituents, Conservation

Cultural heritage Indian society and scientific approach

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ABSTRACT

India is a hierarchical society. Whether in north India or south India, Hindu or Muslim, urban or village, virtually all things, people, and social groups are ranked according to various essential qualities. Unity of diversity is the most important characteristic of Indian Society. The two most important tenets of Indian culture are Human Values and Holism. Human values refer to moral, spiritual and ethical values while Holism means oneness or unity. Indian culture is very rich and diverse and teaches us to be tolerant to others. A society is a group of individuals involved in persistent social interaction, or a large social group sharing the same spatial or social territory, typically subject to the same political authority and dominant cultural expectations. Indian society is known for its ability of tolerance and acceptance, and social cohesion making it unique in sustaining its culture. The importance of fraternity enshrined in the Preamble of the constitution makes it a duty of every citizen. The Caste System is a unique feature in the Indian System. Caste system is a unique feature of Indian society. Indian society is a pluralistic society with a complex social order characterized by a multitude of ethnic, linguistic, religious, and caste divisions.

Keyword :- Cultural Heritage, Scientific Approach, Indian Society

ANCIENT INDIAN SCIENCES: SCIENTIFIC KNOWLEDGE

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ABSTRACT

Tracing history of any modern science such as biology is extremely complex task. Preparing a historical narrative of biology is quite an interesting endeavor because not only academicians but also laypersons are interested in this topic. A glance over the published material on the subject of "ancient sciences" including the biological sciences reveals that several elements of thought exist. Quite often various schools of thought are oppe in their approach as well as the aims, yet all believe firmly in the existence of high - level science and technology in the past, at times even considered to be better than the 20th century science and technology. The topic of "ancient science" is a debatable issue even from the historical point as, in my opinion; all the progress in the "scientific thought" is modern. Actually the focal point of the debate should be whether we can call the ancient knowledge as "scientific knowledge". The people involved in the debate, both at academic and popular levels, belong to such diverse backgrounds that discourse in mutually understandable parlance becomes exceedingly difficult. Aim of this paper is to look into the historical developments of biological thought in ancient India and in the West in order to ascertain whether there existed a systematic and institutionalized knowledge - base about life forms, methodological criteria necessary to evaluating the status of knowledge about living world in ancient India, and was there a method/system to transmit the knowledge / information gathered about biological forms to the next generation. For want of enough data, the scope of this enquiry is strictly not about the ancient period, but a few cases from medieval India are also included. A review of the published works on the topic of biology in ancient India demonstrates that the methodological frames necessary for interpreting the past are yet to evolve.

Keyword: Ancient scientific, knowledge

Indian Epic Medicinal plants given in Ancient Texts: Need Conservation

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Abstract: Plants are one of the most important sources of medicines. The parts of medicinal plants that may be used are different types of seeds, root, leaf, fruit, skin, flowers or even the whole plant. The active compounds in most parts of the medicinal plants have direct or indirect therapeutic effects and are used as medicinal agents. In the body of these plants, certain materials are produced and stored that are referred to as active compounds (substances), which have physiological effects on the living organisms. The application of plants as medicines date back to prehistoric period. The Indian epic flora is a fundamental part of the Indian culture and apart from having medicinal importance they also have religious value. In India the references to the curative properties of some herbs in the Rig-Veda seems to be the earliest records of use of plants in medicines. The Rigveda (3700 B.C.), mentions the use of medicinal plants. Our traditional systems of medicines, viz., Ayurveda, Yunani, Siddha and Homeopathy use herbs for treatment. It is estimated that 40% of the world populations depends directly on plant based medicine for their health care. In India, medicinal plants offer low cost and safe health care solutions. There are several attempts were made to explore indigenous knowledge on use of common medicinal plants. The medicinal attributes of many plants are found in leaves, used as alterative, tonic diuretic, blood purifier and antiphlogistic. They are used as remedy against chronic eczema, chronic ulcers, chronic rheumatism, chronic nervous, diseases, madness, cholera, amenorrhoea, piles and fistula. The presence of different phytochemical constituents in plant parts confirms their potential as medicinal plants. Uses of medicinal plants are time-tested and used by people worldwide and no side effects and cost effective compare to other system of medicine. With the changing scenario, there is a need to enhance and promote the conservation and cultivation of natural resources for medicinal plants. In addition to the requirement for conservation of medicinal plants it has also become essential to protect and patent the traditional knowledge.

Keywords: Medicinal plants, Phyto chemical substances, Conservation

CONSERVATION OF MANUSCRIPTS AND RARE BOOKS WITH SPECIAL REFERENCE OF ARCHIVAL BINDING

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ABSTRACT

India has a rich collection of manuscripts and archival materials which are the part of cultural heritage. These heritage materials are being damage day by day due to many factors such as environmental factors (light, temperature, humidity, dust and dirt), biological factors (microorganisms, insects and rodents), chemical factors, human factors and disasters etc. Manuscripts on paper and rare books are known as a big part of tangible heritage, which have a lot of information regarding social, cultural, religious, scientific, traditional, medicine, history and geography etc. This information connect our present from past and are also more helpful for further research in different fields in the future, hence it should protect. India is a tropical country, where weather always being fluctuates. Paper is organic in nature and very sensitive to climatic and biological factors. There are many problems found in the manuscripts and rare books such as stickiness, folds and wrinkles, damaged spine and stains due to color, water, ink, blood, adhesive, fungus and fungus stain, brown stains, brittleness, broken edges, damages due to insects, acidity in paper, ink and adhesive, porosity of paper and faulty conservation process in paper, etc. Besides all these problems binding play more important role for the safeguarding of manuscripts and rare books. Archival binding should be always technically and material wise perfect, however in India book binding is known as a careless part of Indian heritage. Due to this thought the conservators did not learn about methods and materials used for the archival binding. We have done some works on book binding and found some innovative methods and materials, which are useful for a good quality archival binding. Through this International Conference we want to share my innovative study on conservation of rare books and manuscripts with special reference on archival binding

for the participants and others. The detail account of the contents will be discussed in the full length paper.

Solid waste management: Problems and Remedies using Ancient Method

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Solid waste refers here to all non-liquid wastes. In general this does not include excreta, although sometimes nappies and the faeces of young children may be mixed with solid waste. Solid waste can create significant health problems and a very unpleasant living environment if not disposed of safely and appropriately. If not correctly disposed of, waste may provide breeding sites for insect-vectors, pests, snakes and vermin (rats) that increase the likelihood of disease transmission. It may also pollute water sources and the environment. Our old traditional method used by our ancestors play a very significant in this and also protect the environment as well.

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Waste Management of Solid in India: A Review

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Abstract: This is very simple but harmful theme for today's life. Waste thrown is omnipresent. In India the total MSW also known as Municipal Solid Waste, has been estimated at 68.8 million Tons per Year (TPY). The average efficiency of MSW ranges from 26% to 67% since 2008. Mounds of garbage could be seen easily anywhere. Thrown of wastes is present in forms of foul the rivers, pollute the lakes, even the villages are no longer true & pure, they too have many toxic mixed with the river water & the lands of villages too have the wastes of the polybags/polythene etc. So, it must be managed in some ways, if it could not be managed it may be create a big problem to suffer one day. We as an individual & as a society could reduce the menace. [1]

Keywords: organic wastes, biodegradable, non-biodegradable, recycle, solid waste.

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"माध्यमिक स्तर पर विद्यार्थियों में पर्यावरण जागरूकता जलवायु परिवर्तन और कार्बनिक उत्सर्जन को कम करना"

अनिल कुमार शुक्ला **डॉ विनोद कुमार**

शोध छात्र **एसोसिएट प्रोफेसर**

शिक्षा संकाय **शिक्षा संकाय**

आरबीएस कॉलेज आगरा यूपी **आरबीएस कॉलेज आगरा यूपी**

पृथ्वी विश्व और सौरमंडल का एकमात्र ऐसा पिंड एवं ग्रह है जिस पर जीवन अपने विविध रूपों में पुष्पित और पल्लवित हो रहा है । इसका मुख्य कारण पदार्थ चक्रों की संतुलित गतिशीलता और ऊर्जा प्रवाह की व्यवस्थित प्रक्रिया द्वारा जीवन के अस्तित्व और विकास के लिए अनुकूल जलवायु का विद्यमान होना है ।मानव एक बुद्धिमान प्राणी है ।मानव में स्वयं अपने पर्यावरण के

अनुकूल बनाकर प्राकृतिक पर्यावरण और जलवायु से अनुकूलन स्थापित कर न केवल अपने अस्तित्व की रक्षा की है अपितु विकास पथ पर तीव्र गति से अग्रसर हुआ है ।

प्रतिस्पर्धात्मक विकास की जल्दबाजी अधिकाधिक सुविधा भोगी प्रवृत्ति और स्वार्थ पूर्ण कृत्य से एवं अनियोजित और अनियंत्रित क्रियाकलापों द्वारा पर्यावरण पर नियंत्रण स्थापित करने के प्रयासों के फलस्वरूप पदार्थ के चक्रीय संतुलित प्रवाह और ऊर्जा के व्यवस्थित प्रवाह को असंतुलित और बाधित कर दिया है । जिसका प्रभाव अत्यधिक कार्बनिक उत्सर्जन और जलवायु परिवर्तन है ।इसने मनुष्य के समक्ष एवं अन्य जीव धारियों के समक्ष अस्तित्व और विकास की गंभीर चुनौतियां प्रस्तुत कर दी है।

DEPLETION OF ANCIENT LITERATURE IN THE PERSPECTIVE OF INDIAN LANGUAGE S-SANSKRIT, PRAKRIT AND PALI

SUDHANSHU DIXIT, PGT ENGLISH

KENDRIYA VIDYALAYA NO.3 AGRA CANTT

Language is a system that consists of the development, acquisition and use of complex system of communication, particularly the human ability to do so. Thinkers such as Rosseau have argued that language originated from emotions while others like Kant have held that it originated from rational or logical thoughts.

All languages rely on ‘semiosis’ to relate signs to particular meanings. While humans have the ability to learn any language, they only do so if they grow up in an environment in which language exists and is used by others. Sanskrit language is a part of Indian cultural tradition. It is considered Indo-Aryan language, while Pali is considered a prakrit language or a middle Indo- Aryan language. Though Pali and Sanskrit are known to be closely related. The Pali language is considered to be a composite language having several dialects and most likely is based on the language that Buddha taught which a dialect is generally.

Now the emphasis is that why these languages apart from Sanskrit to some extent are on the verge of extinction. Many of the ancient literature is treasured on birch leaves (bhoj Patras) or Palmyara leaves.

Here the role of science comes to preserve that ancient literature by using modern scientific knowledge.

The depletion of these classical languages can be checked by encouraging research and development-

work in these languages. The future generation must be making conscious about the semiosis of these languages by linking the past with future. The knowledge and wisdom treasured in these languages can be extracted by flourishing the use of these languages in universities and academic institution of higher learning.

CLIMATE SMART AGRICULTURE: A NEW VISION FOR SUSTAINABLE AGRICULTURAL PRACTICES

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Abstract

In order to achieve goal of food security, India needs to increase productivity and income from its agriculture practices. Depleting soil, unpredictable changing weather and low availability of good quality of water are the major challenges in decreasing the yield of quality production. Smart technologies and labor reducing machineries and biotechnology are the opportunities to mitigate these problems. Many advanced countries are optimizing crop cycle duration, quality of crop yield and environment as a common goal. India needs to develop regional agriculture development framework which will handle the common goal and regional problems of farmers, market and business.

Climate-Smart Agriculture (CSA) is a new approach which deals with these interlinked challenges in an effective manner. Since last decade, increasing occurrence and intensity of extreme weather conditions, like drought, heavy rainfall and flooding and high variation in temperatures already being experienced in many parts of India and globe, poses a significant threat to agriculture productivity.

CSA systems have different elements which include, management of farms, crops, livestock and aquaculture, ecosystem management, Services for farmers and land managers and changes in the wider food system. Present paper investigates that cultivation and harvesting of crops are demanding an adoption of climate smart agriculture using latest technologies and management for higher production with improved quality.

VASTU SHASTRA: RESTORATION OF CULTURAL HERITAGE

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ABSTRACT

Vastu Shastra is an ancient Indian science of harmony and prosperous living by eliminating negative and enhancing positive energy. The word Vastu is derived from the word 'Vastoshpati' used in the Rig-Veda, meant to provide protection and happiness. It is an ancient science of living. Our environment plays an important role in our health and welfare of the human society. Nowadays, Vastu shastra is known as a modern science, used in designing and construction of the house regarding the flow of Energy. The flow of energy is related to the five basic elements (earth, water, fire, air and space).Mythological studies states, that the five basic elements i.e., panchabhutas are also known as vastu elements: water, Agni, Earth, Wind and Sky, they balance our surroundings as well as our human body.

Traditionally, Vastu Shastra is an ancient Indian knowledge of architecture for development of plots, houses, hospitals, shops, heritage buildings and heritage parks, thereby, stimulating the restoration of cultural heritage. Vastu shastra also plays an important role in preserving Indian traditional Culture. Culture is the way a society live, it has diverse cultures like bhumi Poojan, Grha pravesh, marriages, and inauguration of new businesses.

Plants and trees to play a pivotal role in making our surroundings energized. But some plants and trees are prohibited in living place due to their interrelation with science and mythology. Plants have direct relation with human life because whatever the plants emit in the form of gas is been inhaled by humans. Some plants and trees emit negative vibes and harmful gases which pollutes our environment, thus making it unsafe and polluted.

Vastu is the science of orientation of directions. Each direction having a different impact on human body, some directions affect us positively and some adversely but each and every direction has a definite impact on our life. Plants and trees must be chosen with care and planted in proper direction in order to draw good results.

According to vastu there are some specific plants which are considered auspicious for homes must be planted e.g.Bamboos, Tulsi, Cycas, Dracena, Devil's Ivy, Money plant, Spider plant, etc, and kept inside the home, office or factory in a particular directions, which enhances air quality by removing indoor air pollutants, allowing inflow of air and natural light, promoting health, happiness and peace.

"PEACE AND SPIRITUAL VALUES; KEY CONDITIONS FOR DEVELOPMENT OF SUSTAINABLE CITY"

Mrs. Neeru Yadav Dr. Vinod Kumar Assistant Professor Associate Professor T.R.K.M., Aligarh

R.B.S. College, Agra

ABSTRACT The meaning of sustainable cities leads to sustainable development of citizens. The sustainable cities are mainly interconnected with environment and protection of natural resources, which leads to a minimum acceptable quality of life. There is a constant struggle with issues of air pollution, population. The availability of open, green spaces, Strong, healthy, liveable cities depend on a healthy environment, a robust economy and employment opportunities for citizens. Human endeavour focuses on basic assumptions like good livelihoods which give meaning to life and services for basic needs, regeneration of the natural resource base, conservation of the environment, controlling on demographic transitions from the rural to the urban sector etc. Thus, a sustainable city can be provide the basic needs of the people along with the necessary infrastructure of civic amenities, health and medical care, housing, education, transportation, employment, good governance, conservation of natural resources etc without any discrimination. According to Indian conditions, it should be given to control population and provide housing to the poor who live in sub-human conditions in slums, subsisting below the poverty line and causing environmental degradation. Population also leads to exploitation, crime and lawlessness due to unemployment. This alarming increase in population puts more pressure on housing, employment, healthcare, water and electricity. Large open and green areas are converted to colonies that are mainly leading to environmental degradation. Earth is the only planet of the universe and the solar system on which life is flourishing in its various forms because of the balanced dynamics of matter cycles. The systematic process of energy flow and the existence of a climate help to the survival and development of life. Human being is an intelligent creature. Human beings develop themselves

by making friendly to their environment, nature and water not only can adapt to his survival but also moving fast on the path of growth. The hasty tendency of human being to gain more and more in competitive growth and efforts are responsible to increase the pollution and climate changes. to control the environment by selfish acts of unplanned and uncontrolled activities have resulted in unbalanced and disrupted cyclic. Its unbalanced flow of energy and matter has an impact on excessive organic emissions. These climate changes have made problematic for human and other creatures. These climate changes have presented serious challenges of survival and development. Faced with these serious challenges, to overall sustainable development and to conserve the flowering and flourishing forms of life on Earth, it is necessary to reduce the uncontrolled carbon emissions at the earliest time. To build up togetherness and harmony of humankind, we have to promote the whole universe as integral entity, human welfare and love for humanity, human development, human solidarity and universal fraternity. For attaining all these achievements, we all have to promote peace as a dynamic, holistic and lifelong process by which we can practice to solve problems and to work together towards justice for peaceful and spiritual human development. Only education can contribute to get success on these dreams like mutual respect understanding, caring and sharing, harmony, compassion, social and global responsibilities, solidarity, appliance and tolerance of diversity among ethical, social, cultural and religious, National and regional groups. Every aspect of life at individual, societal and global labels offer opportunities of learning and live peacefully together. We should develop in field of spiritual values by promoting peace education. These peaceful and spiritual values can be providing better natural environment and development of sustainable cities.

Satyendra Singh

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Green Energy: Need of the Hour

Deepanshi Verma and Yashi Jain

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Abstract Green energy is the naturally replenished energy, i.e. these energy resources are renewable. This energy comes from natural sources such as sunlight, rain, wind, plants, algae, etc. Green energy is a much better option than fossil fuels as it has much smaller impact on the environment. Fossil fuels produce pollutants such as greenhouse gases, ash etc. On the other hand, green energy utilizes energy sources that are readily available all over the world which includes rural and remote areas that don't have access to electricity. The advanced technologies in green energy have lowered the costs of solar panel, wind turbines and other such sources that helps in placing the ability to produce electricity in the hands of the people rather than those of oil, gas and utility companies. One of the major types of source of green energy is the solar power, which is produced using photovoltaic cells. These cells capture sunlight and turns it into electricity. Second source is wind power. In this, the air flows on the earth's surface can be used to push turbines, with stronger winds, producing energy. Third is the hydro power (hydroelectric power), which is generated using earth's water cycle, including evaporation, rainfall, tides, etc. Fourth source is geo-thermal energy, which is thermal energy that comes from the sub-surface of the earth. Fifth source is biomass, which contains stored energy from the sun and used to convert natural wastes like, wood, sawdust, etc into energy. The last one is biofuels, which transform organic material into fuels. So, basically, green energy can replace fossil fuelsin all major areas of use including electricity, water and space heating and fuel for motor vehicles. Keywords: Renewable energy; Solar; Wind; Hydro; Geo-Thermal; Biomass; Biofuels.

Assessment of ground water quality at some localities of Agra Navin Kumar Sharma School Of Life Sciences Dr B. R.Ambedkar University,Agra

Abstract The ground water quality is alarmingly getting polluted and unsafe for drinking and domestic use. Studies have shown ground water table is rapidly depleting each year. Keeping in view of the above facts the ground water physico-chemical water sample analysis of ten localities of Agra district had been studied. Physico- chemical parameters of ground water i.e; pH values ranging from 7.7-9.2, total hardness 329-3120 mg/L, Calcium 30.03-1836.50 mg/L, Magnesium 28.55-1432. 65 mg/L, Chloride 478.72-2985.36 mg/L and Temperature 2.6-8.2 degree celsius was obtained. Locality Tajganj had shown maximum values, while locality Kendriya Hindi Sansthan Marg has shown minimum values amongst the localities studied. Hence locality Tajganj ground water quality is highly unsafe for drinking and domestic uses. Other localities had also shown higher values.Physico-chemical parameters of ground water had shown large variations amongst the localities studied. Hence it is strongly recommended to treat ground water before drinking and domestic use.

Key Words: Physico-chemical parameters, localities,Calcium,Magnesium,Total hardness

Smart & Sustainable Cities as Future Paradise: A Review

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Abstract The future is green but to maintain the greener side is in the hands of the population which has inhabited it. If civilization ever needed a role model, the term “City “would be it. Cities that are home to millions of population, cities that serve our basic needs ,cities that provide a variety of amenities ranging from food to occupation and cities that have been a home to the earlier generations, are a home for the present generation and would be inhabitable by the future generations too. The need of the hour is however not limited to keeping up with basic amenities for a city but to make the city competent enough to survive any rough patch of nature. This paper aims to analyze the scientific methods and concepts that deal with the development of Sustainable Cities which goes hand in hand with environment sustainability. The paper reviews sustainable

cities models and the approaches for smart cities. The assumption of urban planning framework designed in such a way so as to create community environments and sustainable places of living has been reviewed. The review paper incorporates data from the most scientific articles and organizations that are a part of “Sustainable Cities” concept. This paper will serve as a foresight for researchers and publishers seeking information for further research in horizons of Sustainable Cities.

Restoration of culture heritage with micro organisms

Garima Gupta, Vidhi Shrivastava , Aravali college of Engineering and management,Faridabad

Culture plays a very important role in world integration process, thus to retain significant diversity & cultural heritage, we must prevent and protect of our monuments from deterioration [1]. It is well known in nature that micro - organisms play important ecological roles both in food & biogeochemical cycles [2]. Microorganisms display wide diversity in enzyme production including lipases, proteases and oxido - reductase as described by metagenomics studies [3,4]. Here our research aims at careful Selection of appropriate (non-pathogenic) with requisite characteristics for removal of undesirable substances (nitrates , sulphates , organic matter from the stones of Humayun Tomb (made with red stone & marble). Here, we will study ways (preventive and bio restorative) approach for prevention of the monuments. Research also aim to the study enzymatic mixtures produced by Bacillus subtilis, D.vulgaris , Pseudomonas stutzeri and their enzymatic reaction on red sand stone of the monument& marble. These micro - organisms are cultured & plated in lab conditions & experimented on red stone& marble for their activity to remove undesired sulphates, nitrates and organic matter. Our study describes a simple strategy for the production and characterization of enzymatic mixtures targeted to degradation of specific substrate and their subsequent use for bio cleaning of historical monuments. KeywordsBio deterioration, bioremediation, micro-organisms, D. vulgaris, Pseudomonas stutzeri, bacillus subtilis

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Effects of Ganesh Idol and Nirmalya Visarjan on the water quality parameters of Tapi River Nandurbar (Maharashtra) India

Dr. Prem Kumar Gautam

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ABSTRACT

India is a rich cultural country in which diverse cultural and religious festivals are organized. Idol is an image of a god which is used as an object of worship. After worshipped, these idols are immersed into water bodies. Idols are constructed by plaster of paris, clay, cloths, small iron rods, bamboo and decorated with different paints such as varnish, water colors etc. which can lead to significant alteration in the water quality after immersion. Ganesh Festival is one of the main festivals celebrated blissfully and joyfully all over India. Lord Ganesha elephant headed god is believed to be God of power and wisdom. In India, people worship Ganesh before initiating any work.

Present investigations were carried out for water pollution of Tapi River is discussed, for this purpose Prakasha was selected as sampling station because large number of Ganesh idols immersed on this Ghat of Tapi River. Water samples were collected at morning hours during pre immersion, during immersion and post immersion periods of Ganesh idols and several parameters like Temperature, pH, Dissolved Oxygen, BOD, Dissolved CO2, Conductivity, Salinity, Alkalinity, TDS, Total Hardness, Chlorides etc. are estimated. Most of the studies found significant changes in the water quality parameters during and after immersions.

Keywords*: Idol Visarjan, Water Pollution, Tapi River Nandurbar*

To Evaluate The Efficacy Of A Fungal Consortium For Degradation Of Azo Dyes

Parul Maurya[1], Priya K Gola[1], Ankur Gupta[1] and Surbhi Mahajan[1]

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Dyes are widely used in the textile, rubber product, paper, printing, color photography, Pharmaceuticals, cosmetics and many other industries. Amongst these, azo dyes represent the largest and most versatile class of synthetic dyes. Textile dyes enhances the quality of human lifestyle on an extent. Nowadays, there are more than 100,000 commercially available dyes with over 7.105 tons of dyestuff produced annually. Textile industries are found in most countries and their number had been increased. A large number of dyes are azo compounds (-N-N-), which are linked by an azo bridge. These dyes are poorly bio-degradable because of their structures and are widely prevalent environmental contaminants that are recalcitrant to biodegradation processes and have detrimental biological effects. Hence, exploring the novel microbial agents and to develop

ecofriendly cost-effective process is pertinent for treatment of textile effluents. The present study was undertaken to isolate and characterize fungi from soil sample and to determine their efficiency for dye degradation.

Key words: fungal consortium. Azo dye, degradation

THREADS OF *PHULKARI*: LEADING TO THRIVING INCOME FOR RURAL WOMEN IN PATIALA

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ABSTRACT

Phulkari literally means flower craft. It is the cultural heritage of Punjab especially of District Patiala. For generations, the rural women of Patiala have been engaged in this form of hand embroidery. But due to lack of effort from any government development agency, these women have suffered exploitation from traders and middle men. *Phulkari* handcraft is also in danger of fading away into oblivion as this traditional hand embroidery has stiff competition from *phulkari* craft practiced through computerized machines. Krishi Vigyan Kendra, Patiala is playing an important role in preserving this art and making it popular by developing novelty items through

value addition. The skill improvement and capacity building of women who got trained in this art from Krishi Vigyan Kendra are the real beneficiaries. In this paper, an attempt is made to study the socio-economic profile and discuss the empowerment indicators of sixty women artisans who had got training from Krishi Vigyan Kendra, Patiala. Socio-economic profile of these women revealed that 53.3% of them were educated up to matriculation and above. Seventy five percent of these women were above 35 years of age. The results revealed that 73.3% of the women artisans had formed Self Help Groups (SHG) while 26.6% worked individually. It was observed that women who formed SHGs reaped the benefits of various developmental schemes initiated by Government of India.

Effects of Ganesh Idol and Nirmalya Visarjan on the water quality parameters of Tapi River Nandurbar (Maharashtra) India

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ABSTRACT

India is a rich cultural country in which diverse cultural and religious festivals are organized. Idol is an image of a god which is used as an object of worship. After worshipped, these idols are immersed into water bodies. Idols are constructed by plaster of paris, clay, cloths, small iron rods, bamboo and decorated with different paints such as varnish, water colors etc. which can lead to significant alteration in the water quality after immersion. Ganesh Festival is one of the main festivals celebrated blissfully and joyfully all over India. Lord Ganesha elephant headed god is

believed to be God of power and wisdom. In India, people worship Ganesh before initiating any work.

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Keywords*: Idol Visarjan, Water Pollution, Tapi River Nandurbar*

Biocontrol of Anthracnose in Sorghum by Antagonistic Fungi

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Sorghum (Abstract: Sorghum bicolor (L) Moench) is an important fodder crop of India, Anthracnose is caused by Colletotrichum graminicola is the most destructive disease of these crop and causes yield loss in the range of 20% to 47% and also known to reduce the quality of the fodder. It is not advisable to use the pesticide in Sorghum because residual toxicity may affect cattle and may also contaminate the cattle milk. Therefore, the biocontrol is safe and economical strategy to control anthracnose in sorghum. In the present study of 5 antagonistic fungi viz, Trichoderma harzianum, T. viride, Gliocladiums virens, Ampelomyces quisqualis and Candida

oleophila were studied against anthracnose disease of sorghum in green house conditions. Practically, all the antagonists reduced disease severity to variable extent. However, Trichoderma harzianum was found most effective in controlling disease severity up to 60% and increasing green fodder yield up to 17%. The effectivity of the other antagonists can be arranged in descending order as T. viride > Candida oleophila > Gliocladiums virens > Ampelomyces quisqualis.

TO DEVELOP ANTIDIABETIC PRINCIPLES ENRICHED GREEN EXTRACT FROM LEAF OIL OF *PIPER BETLE* LINN.

Nitin Agrawal, Head of the Department, Faculty of Pharmacy, Raj Balwant Singh Engineering Technical Campus, Bichpuri, Agra

Abstract

Leaf oil of *Piper betle* Linn. (Piperaceae) is reported to contain antidiabetic principle; Lupeol and Eugenol are two of them. Both the compounds have been reported for biological activities and hence serve as biomarkers. Here we are reporting extraction of *Piper betle* leaf oil, its fractionation and identification by a simple TLC densitometric method for the quantification of eugenol and lupeol in *Piper betle* leaf oil. The contents of eugenol and lupeol in the samples of *Piper betle* leaf oil, as estimated by the proposed method, were found to be 8.321 µg and 634.94 n.g respectively. The developed extract can be further use for antidiabetic formulation development.

Smart Agriculture: a revolutionary idea for farming using traditional methods

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Abstract:

India is an agricultural country and agriculture, rural sides and farmers are the main issues in the development of India. Smart agriculture is mostly used to denote the application of internet of things in agriculture. It is a revolution in the agriculture industry that helps to guide actions required to modify and reorient agricultural system to effectively support the development and guarantee food security during an ever changing climate. Farmers and scientists have used plant selection and breeding technique to improve crop yield years. Genetic engineering technology can improve a plant's insect resistance, drought tolerance, herbicide resistance and disease resistance. This technology gives farmers and additional tool to help increase crop yields. Agricultural technologies could increase global crop yields up to 67%. Increase demand for food due to population and income growth and the impacts of climate change on agriculture will ratchet up the

pressure for increased and more sustainable agricultural production to feed the planet. Technologies and internet of things can improve agriculture by the many ways, such as, monitoring of climate conditions, green house automation, crop management, cattle monitoring and management, end- to- end farm management systems etc. the perfect combination of them can promote development of agricultural modernization realizing smart agriculture and effectively solve the problems of agriculture, rural sides and farmers in India.

Key Words: agriculture, farmers, development, technology.

Histological study of malathion toxicity on Gills of *Clarias batrachus*

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Abstract

Malathion is used in the agricultural field due to their rapid biodegradability and non-persistent nature to control the pest but their broad spectrum of harmful effects extends far beyond the pest. The freshwater fish Clarias batrachus, when exposed to a lethal concentration of commercial grade of malathion 50% EC for a period of 30 days, show histological alterations in Gills. The result showed the histological alteration in Gills. The main objective of this paper is to carry out an empirical study to investigate the effect of lethal concentration of Malathion on Gills of the freshwater fish Clarias batrachus. LC50 value of Malathion was calculated by probit analysis (Finney, 1964) and LC50 for 96 hours is found to be 0.98 ppm. The sub-lethal concentration of

0.2 ppm is prepared by using standard technique (APHA, 1985). In addition, the study aimed to investigate the histological alterations of acute concentrations of Malathion in the gills. The most common histological changes in the gills of fish exposed to Malathion were characterized by thickening of secondary lamellae, hemorrhage at primary lamellae, deformation of the cartilage core, cartilage tissue hypertrophy, blood congestion in the secondary lamellae. Ultimately, the study revealed that the degree of distortion of the gill was in proportion to the duration of exposure and concentration i.e., dose and time-dependent.

For this study, Control Group was being freed from the treatment of Malathion whereas experimental group was treated with lethal concentration Malathion concentration of 0.2 ppm. Histological tissues were collected from both the control group and experimental group at three different time intervals for up to one month and the technique of microtomy is being used for the histological study of the Gills tissues.

KEYWORDS: Clarias batrachus, Gills, Malathion, LC50, Microtomy, Histology.

Restoration Of World heritage site Nandadevi Biosphere reserve, Uttarakhand

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Summary

Uttarakhand is bestowed with unique landscape and diverse flora and fauna. One of the example of world heritage site in the state is the Nanda Biosphere reserve located at the northern part of the state. A World Heritage Site is a place on the globe which has a unique cultural or physical

significance and magnificent universal value to the humanity. It may include a building, a city, a complex, a desert, a forest, an island, a lake, a monument, or a mountain. They are included in World Heritage List to provide it protection for future generations to recognize and enjoy. It is natural world heritage site which encompasses exceptional diverse and rich flora and fauna which are endemic to the area. It is the centre of biodiversity. About 800 species of plants are found, of which 600 species are reported from Valley of flowers which is dominated by family known as Asteraceae. Forty-five medicinal plants are used by local villages and several species, such as Saussurea obvallata. Different faunal surveys in the reserve have resulted in presence of about 18 mammals and about 200 species of birds. The area is under the threat due to continuous human interference. Important one include unorganized camping, Pollution etc. The need of hour is to protect biodiverse rich areas and to some extent the government has taken some of the measures.

Preservation and Conservation Of Archival Materials : A Case Study Of Bangladesh National Museum Archives.

Dr. Shikha Nooruddin

Abstract

Bangladesh is a humid tropical country. Preservation and conservation of archival materials require a meticulous process. The present work was completed in two parts. In the first part, an attempt was made to study the prevailing environmental factors, *viz*., relative humidity (RH), temperature, and rainfall around the deteriorated museum archival specimens. The abundance,

percentage and diversity of air-borne fungi were recorded from air, over 9-month period of regular sampling at three-month intervals. From these data, associative factors were derived depending on percentage of occurrence.

Now-a-days systematic digital preservation and conservation (PAC) technology and methodology created a buzzing restructuring of the archival materials in Bangladesh National Museum (BNM) Archives. In this ongoing challenge there have been many advances and changes within the fields of preservation and conservation archival materials that allow the institution to approach its collections more effectively than ever before. In this circumstance, the second part of the present study attempted to articulate the current PAC status of BNM Archives, compare and correlate the barriers that have hindered the development as a national repository of archives.

Finally, some recommendations have been put forward for consideration. So that it can employ the technologies for proper care of its resources and become able to adopt the latest technologies for the preservation of a manual archive together with the development of a national digital repository of archival materials.

Keywords : Archival Materials, BNM Archives, Environmental Factors, Air-borne Fungi, Preservation, Conservation, Digital Preservation, National Digital Repository.

Biodiversity and Climate Change: Future Estimation

[1]Ambrish Kumar, [2]Anil Kumar, [3]Saroj Singh Chahar

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Abstract

Biodiversity is closely linked to climate and any change in climate affects biodiversity in a variety of ways ranging from mild to severe. Current rate of climate change can bring about large changes in the biodiversity. It has been suggested through studies undertaken in different parts of the world that global warming can lead to extinction of numerous plant species. Projections regarding

damage to biodiversity and its effects presents a dreadful picture of the future. Targets set through 'The Convention on Biological Diversity' have not been achieved. It has also been observed that the situation is far poorer than projected by studies. Although, steps have been taken by the nations around the world, success rate is very low, locally as well as globally.

To understand the actual impact on biodiversity, it is important to find the relationship between biodiversity change and the factors affecting it. Also, it is necessary to find the influence on the functions of ecosystem due to change in biodiversity. The concern of the scientists and environmentalists is to predict and find the effect of climate changes on the distribution of species. Many models and methods have been used to analyse the effects of human activities on biodiversity. The results produced by these methods show variability in their estimation but the common conclusion of all approaches is the terrible state of biodiversity. In this study, we have reviewed the various methods used for measurement of biodiversity change and estimating future biodiversity. An attempt is made in this work to study and develop a method that might estimate the future diversity with least variability.

Keywords: Biodiversity; Climate change; Ecosystem; Species.