



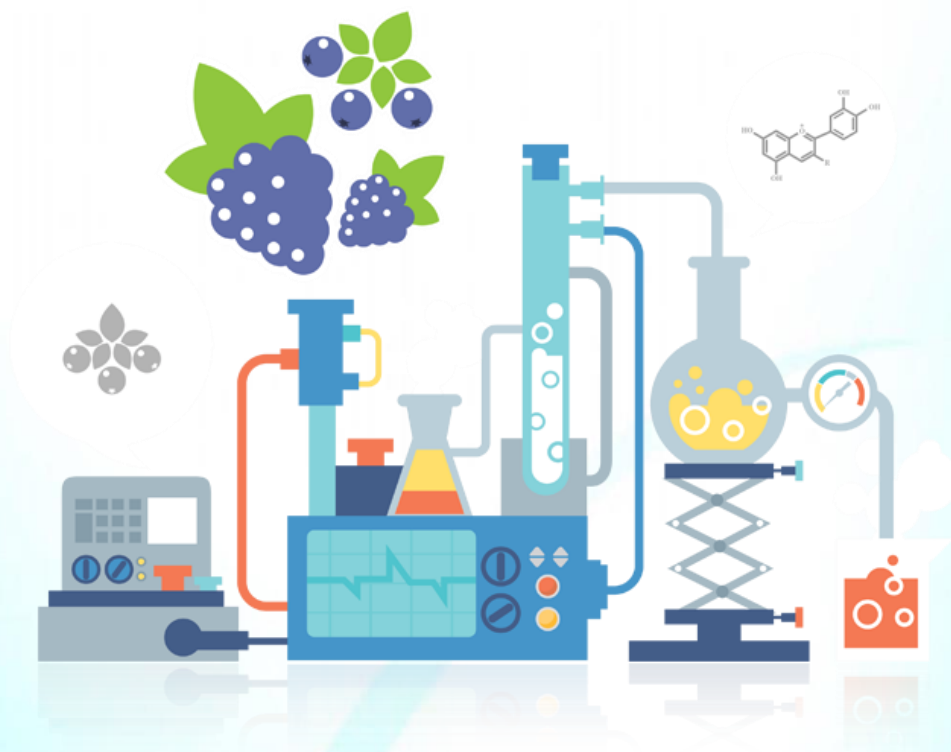
**Bharati Vidyapeeth's**

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**Second National Conference on  
Recent Trends in Pure and Applied Sciences  
(RTPAS-2020)**

**Saturday, 11<sup>th</sup> January 2020**

**Organized by**

**INTERNAL QUALITY ASSURANCE CELL**

**Souvenir**



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# **Souvenir**

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**About the College:**

The College was established on 16<sup>th</sup> September 1985, as Arts, Science and Commerce College, Sangli, and it was renamed as Dr. Patangrao Kadam Mahavidyalaya, Sangli on 8<sup>th</sup> January 1999. The college boasts of a spacious, beautiful. The college is trying to bridge disparity between the rural and urban culture. Recently, UGC, New Delhi grant two Diploma courses under Community College Scheme. College also selected by DST, India to develop Instrumentation facilities under FIST scheme. In 2016-17, our college has been selected as a "Lead College" by Shivaji University, Kolhapur, for two academic years, for the second time, taking into account our academic, social and sports achievements. NAAC committee Re-accredited it with 'B++' grade, in August 2018. We are the proud recipients of the Maharashtra State Award for our substantial work through N.S.S.

**Theme of Conference:**

This conference will provide an excellent forum for sharing knowledge and results in theory, methodology and applications of pure and applied sciences. The conference looks for significant contributions to the applied science in theoretical and practical aspects. The theme of conference is related to Chemistry, Statistics, Physics, Botany, Zoology, Microbiology, Engineering, Mathematics, Computer and Information Sciences, Environmental Sciences, Biomedical Engineering, Nanotechnology, and many other topics in related areas. Conference is expected to provide an opportunity for an interchange of ideas among researchers and practitioners in different fields of Sciences.

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 First National Conference on  
**Recent Trends in Pure and Applied Science**  
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 Organized by  
**Internal Quality Assurance Cell**  
**Saturday, 11<sup>th</sup> January 2020**

**DAY PROGRAMME SCHEDULE**

09:00-10:30 am	Registration, Breakfast & Tea	
10:30-11:00 am	Inaugural Function	At the Hands of: <b>Hon. Prof. (Dr.) S. I. Patil</b> Ex. Pro-VC, Punyashlok Ahilyadevi Holkar Solapur University, Solapur
		In the Chair: <b>Hon. Prin. Dr. H. M. Kadam</b> Regional Director, Bharati Vidyapeeth, Pune
		<b>Hon. Dr. D. G. Kanase</b> Principal, Dr. Patangrao Kadam Mahavidyalaya, Sangli
11:00-12:00 pm	Key Note Address	Speaker: <b>Prof. (Dr.) S. I. Patil</b>
12:00-01:00 pm	Technical Session I	<b>Resource Person: Dr. Kisan Kodam</b> <b>Chairperson: Dr. Gejage</b>
01:00-02:00 pm	<b>Lunch</b>	
02:00-3:00 pm	Technical Session II	<b>Resource Person: Dr. S. A. Jadhav</b> <b>Chairperson: Dr. S. V. Pore</b>
03:00-04:15 pm	Technical Session III	Poster Presentations
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## KEY NOTE

**EFFECT OF NANO-SIZE ON THE PHYSICAL PROPERTIES OF  
MAGNETIC OXIDE SYSTEMS****S. I. Patil**

Dept. of Physics, Savitribai Phule Pune University, Pune – 411007

Nanocrystalline ceramic samples were synthesized by soft chemical route. Samples were sintered at different temperature to vary the grain size of the crystallites. Phase formation and grain size was estimated by XRD and SEM studies respectively. Magnetic parameters were studied by SQUID magnetometer and the valence band spectra were recorded with 56 eV photon energy at RRCAT Indore. The grain size increases with increase in sintering temperature and magnetic moment was found to increase with increase in grain size. The critical size for the hole doped manganites to undergo the transformation from single domain to multidomain was found to be 23 nm. During my presentation, the basics magnetic interactions, transport properties, Valence band spectroscopy will be discussed in detail.



## BIOREMEDIATION

**Kisan M. Kodam**

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Environmental pollution is the introduction of contaminants into the natural environment that causes adverse changes. Water pollution is caused by the discharge of wastewater from commercial and industrial waste into surface waters. Waste disposal, leaching into groundwater, eutrophication and littering are some of the serious issues of environmental contamination. Physicochemical methods are in use which may be ineffective in curbing the pollutants. Bioremediation is the use of microbial metabolism to remove pollutants and can occur on its own or can be triggered on via the addition of nutrients to increase the bioavailability within the medium. Not all contaminants, however, are easily treated by bioremediation using microorganisms. Phytoremediation is useful in these circumstances because natural plants or transgenic plants are able to bio-accumulate these toxins/heavy metals in their above-ground parts, which are then harvested for removal. The heavy metals in the harvested biomass may be further concentrated by incineration or even recycled for industrial use. Landfilling is one of the methods of remediation used mainly for the disposal of inorganic stabilized wastes.

Nowadays, microbial bioremediation is main area of focus for the treatment of different inorganic and organic wastes. Different microorganisms are reported for the degradation of organic pollutants. The metal remediation is transformation of metal from one valence state to another, leading to detoxification. Considering the pollution caused by many pollutants, biotransformation and biodegradation are suitable ways to overcome these problems. The ultimate objective is to control pollution and proceed for sustainable development.

## **HISTORY AND DEVELOPMENT OF PLASTIC: FROM POLYMERS TO POLYMER NANOCOMPOSITES**

Sushilkumar A. Jadhav \*

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Vidyanagar, 416004 Kolhapur, Maharashtra, India.

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Plastics are said to be the most versatile materials on earth. Almost all of the products that we use in our daily lives contain plastics. Some very common examples of plastic materials that we come across each day includes polyethylene, polypropylene, polyvinyl chloride, polystyrene etc. This interesting class of materials have history where several scientists contributed to the development of various types of polymers (plastics). The most significant discoveries in the synthesis, development and commercialization of various polymers happened between 1839 and 1965. Then started the era of polymer nanocomposites. These new class of materials showed extremely improved properties over only polymers and they are used in almost all technological areas ranging from space crafts to biomedical applications. In this communication, the overview of the development of polymers will be discussed. A brief overview of our research on polymers and polymer-grafted hybrid nanomaterials will also be presented.

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# Abstracts

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## 1. DESIGN AND DEVELOPMENT OF HETEROCYCLIC IMINES AS ANTI-INFECTIVE

Shweta Powar \*,Priyanka Patil, Prafulla Choudhari

Department of Pharmaceutical Chemistry

Bharati Vidyapeeth College Of Pharmacy, Kolhapur

### ABSTRACT:

Heterocyclic compounds are very abundant in the natural commonly observed in the various biomolecules like DNA, and proteins. Heterocyclic systems are also exhibited number of important biological activity like antiviral, anticancer, antibacterial, antifungal, anticonvulsant, antiparkinsonian, and anti-inflammatory, which is also proven by the existence of the number of drugs containing heterocyclic systems like metronidazole, imidazoles etc. Nitrogen containing heterocycles are most abundant in all heterocyclic systems, due to their critical structural resemblance with biomolecules, which plays crucial role in growth and survival of the microorganism. In current decade, the scientific fertility shifted their attention towards development of selective and specific antimicrobial agents, which are devoid of side effects, for this reason nitrogen heterocyclic systems plays vital role due to their similarities with many antimicrobial protein and enzymes. Development of heterocyclic imines against conservative pathways, using various computational methodologies may lead to specific and selective anti-infective agents active against all resistant pathogenic organisms. Anti-infective lead compounds which after subsequent optimization for appropriate pharmacokinetic and toxicological profile may yield drug like candidates.

**Key Words:** Heterocyclic imines, Docking, Swiss ADME, QSAR, Bioactivity evaluation, etc



## 2. DESIGN AND DEVELOPMENT OF HETEROCYCLIC SYSTEMS TARGETTING TUBERCULOSIS

Amuta Joshi, Lalita Dahiwade, Sukanya Pote  
Prafulla Choudhari, Manish Bhatia  
Department of Pharmaceutical Chemistry  
Bharati Vidyapeeth College of Pharmacy, Kolhapur

### ABSTRACT

Tuberculosis remains a major cause of mortality worldwide, and due to emergence of multidrug and extensively drug resistant strains making the tuberculosis problem lethal worldwide. The fatty acids and enzymes involved fatty acid biosynthesis can be considered potential drug targets. *M. tuberculosis* possesses specialized fatty acid biosynthesis like FAS -I and FAS -II pathways. In this current research work, rational development of anti-tubercular agent's FAS -II pathway in MTB has been carried out by integrating the computational chemistry protocol. First pocket modeling of the INHA was carried out to identify the shape and size of it and based on these results complimentary structures have been developed which were further scrutinized using virtual analysis and finally by the drug like properties and percent absorption of molecule. The identified potential 30 lead structures were synthesized and screened for antimycobacterial activity using isoniazid as standard. All the designed molecules have shown profound antimycobacterial activity.

### **3. DEVELOPMENT OF CUBIC NANOPARTICULATE SYSTEM FOR CARDIOVASCULAR DRUG DELIVERY**

Sucharita Mohite\*, Nita Sonawale ,

Prafulla Choudhari, Manish Bhatia

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#### **ABSTRACT**

Cubosomes are the cubic nano shaped particles containing bicontinuous phases. They are having honey comb like structure which accounts for their high surface area with identical biphasic systems. Cubosomes are generally composed of the polymer, surfactants with amphiphilic nature. Cubosomes are having particle size in the range 10-500nm in diameter, normally they look like dots, square like slightly spherical in shape. Each particle in the cubosomes corresponds to the size of 5-10 nm pore size containing aqueous cubic phase in lipid water systems. Dispersions of cubosomes are stable thermodynamically and having properties like bioadhesive and biocompatible which makes them a versatile drug delivery system. In current research project perindopril loaded cubosomes are developed for sustained delivery of cardiovascular drug.

#### 4. MANAGEMENT OF OKRA SHOOT AND FRUIT BORER (*EARIAS VETTELLE*) USING AQUEOUS EXTRACT MIXTURE OF NEEM LEAF AND GARLIC

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##### ABSTRACT:

*Earias vettelle* (Okra shoot and fruit borer) is considered to be the major insect pest of the crop, which interferes with its economic production in almost all okra (*Abelmoschus esculentus*) growing countries. The insects attacks fruits and cause 35% damage in harvestable fruit in India. A total of 130 species of *Earias* were so far identified worldwide and found to attack many crops particularly under Malvaceae family. Two species of *Earias* namely *E. vittella* and *E. insulana* attack the shoot and fruit of okra in India. *Earias vettelle* has been identified as the serious pest of okra and cotton which cause direct damage to tender shoots and fruits. Conventionally farmers are using various types of synthetic chemical insecticides to control okra shoot and fruit borer. But due to the unconscious and unjustified use of synthetic pesticides create several problems in agro-ecosystem such as direct toxicity to beneficial insects, fishes, and human being. Plant insecticides are broad spectrum in pest management and many are safe to apply, unique in action and can easily be processed and used. Therefore, in the present study field experiment was carried out to determine the efficacy of aqueous mixture spray of neem leaf and garlic extract (1:1, 10 day interval for 6 times) to control okra shoot and fruit borer infestation. The experiment was compared to synthetic insecticide spray of kinalux (0.2%) and Ecofean (0.2%). The number of infested fruit and total yield was recorded. Treatment of aqueous mixture spray of neem leaf and garlic extract significantly reduce the okra shoot and fruit borer infestation (5%) as compared to standard insecticide kinalux (19%) and Ecofean (16%). From present study it was concluded that aqueous neem and garlic extract is best eco-friendly management to okra shoot and fruit borer.

**Keywords:** Okra, *Earias vettelle*, Neem leaf extract, Kinalux, Ecofean.

## 5. "OPTIMIZATION OF SECRETORY SYSTEM AS TARGET FOR ANTITUBERCULER DERUG DESIGN

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Prafulla Choudhari, Manish Bhatia

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### ABSTRACT

Tuberculosis possess a major threat for the human mankind due to the resistance strain like MDR and XDR TB remains a major cause of morbidity and mortality globally. Secretary systems are the Because of their importance to virulence and bacterial viability, the exported proteins of *M. tuberculosis* and their respective protein export systems can be considered potential drug targets. *M. tuberculosis* possesses specialized protein export systems like SecA2 export pathway and ESX pathways. In this research work rational development of antimycobacterial agent's targeting protein export system has been carried out by integrating the pocket modeling and virtual analysis protocols.

## 6. *FICUS BENGHALENSIS* LEAVES ORIGINATED DYE FOR DYEING OF COTTON USING NATURAL ENZYMES AS A MORDANT

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### ABSTRACT:

Synthetic dyes have some limitations, primarily, their production process requires hazardous chemicals, creating worker safety concerns, they may generate hazardous wastes, and these dyes are not environment friendly. The pollution due to dyes is burning issue now-a-days causing sever water pollution. Hence the alternate sources for synthetic dyes are natural dyes obtained from natural resources. Herein, we report the extraction of natural brown dye from *Ficus benghalensis* (*Banayan tree*) leaves using soxhlet apparatus in aqueous media. The obtained dye has been analyzed for phytochemicals. The dye was applied for dyeing of cotton using pineapple juice, beet juice, and spinach juice as a mordant.



Here, we report the total chemical free natural resources for dyeing of cotton with brown shades.

## 7. EFFECT OF SUB-LETHAL CONCENTRATION OF CHLORANTRANILIPROLE ON LIPID PEROXIDATION IN *CIRRHINUS* *MRIGALA*

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### ABSTRACT:

Oxidative stress is a state of imbalance between free radical production and their degradation by antioxidant systems with increased accumulation of Reactive Oxygen Species (ROS) in the tissues and organs. Many pollutants, toxicants and heavy metals in aquatic environment lead to oxidative stress in aquatic animals. However, oxidative stress production is involved in many fundamental cellular processes such as cellular respiration, biotransformation of xenobiotics, immune processes, lipid biosynthesis and metals metabolism. Increased oxidative stress is associated with damage of molecular components in cells like proteins, nucleic acid, lipids which results into cytotoxicity. Lipid peroxidation is a chain of reaction in which polyunsaturated lipid in cell membrane or other organelles get oxidized by incorporation of oxygen radicals. The most common reactive oxygen containing oxidants are singlet oxygen, hydroxyl radicals, superoxide radicals and hydrogen peroxide. The present study was designed to evaluate the toxicity of sub-lethal concentration of Chlorantraniliprole on lipid Peroxidation in fingerlings of freshwater fish *Cirrhinus mrigala*. Prior to experimental protocol, fingerlings were acclimatized in glass aquarium for 07 days. After acclimatization, fingerlings were exposed to 1/10<sup>th</sup> and 1/20<sup>th</sup> value of LC<sub>50</sub> concentration of Chlorantraniliprole (LC<sub>50</sub> - 0.01ppm) in twenty litre test container for 30 days. In the present study, it was observed that the Lipid Peroxidation in gills, muscle, liver and brain were significantly increased in 1/10<sup>th</sup> and 1/20<sup>th</sup> concentration group as compared to the control group, which in turn confirms that the selected insecticide Chlorantraniliprole, do interferes and causes deteriorating changes in selected test fish *Cirrhinus mrigala*.

**Keywords:** Lipid Peroxidation, Chlorantraniliprole, *Cirrhinus mrigala*, sub-lethal toxicity.

## 8. SYNTHESIS AND CHARACTERIZATIONS OF CU<sub>2</sub>SN<sub>3</sub> (CTS) THIN FILMS PREPARED BY CHEMICAL BATH DEPOSITION METHOD FOR PHOTOVOLTAIC APPLICATION

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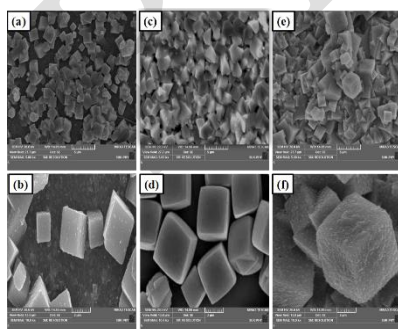
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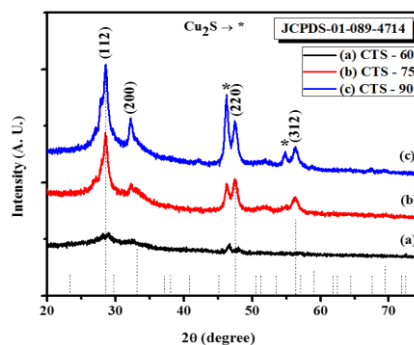
### ABSTRACT:

Cu<sub>2</sub>SnS<sub>3</sub> (CTS) thin films of different thicknesses were prepared onto the glass and the FTO substrate by chemical bath deposition method at the deposition temperature of 80°C. X-ray diffraction pattern reveals that all the thin films prepared are polycrystalline in nature and crystallized in tetragonal structure with preferential orientation along (112) direction. The crystallite size increases from 34.12 nm to 53.30 nm with increase of film thickness. Morphology of the films as observed from the SEM indicates the entire surface of the substrate is covered with sharp edge cubes. EDAX analysis shows that the films prepared are nearly stoichiometric without much deviation. From the optical spectra the nature of transition was found to be allowed and direct. The transmission of the film was found to decrease with increase of film thickness. The band gap energy decreased from 1.4 to 0.9 eV on increasing the film thickness. Photoelectrochemical (PEC) activity increased with increase of deposition time.

**Keywords:** Cu<sub>2</sub>SnS<sub>3</sub>, EDAX, stoichiometric, thin film, photoelectrochemical.



**Fig.** SEM images of CTS thin films at 5000X and 10,000X magnifications for various deposition times.



**Fig.** XRD patterns of CTS thin films for various deposition times.

## 9. GREEN SYNTHESIS OF SILVER NANOPARTICLES BY USING CASHMERE BOUQUET LEAF EXTRACT

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### ABSTRACT:

Cashmere Bouquet, Scientific Name Clerodendrum philippinum is belonging to the family Verbenaceae. The present study reported the use of Cashmere Bouquet leaf extract for the green synthesis of Silver nano particles. In recent years nanotechnology and green chemistry has induced great scientific development in the field of research and global environment protection. Currently, sustainability initiatives that use green chemistry to improve and protect our global environment are focal issues in many fields of research. As a part of green approach, various Nanomaterial's synthesized by using non-toxic chemicals, environmentally benign solvents and renewable materials. In ecofriendly and cost effective biological methods, plants are used widely and efficiently for large scale synthesis of silver and gold nanoparticles. There is a commercial demand for nanoparticle due to their wide applicability in various areas such as electronics, catalysis, chemistry, energy, agriculture and medicine.

**Key Words:** Cashmere Bouquet, Silver Nanoparticles.

### Reference:

Gurunathan S., Park J.H., Han J.W., Kim J.H. Comparative assessment of the apoptotic potential of silver nanoparticles synthesized by *Bacillus tequilensis* and *Calocybe indica* in MDA-MB-231 human breast cancer cells: Targeting p53 for anticancer therapy. Int. J. Nanomed. 2015;10:4203–4222.

George, A. S., ed. 1980-. Flora of Australia

Jaffrey G.H, Bassett J, Denny R.C, Mendham J, Vogel's Textbook of Quantitative Chemical Analysis, 5th ed. ELBS, Longman Group, England;1996; pp. 262.



## 10. CARAMBOLA FRUIT AND CALOTROPIS GIGANTEA LATEX MEDIATED CU NPS FOR ANTIBACTERIAL ACTIVITIES

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Raju Tasgaonkar<sup>1</sup>, Amit Supale<sup>2</sup>, Sandip Sabale<sup>1\*</sup>

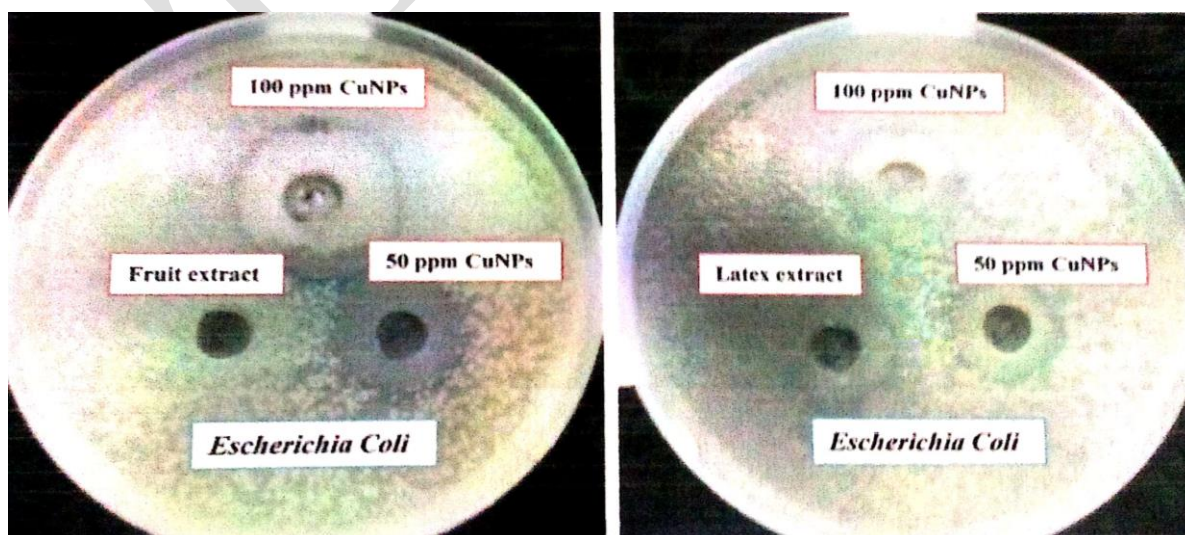
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### ABSTRACT:

*Carambola* fruit extract and *Calotropis gigantean* Latex were used as mediator for the green synthesis of Cu Nanoparticles (NPs). The obtained Cu NPs were analyzed using XRD for structural properties, UV-Vis and FTIR for optical properties. The antibacterial activity was determined for *Escherichia coli* using both the obtained NPs by agar well diffusion method. *Carambola* fruit extract mediated NPs shows higher antibacterial activity as compared to the fruit extract, latex as well as Latex mediated Cu NPs. The Antibacterial activity trend was found to be *Carambola* fruit mediated Cu NPs > Latex mediated Cu NPs > *Calotropis gigantea* Latex > *Carambola* fruit extract.



## 11. MOLECULAR MODELLING FOR HIT IDENTIFICATION FROM NATURAL PRODUCTS TARGETING ESTROGEN RECEPTOR ALPHA (ERA) FOR BREAST CANCER THERAPY

**Authors:** Miss S. A. Mutwalli\*<sup>1</sup>, Mr. D. V. Shanbhag<sup>1</sup>, Dr. Mrs. N. M. Bhatia<sup>1</sup>, Mrs. S.S. Ashtekar<sup>2</sup>

**Affiliations:** <sup>1</sup> Department of Pharmaceutical Quality Assurance.

<sup>2</sup> Department of Pharmaceutical Chemistry.

**Presenting Authors:** 1. Miss Sadaf A. Mutwalli

### ABSTRACT:

In India, the women suffering from breast cancers are mostly estrogen receptor positive. The steroidal hormone estrogen is responsible for stimulating the cancer growth of breast primarily mediated via the steroidal estrogen receptor- $\alpha$  (ER- $\alpha$ ). Hence, targeting the inhibition of estrogen or its production would be an effective therapy for breast cancer treatment.

Literature shows that natural compounds with quinone and steroidal nucleus have potential to treat breast cancer. In this pursuit, 20 bioactive natural compounds were virtually screened containing terpenoids, alkaloids, flavonoids and steroids for ER- $\alpha$  binding affinity. **Methodology:** The ER- $\alpha$  with PDB code 1A52 with 1.5 Å resolution was used for *in silico* studies. The molecular docking studies were performed using Biopredicta module of VLife MDS ver 4.6. The docking scores and protein-ligand interactions of the obtained hits were emulated with the clinically used selective estrogen modulator and ER-antagonist (Fulvestrant) to confirm the affinity towards receptor.

**Result and discussion:** The results revealed that compounds like rhein, delphinidin, thorectandrol A showed good binding affinity similar to selective estrogen receptor modulators having remarkable charge interaction with ASP351. The results signify that these compounds with structural modification could serve as potential leads in the drug discovery process for the treatment of breast cancer.

## 12. ANGIOSPERM DIVERSITY OF LATERITIC PLATEAUS OF KONKAN

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### ABSTRACT:

The low altitude lateritic plateaus are common in Konkan region of Maharashtra. The uniqueness of them is due to lack proper substrate and exhibit extreme climatic conditions like daily thermal variation, constant winds, high evapo-transpiration, low water retention and impermeable soils. Angiosperm diversity in this area is basically edaphically controlled and show adaptation for water accumulation. A floristic survey of such plateaus in konkan revealed the presence of 515 taxa of angiosperms belonging to 233 genera under 93 families have been described from the region. Amongst them polypetalae dominates with respect to the number of genera and species. These plateau vegetations have varied microhabitats that support distinct plant communities. These unique and floral diversity rich ecosystems are in need of immediate conservation priority.

**Key words:** Lateritic plateaus, Angiosperms, Konkan, Maharashtra.

### 13. DEVELOPMENT OF MELT SOLIDIFICATION FOR ENHANCEMENT OF SOLUBILITY AND DISSOLUTION OF MELOXICAM

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#### ABSTRACT:

The objective of the present study was to prepare an amorphous system of BCS class-II drug meloxicam to improve its solubility and dissolution by using the melt solidification techniques. About 40% of new chemical entities do not reach to market due to its poor aqueous solubility. Melt solidification technique is an important process to control the transition from liquid in to solid phase to obtain product in an amorphous form. During the process of heating, some solid gets melted and if quench cooled, instead of crystallizing gets converted to amorphous solid form appearing as that of glass, which improve dissolution and bioavailability of drugs. Physical mixtures of MLX were prepared by melt solidification technique using polymer (soluplus). The solubility and dissolution studies for the meloxicam and batches were conducted in a phosphate buffer (pH 6.8). The fourier transform infra red spectrophotometry,, X-ray diffraction and Differential scanning calorimetry studies were conducted to evaluated pure drug and optimized batch(MS7). Saturation solubility and % drug release showed the improve solubility and dissolution, results suggest that optimized batch (MS7) containing drug and polymer in proportion of 1:4 (MLX:soluplus) was a successful enhancing the solubility and dissolution of MLX. The % crystallinity of MLX in amorphous sample was 18.60%, which indicates significant decrease in crystallinity of MLX in an amorphous system. The best fit model of batch (MS7) was zero order model, showing the %drug release 96.83% and R<sup>2</sup> 0.9904. The present investigation, successfully enhancement solubility and dissolution of MLX by using melt solidification technique.

**KEYWORDS:** Meloxicam; Melt solidification; Dissolution; Solubility; Soluplus

## 14. OPTIMIZATION OF LEAD COMPOUNDS FROM NATURAL SOURCES WITH ORAL ADMINISTRATION SUITABILITY TARGETING BREAST CANCER

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Presenting Author: Miss.Munde Pranoti Kumar- First Year M. Pharmacy,  
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### ABSTRACT:

The Indian traditional system of medicine has potential to cure cancer like diseases. The human epidermal growth factor (HER2/neu) receptor protein target expression plays a vital role in the development of breast cancer and is increased in around 20% of breast cancers. Currently, only two drugs lapatinib and neratinib are approved as HER2 inhibitors. Hence, the present work envisages the screening of chemically diverse set of natural products using computational methods for the HER-2 inhibition, which is the target for the treatment for breast cancer regimen. Using the V-Life MDS platform for computer aided drug design, several hits were identified from the docking score. Subsequently, analysis of the underlying interactions was done and the leads were identified for the HER-2 inhibitor. The QSAR studies were carried out to get the nucleus with HER-2 inhibitory activity. The *in-silico* results were validated by wet-lab experimentation, wherein 2 hits were synthesized and validated for Lipinski Rule of 5. Furthermore, *in-vitro* pharmacokinetics was done to ascertain the results of the *in-silico* studies. Our results indicate the natural product based pyrone ring would be potential and safe HER-2 inhibitors, using a combination of dry-lab and wet-lab experimentation, for therapies targeting breast cancer.

**Keywords:** HER-2 Cancer, In silico studies, in vitro pharmacokinetics, Natural Products

## 15. STUDY OF SYNTHESIS OF EFFECTIVE ALTERNATIVE TO SYNTHETIC INDICATOR FROM JASMINE LEAVES

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### ABSTRACT

Synthetic indicators are having a huge use in laboratories. In day today practicals we use synthetic indicator like Phenolphthalein, methyl orange, methyl red etc. but as they are synthetic chemicals and responsible for pollution. So, the remedy to this problem we have proposed a use of natural indicator to acid base titrations. In this titration we have observed same results as compared with our regular indicators. In present work we report preparation of herbal indicator from Jasminum Officianale leaves. Determination of indicator was confirmed by U.V visible absorption technique. At wavelength 450nm and 500nm volume are observed in acidic in basic medium respectively applicability test with real milk and lime juice which showed distinct color change. We have prepared litmus paper for acid and base test for the liquid solution with same extract and we found impressive result with pink and green color change. The present green indicator is an alternative to the synthesis indicator and litmus paper.

**KEYWORD-** Herbal indicator Jasminum officianale leaves, litmus paper, acid base titration.

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## 16. THE SEASONAL, DAILY AND DIURNAL VARIABILITY IN UV IRRADIANCE USING THE MICROMETER II OZONOMETER AT VILLAGE ATIGRE

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### ABSTRACT

The highly advanced Microtop II ozonometer has been used for the measurement of ozone over Atigre village near to Kolhapur. Micrometer II ozonometer contains the five optical filters (five channels) for solar irradiance measurements at five different wavelengths (305.5 nm, 312.5nm, 320.5nm, 936 nm and 1020 nm). Out of five, sequentially first three filters are used to measure the ultra-violet (UV) irradiance which are coming from the sun. The UV irradiance is measured in the form of voltage by the photodiodes incorporated in the instrument. Atigre village (16.74°N latitude, 74.37°E longitude, 604 meters altitude above sea level) is placed at low latitude stations and it is a unique station for the atmospheric study since it is covered by many small as well as large scale industries and urban activity. In this work, we have studied the variabilities in the UV irradiance and its seasonal, daily and diurnally variability for the considered time periods. The inverse relationship between the ozone and UV irradiance is very well known. The increase in UV irradiance indicates the loss of stratospheric ozone concentration. We observed that the UV irradiance is decreased from monsoon to winter and then after it increased towards the summer season. The apparent position of the sun is also responsible for such variation. We also found that the UV irradiance varies daily representing synoptic variation in the ozone and the effects of the weather conditions on the ozone. We have considered some days in a particular month to represent the diurnal behavior of the UV irradiance. The characteristic bell shaped UV irradiance diurnal structure is obtained which shows the seasonal variation in its amplitude. We have discussed the possible mechanism for variation of UV radiations in the Kolhapur region.

**Keywords :** Microtop II ozonometer, UV radiation, ozone, Diurnal UV

## 17. INTRA-ANNUAL VARIATIONS OF REGIONAL TOTAL COLUMN OZONE, AEROSOL OPTICAL DEPTH, AND WATER VAPOR FROM GROUND-BASED, SATELLITE-BASED AND MODEL-BASED OBSERVATIONS

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### ABSTRACT:

A Microtops II (Microprocessor-based Total Ozone Portable Spectrometer) has been deployed to continuously measure the total column ozone (TCO), precipitable water content (PWC) and aerosol optical thickness (AOT) at Atigre village (16.74° N, 74.37° E, 604 meters above sea level, masl) located on the southeastern slope of Indian western Ghats. The Microtops II ozonometer measurements during the period from September 2017 to June 2018 were analyzed along with the retrieved products of Ozone Monitoring Instrument (OMI) and Moderate Resolution Imaging Spectroradiometer (MODIS) onboard NASA's Terra satellites and also the ERA-interim reanalysis model. We found that the TCO (or PWC) data from the OMI (or MODIS) and the ERA reanalysis model data products are very well matched. The measurements showed strong seasonal variability such that TCO was lowest in the winter season but increased in the summer season, and both PWC and AOT were lowest in the post-monsoon season and increased in the summer season. In continuous ERA-interim reanalysis TCO observations, we found the three types of periodicities in the daily mean TCO as well as PWC (i) The weekly (7 days), (ii) quasi-biweekly (14 to 16 days), (iii) Madden Julian Oscillations (MJO) (30 - 60 days) oscillations. These oscillations are depending on the periodic weather changes in the troposphere. We also observed that the average day to day variability in daily mean TCO observations in the observational period is to be about 1.4%, 1.1%, 2.62% in the Microtops II ozonometer, ERA-interim reanalysis and OMI data respectively. We found the positive correlation in between daily mean AOT and PWC in all seasons (except monsoon), which is maximum in the winter season showing the hygroscopic nature of aerosols. The sources of water vapor and aerosol at our location is also studied using back-trajectory analysis. The distinctive non-negligible diurnal structures in TCO, PWC and AOT are observed for different seasons.

**Keywords:** Microtops II ozonometer, Total column ozone, Precipitable water content, Aerosol optical depth



## 18. ANTICANCER, ANTIBACTERIAL AND HYPERTHERMIA POTENTIAL OF CAFFEINE FUNCTIONALIZED N-HETEROCYCLIC CARBENE SILVER COMPLEX ANCHORED ON MAGNETIC NANOPARTICLES

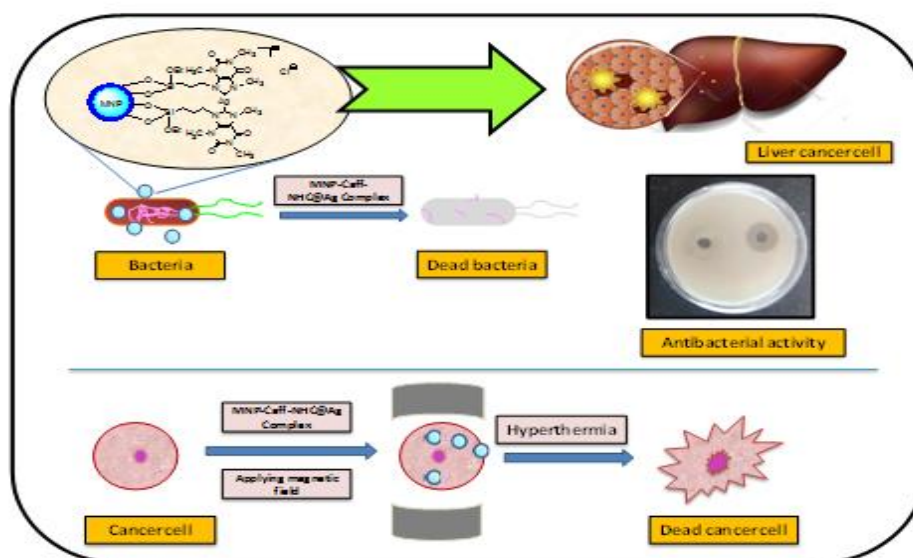
Shivanand Gajare<sup>ab</sup>, Malharrao Thombare<sup>b</sup>, Prakash Bansode<sup>a</sup>, Prdnya Patil<sup>a</sup>,  
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<sup>b</sup>Department of Chemistry, Ajara Mahavidyalaya Ajara, 416505

### ABSTRACT



N-heterocyclic carbene (NHC) Silver complex with caffeine functionalized magnetic nanoparticles (MNP-Caff-NHC@Ag complex) has been prepared by covalent grafting of caffeine on the surface of magnetic nanoparticles followed by metallation with silver (I) acetate. The MNP-Caff-NHC@Ag complex has been characterized by fourier transform infrared (FT-IR), transmission electron microscopy (TEM), thermogravimetric analysis (TGA), energy dispersive X-ray (EDX) analysis, X-ray diffraction (XRD) and vibrating sample magnetometer (VSM) analysis. The MNP-Caff-NHC@Ag complex showed antibacterial inhibitory activities against *Staphylococcus aureus* (NCIM-2654). The complex (**7**) was screened for their *in vitro* anticancer activity against human hepatocellular carcinoma Hep-G2 cells using MTT assay. The complex also plays important role as therapeutic agent in cancer hyperthermia therapy. Treatment of cancer with complex showed hyperthermia involves a rise in temperature up to 47°C which is sufficient to kill the tumor cells.

## 19. SCREENING AND DOCKING STUDY OF DIFFERENT EXTRACTS OF *CELOSIA ARGENTEA* FOR MYCOBACTERIUM TUBERCULOSIS RESISTANCE STRAINS

A.V. Kumbhar, B.V. Mundhe, S. P. Satpute, S. G. Killedar

### ABSTRACT

Tuberculosis is a chronic granulomatous infectious disease which is caused by the bacillus *Mycobacterium tuberculosis* (Mtb). There is an urgent need for the development of newer anti-TB agents as situation is worsened by the presence of multidrug resistant (MDR) strains of *Mycobacterium tuberculosis* and the adverse effects associated with the first-line and second-line anti-TB drugs. The renewed research interest in natural products is the hope of discovering new and novel anti-TB leads. The *Celosia argentea* is a plant having anti-tubercular potential. Hydro-alcoholic and chloroform extracts of seeds of *Celosia argentea* have shown potential anti-TB activity. Chemical constituents reported to be present in seeds of *Celosia argentea* were screened for *in silico* anti-TB activity against possible targets of first line and second line anti-TB drugs in market using Vlife MDS 4.4 software. Chemical entities showing considerable interactions with selected target were optimized and have shown more interactions than selected native ligands. The results of these studies have revealed that identified phytochemical leads would be effective in treatment of drug resistance strains of *Mycobacterium tuberculosis*. Further *in silico* exploration, *in vivo* bioactivity confirmation and pharmacokinetic optimization of identified lead would yield new API in treatment of TB.

**Keywords:** *Mycobacterium tuberculosis*, *in silico* analysis, *Celosia argentea*, multidrug resistant.

## 20. A SYNTHESIS AND CHARACTERISTICS OF MULTINARY $Cd_{1-x-y}Zn_xCu_ySe$ THIN FILMS

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### ABSTRACT

The hunt of novel compounds by fact-finding synthesis and materials chemistry is having a great influence in many technological fields. The deposition of  $Cd_{1-x-y}Zn_xCu_ySe$  ( $0 \leq x = y \leq 0.15$ ) films were done by a facile, inexpensive, industry-oriented modified arrested precipitation technique. The X-ray photoelectron spectroscopy (XPS) result approves the formation of  $Cd_{1-x-y}Zn_xCu_ySe$  thin films and recognized oxidation states of targeted elements as  $Cd^{2+}$ ,  $Cu^{2+}$ ,  $Zn^{2+}$  and  $Se^{2-}$ . From the different advanced AFM parameters, we detected that all the  $Cd_{1-x-y}Zn_xCu_ySe$  samples have platykurtic ( $S_{ku} < 3$ ) surfaces. The EIS measurement showed that for  $x = y = 0.05$  composition, a smaller semicircle in the high-frequency region suggests lower values of  $R_s$  and  $R_{ct}$  which is suitable for augmented device performance.

**Keywords:**  $Cd_{1-x-y}Zn_xCu_ySe$  films; XPS; AFM; EIS.

## 21. EVALUATION OF ANTIBACTERIAL AND ENZYMATIC PROPERTIES OF CHITRAKADI VATI

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2- Faculty of Allied Sciences, KIMS, Deemed To be University, Karad

### ABSTRACT

Chitrakadi Vati is one the polyherbal Ayurvedic formulation used in the treatment of many gastrointestinal disorders, according to Ayurvedic system of medicine. The present work was carried out to evaluate the antibacterial and enzymatic potential of Chitrakadi Vati. The ethanol, methanol, acetone and water extracts of Chitrakadi Vati and its individual ingredients were subjected to evaluation of Antimicrobial properties against some Gram positive and some Gram negative bacteria. Aqueous extracts of Chitrakadi Vati and its individual ingredients were subjected to evaluation of their enzymatic activities viz; Amylolytic, Proteolytic, Lipolytic and Cellulolytic activities by the way of estimating Amylase, Protease, Lipase and Cellulase by rapid qualitative assay methods. Chitrakadi Vati was found to be having both antibacterial and enzymatic properties. The antibacterial potential of the Chitrakadi Vati may be due to the antibacterial properties of Chitraka, Pippali, Ajamoda, Sarjik kshara, Hingu, Barley, Marine salt. The amylolytic properties of the Chitrakadi Vati may be due to the amylolytic properties of Chitraka, Pippali, Sarjika kshara, Hingu, Barley and Black pepper. The proteolytic properties of Chitrakadi Vati may be due to the proteolytic properties of Chitraka, Shunthi, Sarjikkashara, Hingu and Black Pepper. The cellulolytic properties of Chitrakadi Vati may be due to the cellulolytic properties of Pippali and Hingu. The medicinal properties of Chitrakadi Vati may be at least in part, due to its some antimicrobial and enzymatic properties.

**Keywords** : Chitrakadi Vati, Antibacterial, Enzymatic, Amylase, Protease, Lipase, Cellulase

## 22. ANTIGONASTIC ACTIVITY OF GLUCOSINOLATE AGAINST PLANT PATHOGEN

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### ABSTRACT

The presented work is done on antagonistic activity of glucosinolate against different plant pathogen. Glucosinolates are a well studied and highly diverse class of natural plant compounds. They play important roles in plant resistance, rapeseed oil quality, food flavouring, and human health. High content of glucosinolate present in cabbage content of glucosinolate is different in each and every plant. It is present in limited amount.

To check the antagonistic activity of glucosinolate by using *xanthomonas* species for this made extraction of cabbage then made a suspension. Prepare sterile nutrient agar plate by pouring the *xanthomonas* suspension or by spread the *xanthomonas* suspension over nutrient agar plate by spreader. Then made a well on agar plate by using a corkboarar. add extraction of glucosinolate in well, keep the plate in refrigerator for 10min for diffusion then plate was incubated 37 degree Celsius for 24 hours. After incubation observed zone of inhibition and show the antagonistic activity of glucosinolate against *xanthomonas*.

**Key word:** *Xanthomonas* species, cabbage, nutrient agar plates, glucosinolate.

## 23. PRODUCTION OF SILVER NANO-PARTICLE USING *BACILLUS SPECIES* AND ITS MICROBIAL APPLICATIONS

Ayaan Shamshuddin Shaikh<sup>1</sup>, Devyani Anil Pawar<sup>1</sup>, Priyanka Vishnu Patil<sup>1</sup> and Vinay V. Chougule<sup>1</sup>

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### ABSTRACT

The presented work is done on the production of silver nano particles using *Bacillus* species by Green biosynthesis method as microbes as bio factories for Nano particle production and studied its antagonistic property against pathogenic microorganism using Spread plate method by detection zone of inhibition and planned for detailed characterization by U.V visible spectroscopy, Scanning Electron Microscopy(SEM), Transmission Electron Microscopy (TEM) and X-ray diffraction (XRD) for crystalline nature.

**Key words** : Silver nano particales, *Bacillus species*, Antagonistic property.

## 24. STUDY OF CRY PROTEIN ISOLATED FROM DIFFERENT STRAINS OF *BACILLUS THURINGIENSIS*

Blessy Vinay Devraj<sup>1</sup>, Tasleem Shaikh<sup>1</sup> and Vinay V. Chougule<sup>1</sup>

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### ABSTRACT

The titled project is in accordance of the cry protein. *Bacillus thuringiensis* is a gram positive bacterium that produces crystal proteins, named cry proteins which are encoded by the cry genes. The study of the cry protein was studied to see the insecticidal action of cry protein on grape thrips (fly insects) that feed on young grape plants and decreases the yield.

The cry AC toxin was purified from the strains of *Bacillus thuringiensis*. The strain was grown by using LB medium.

BT toxin has to be eaten by insects to cause mortality. The BT toxin dissolves in the high pH insect gut and become active. The toxins then attack the gut cells of the insect, punching holes in the lining. The BT spores spill out of the gut and germinate in the insect causing death within a couple of days. This effect was studied in this research.

**Key words**-Cry protein, grape thrips.

## 25. CONSERVATION OF ELECTRICAL ENERGY BY THE SOURCE OF SOLAR ENERGY

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Taluka: Miraj, Dist: Sangli, Maharashtra, India

### Abstract

A layer of *Bacillus megaterium* was grown on complex media. A cathode and anode was connected to complex media . The selected species was growing on chosen complex media and selected species is Bacillus. Bacillus does absorb solar light and convert it into energy. This energy is transferred through anode and cathode and collected in solar cell. The ability was detected by indicator. The energy prepared by Bacillus when transfer to indicator the indicator goes on. The energy prepared by Bacillus is used as electrical energy as we use energy from solar panel.

**Key words :-** Solar, *Bacillus megaterium* , Complex Nutritional Source



## 26. CHEMICAL KINETIC STUDY OF OXIDATION OF ISONIAZID BY AMMONIUM METAVANADATE AT CONSTANT IONIC STRENGTH BY SPECTROPHOTOMETRY

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### ABSTRACT:

The Chemical kinetic study of oxidation of isoniazid by ammonium metavanadate at constant ionic strength in an acidic media has been studied spectrophotometrically at 390 nm by measuring optical density. The pseudo-first order reaction condition was maintained in which concentration of Isoniazid was in excess in comparison of oxidizing agent ammonium metavanadate. The concentration dependence of Isoniazid, ammonium metavanadate, medium of the reaction, ionic strength, specific ions, temperature, dielectric constant, various solvents on the rate of the oxidation was studied spectrophotometrically. The determination of reactive intermediate or intervention of free radical, stoichiometry of the reaction, end product analysis was done by maintaining standard parameters of the reaction. The order of oxidation reaction with respect to ammonium metavanadate is one. The decrease in rate constant with increase in the concentration of Isoniazid may be attributed to greater stability of the complex due to solvation. The specific rate of the reaction increases with increase in the concentration of acid. The oxidation rate is not influenced by increase in ionic strength as well as changing the various salts. The specific rate of the oxidation of Isoniazid is directly proportional to dielectric constant of the reaction medium. The thermodynamic parameters were obtained by carrying out the reaction at seven different temperatures and the parameters like temperature coefficient (1.97), energy of activation ( $E_a=56.57$  KJmol<sup>-1</sup>), enthalpy of activation ( $\Delta H^\ddagger=53.35$  KJmol<sup>-1</sup>), entropy of activation ( $\Delta S^\ddagger=-135.75$  J K<sup>-1</sup>mol<sup>-1</sup>), & free energy of activation ( $\Delta G^\ddagger = 95.84$  KJmol<sup>-1</sup>). The mol ratio of Isoniazid: ammonium metavanadate is found to be 1:4 and it is independent of concentration of medium of the reaction. The mechanism in terms of the active species of the oxidant and Isoniazid is proposed.

**Keywords:** Isoniazid, Chemical Kinetics, Ionic Strength, Spectrophotometry, Oxidation.

## 27. “STUDY OF YEASTS ISOLATED FROM MARINE ENVIRONMENT FOR LIPASE PRODUCTION”

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### ABSTRACT

In the present study, yeasts isolated from marine water were screened for extracellular lipase producing on Mineral Salt Medium with diesel as the only carbon source. The qualitative assay based on diameter of zone of hydrolysis in millimeter (mm) on Phenol Red Agar medium was measured. The isolates referred with labcode no aajymc 11, aajymc 5, aajymc 6 selected by Qualitative screening were subjected to Quantitative estimation of lipase activity. Titrimetric estimation method indicated the isolate aajymc 11 as best among screened isolates hence was immobilized in calcium alginate. As compared to free cells immobilized cells showed (6.02%) higher lipase activity. The preliminary studies using crude enzyme produced by immobilized cells showed stability over 1-8 % of salt, pH 4 – pH 12 and temperature 10°C to 28 °C.

## **28. PREPARATION OF FILTER BY USING METABOLITES OF ACTINOMYCETES ALONG CATALYST AS METAL OXIDE FOR CONTROLLING HUMAN DISEASES.**

Qamruddin A.khan, Gauri M. Gavali, Pratima S. Jadhav, Akshay R. Khalare & Vinay V. Chaugule

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### **ABSTRACT**

The presented work is done on Actinomycetes which showing antagonistic properties against pathogenic microorganisms. It is identified by , Coverslip culture technique. Isolation of actinomycetal metabolite was done by broth method and observe antagonistic property against pathogenic microorganisms. The main motive of the titled project is to prepare a microbial metabolic filter which will have the capacity to work against the pathogenic microorganisms , in accordance with the Actinomycetal metabolites should be applied and bring use in the filter .

KEY WORD- Actinomycetes, Pathogen & Antagonistic Metabolites

## 29. IDENTIFICATION AND ISOLATION OF AIR MICROBES FROM DIFFERENT LABORATORIES

Mujawar Ayesha Elai, Gouraje Komal Rajendra, Mulla Sufeeya Imtiyaz, Momin Sana Sikandar and Vinay V. Chougule.

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### ABSTRACT:

To study identification of air microbes, air sample was collected from different laboratories like Microbiology, Chemistry and Botany. In air different microbes are present. Some examples of air microorganisms are *Bascillus spp*, *Pseudomonas*, *Streptococcus*, *Staphylococcus*, *Pneumococcus*, etc. This air borne microbes are major cause of respiratory elements of human causing allergies, asthma and pathogenic infections of respiratory track. Therefore identification and isolation of air microbes are important. To carry out study of air microbes used different types of media for their isolation. Morphological and Biochemical characteristics were studied.

**Key Words:** Air Microorganisms, Air borne disease.

### 30. BIOGAS PRODUCTION FROM DOMESTIC WASTE BY ANAROBIC CULTURE.

Runali Yadav<sup>1</sup>, Jyoti Pawar<sup>1</sup>, Sonali Magdum<sup>1</sup>, Akabar Inamdar<sup>1</sup> & Vinay V. Chougule<sup>1</sup>.

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#### ABSTRACT

Biogas production results from anaerobic fermentation of organic material, a metabolic product of *Methanogenic* and *Acidogenic* bacteria. It includes steps such as hydrolysis, acetogenesis, acidogenesis and methanogenesis. Since ancient time biogas is produced from cow dung and used as a source of energy. Cow dung contains prominent starchy material which requires near about 8-10 days for biogas production as it has to be first converted into simpler one, the domestic waste produced in home can also be used as raw material for the production of biogas more effectively than traditionally used cow dung. The food waste collected from house contains vegetable stalk, peels, leftover food etc, which is source of energy. The slurry from active biogas plant is used as inoculum. The gas production starts within 2-3 days and comparatively more in amount than from cow dung, obligate anaerobic parameters were maintained by using chemical agent such as Sodium Thioglycolate. Left over effluent can be used as biofertilizer for plants which increases quality of soil. It can serve as a best alternative to propane butane gas which is used in domestic gas cylinders this can save near about 10-20% of domestic gas consumption.

**KEY WORDS:** Biogas, food waste, sodium thioglycolate, anaerobic condition.

### **31. IDENTIFICATION AND ISOLATION OF UREASE ENZYME PRODUCING MICROORGANISMS FROM SOIL**

Inamdar Saniya Aslam, Satarmaker Tanjum Ibrahim, Dombale Poonam Bapuso, Shingana Pooja  
Tanaji and Vinay V. Chougule

UG and PG Department of Microbiology.

Miraj Mahavidyalaya , Miraj Taluka-miraj, District-Sangli Maharashtra, India

#### **ABSTRACT**

The Urease enzyme producing microorganisms are present in soil. Take the soil sample for the identification of microorganisms which can produce Urease enzyme. For this identification the Urea hydrolysis test was used. The Urease enzyme is extracellular induced enzyme. The Urease enzyme specifically acts on urea. Due to hydrolysis of basic product Ammonia is produced because of Ammonia pH is shifted from acidic to Alkaline. In Alkaline pH phenol red indicator turns to magenta colour. Isolated these microorganisms should be used for Agricultural purpose

**Keyword:** Urease enzyme, Urea, Ammonia, Soil, Phenol red indicator.

## 32.“ISOLATION, CHARACTERIZATION AND EXTRACTION OF PIGMENT FROM BACTERIA.”

**Authors:** - Shubham Chavan, Anuradha A. Jape.

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### ABSTRACT

The recent awareness in human safety and environmental conservation has created fresh enthusiasm for natural sources of pigments. Bacterial pigments have many applications in current day to day life. Identification of new microbial sources, utilization of low cost substrates and optimization of process parameters are the areas under focus towards economical pigment production. The present study aimed at screening and identification of microbial isolates from sewage water, which are having pigment producing ability. Pigment-producing bacterial isolates were screened on nutrient agar for pigment production. The pigments from selected 5 isolates were extracted in ethanol. The antimicrobial activity of selected pigments was determined by disc diffusion technique against clinical isolates of *Staphylococcus aureus*, *Staphylococcus epidermidis*, *Escherichia coli* and NCIM *Staphylococcus aureus* 2079. The ethanol free pigments had inhibitory effect on Gram positive bacteria indicating antibacterial nature of the isolated pigments.

### 33. SCREENING OF SOIL MICROORGANISMS FOR AMYLASE PRODUCTION

Shubhangi Rajkumar Sonavane<sup>1</sup>, Vidya Sadashiv Patil<sup>1</sup>, Vaishnavi Suresh Awati<sup>1</sup> and Vinay V. Chougule<sup>1</sup>

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Maharashtra, India.

#### ABSTRACT

Soil microbes were isolated to determine their potential to produce amylase. 1gm of soil sample was added in sterile 10ml D/W in tube and vigorous shaking was done. The supernatant was used for preparation of dilutions 0.1ml of selected dilution was spread on sterile spreader. The plates were incubated at 37<sup>0</sup>C for 24hrs after incubation apply iodine solution on plate. The colonies is observed for clear zone surrounding them such colonies are marked and their S.R. value were calculated. The microbes were isolated and identified from soils. The organism identified includes Bacillus showed positive result to screening.

**Keywords:** Soil sample, Bacillus, Screening.



### **34. COMMERCIAL PRODUCTION OF L-LYSIN IS AMINO ACID BYMICROBIAL FERMENTATION TECNOLOGY**

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#### **ABSTRACT**

It was one type of amino acid mostly used in different Field provided the source of hydrogen ,it is used in pharmaceutical field .In synthesized by synthetic method by the way of chemical and microbiological .The chemical way can caused side effects of l -lysin in human being.The microbiological way is suitable for pharmaceutical purpose more than chemical way. No.of microorganisms belongs with bacetria and fungi by ability synthesized l lysin .no.of enzyme are envolved in synthetic L-lysin screted by microorganisms . In this study of typical microorganism was screen out for soil sampal for biosynthesis of L- lysene. Required parameters were choosed for biosynthesis purpose in this parameters were optimized in bioreactor. With proper fermentation technology it was need to purified L- lysin for fermenter .The isolated microorganisms were positive for L-lysin production.

**Key words:-**Amino acid , L- Lysin.

## 35. INTENSE GREEN LUMINESCENT $Tb_2O_3$ DOPED LITHIUM ALUMINO-BORATE GLASSES FOR SOLID STATE LIGHTING

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### ABSTRACT:

Rare earth doped glasses are outstanding luminescent materials owing to the occurrence of sharp fluorescence in the ultraviolet (UV), visible and infrared (IR) regions due to their shielding effects of the outer 5s and 5p orbital's on the 4f electrons. These glasses have potential applications due to their emission efficiencies of 4f-4f and 4f-5d electronic transitions in the RE ion. In present study  $Tb_2O_3$  doped  $Li_2O:Al_2O_3:B_2O_3$  glasses (LABT) were synthesized by melt quenching technique. Physical, thermal, structural and spectroscopic properties of prepared glasses by various techniques have been investigated in this work. X-ray Diffraction (XRD) spectroscopy confirms the amorphous nature of glasses. FTIR spectra show various structural groups present in the present glass system. Luminescence spectra exhibit emission bands in the visible region from 400 to 725 nm. The emission peaks are located at 490, 544, 586, 622 and 706 nm attributed to the  $^5D_4 \rightarrow ^7F_{5,4,3 \text{ and } 0}$  transitions of  $Tb^{3+}$  respectively. The CIE chromaticity diagram discloses glass LABT-4 having colour co-ordinates  $x = 0.28$ ,  $y = 0.62$  shows highest emission intensity among all glass samples. The glass LABT-4 lying in green zone of CIE 1931 chromaticity diagram have been found well suited for solid state lightening application.

### 36. STUDY OF CRY PROTEIN AGAINST PATHOGENICITY OF DIFFERENT PATHOGENS

Naqvi Kulsum Manzoormehti , Sanadi Nilofer Salim, Naikwadi Huda Aslam & Vinay V. Chaugule.

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#### ABSTRACT :-

The titled project is in accordance of the cry protein. *Bacillus thuringiensis* is a gram positive bacterium that produce crystal protein ,named as cry protein which are encoded by the cry genes .The study of the cry protein was studied in this research against the pathogenicity of different pathogens.

The cry AC toxin was purified from the strains of *Bacillus thuringiensis*. The strains was grown in LB medium for 3-4 days at 28<sup>0</sup>c . The spores were centrifuged at 10000 rpm for 10min at 4<sup>0</sup>c . The supernatant was decanted and the pellete was washed five times with distilled water.The pellete was then kept in an alkaline buffer at 28<sup>0</sup>c for 1 hr until the crystal protein had dissolved. The solution was then centrifuged at 10000 rpm for 15 min. The supernatant was collected and P<sup>H</sup> was adjusted within the range of 5 to 6 with 1M HCl and stored overnight at 4<sup>0</sup>c to precipitate the toxin. The precipitate was then collected by centrifugation and washed 3 times with distilled water. The cry1AC toxin was lyophilised and dissolved in double distilled water.

**Key word:-**Cry protein , *Bacillus thuringiensis* , Pathogenicity.

### **37. EFFLUENT TREATMENT PLANT FROM WASTE WATER OF MIRAJ.**

Munnisa Maheboob Sayyad, Heena Sharif Sayyad, Barira Khudbuddin Peerzade, Alisha Gous Shaikh & Vinay V. Chougule

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#### **ABSTRACT :**

The present study has been undertaken to evaluate performance of a waste water treatment plant by biological treatment methods . Waste water sample was collected at different stages of treatment units of Miraj and analysis for the major water quality parameters, such as BOD, COD, TSS and TDS of each unit in treating pollutants was calculated. The obtained result were very much useful in identification and rectification of the waste water by using suitable mutagenic agent.

**Keywords :** Waste water treatment plant ,BOD, COD, TSS, Mutagenic agent.

### **38. PATHOGENESITY OF DIFFERENT WATER SAMPLES BY MICROBIAL INDICATOR**

Arati Indrakant Nagave, Harshada Vavasa Awati, Pooja Pradip Kole, Madhuri Dadaso Admuthe and Vinay V. Chougule

Miraj Mahavidyalaya Miraj, Department of Microbiology, Taluka:-Miraj, Dist:-Sangli, Maharashtra, India

#### **ABSTRACT**

Water is very important for living things in this study. Water was collected from different villages like 'Dudhgaon, Kavathepiran, Malwadi, Arab. The water sample is inoculated in macConkeys broth and observed. *E.coli* bacteriaby confirm test (Endo agar plate) because *E. coli* is main inficator of fecal pollution of water. *E.coli* is microbial indicator .Out of four villages the water for two villages are positive for *E. coli*.

**Key words:-** Water, *E. coli*, Confirm test

### **39. MINIMUM INHIBITORY CONCENTRATION OF TURMERIC POWDER**

Ashwini vasant shinde, Shruti meghsham patil, aishwarya annasaheb Chavan, monika Sanjay chogule & Vinay V chougule .

Miraj Mahavidyalaya Miraj Department of Microbiology , Taluka : Miraj, District : Sangli, Maharashtra, India

#### **ABSTRACT**

To evaluate the antibacterial effect of curcumin with MIC. The antibacterial activity of curcumin was evaluated against Escherichia coli using the micro dilution broth. No of nutrient broth test tube were prepared. With different concentration of turmeric powder As 0.5%, 0.6%, 0.7%, 0.8%, 0.9% & 1% The culture of E. Coli was tested against different dilution. The MIC of turmeric was 0.5% The antibacterial effect have been identified in this structure.

**Key words** : Nutrient broth, E. Coli

#### **40. PREPARATION OF AGAR MEDIA BY DIFFERENT SOURCES**

Asifa Sajjan ,Komal Salunkhe,Nahida Muttwali ,Fiza Bagwan &Vinay Chougule  
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India 416410.

##### **ABSTRACT**

To study of nutritional source belong with fruit or leaf was basic aim of the study. prepared a media in which dissolved all ingredients and adjust pH of the media add agar powder and sterilization of the media was done in autoclave after sterilization add extract or fruit in the media and prepared the petriplate of the media and strike soil suspension on the plate and observe the bacteria and some bacteria were observed

**Key words :** nutrition source bacteria

## 41. AMINO ACID PRODUCTION BY ACTINOMYCETES

Ganesh Sarjerao Jadhav, Rohit Suresh Patil, Laxman Khandu Jadhav, shubham Subhash Mali  
& Vinay. V. Chougule  
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### ABSTRACT

The amino acid production from Actinomycetes is used for pharmaceutical industry, Detergent production in Supplement production, in Agriculture, Medical industry, produces by Actinomycetes. Actinomycetes obtain from soil and that Actinomycetes were multiplied. The broth of Glycerol Aspergine in that the Actinomycetes were grow, the prepared Actinomycetes are used for production of amino acid.

**Key Word:-** Actinomycetes, Amino acid, Glycerol, Aspergine.



## 42. STUDY OF PLANT PATHOGENS ISOLATED FROM DISEASED PLANT

Mujawar Gausiya Javed<sup>1</sup>, Bhokare Bushara Mubarak<sup>1</sup>, Jamadar Iramsaba Sikandar<sup>1</sup> & Vinay V. Chougule<sup>1</sup>

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### ABSTRACT

Number of diseased plant are generally accours in the area of Sangli miraj Kupwad municipal corporation. It is going on and increase day by day number of plants are affected by the disease and there causative agent this needs to check out causative agent responsible for the disease. It may be bacterial or fungal. By the purpose brought the leaf of that plant which was having some disease spot. It is bacterial the plant pathogenic bacteria cause many different types symptoms bacterial disease can spread by many ways. So before it spread it is need to make antibiotics on this bacterial disease to stop this disease by spreading .

In this study nutrient agar plate used for isolation of bacterial pathogen wile sabrouds agar plate was used for isolation of fungal pathogen.

The antagonistic action of different elements were tested against these pathogens by seed culture and spread plants techniques and used it for plant vaccination.

**Key word** - Bacterial pathogen, Fungal pathogen, Nutrient agar plate, sabrouds agar plate, Bombax plant , vaccination

### **43. ASPHYXIATION INDUCED CHANGES IN THE BEHAVIOUR AND BIOCHEMICAL ALTERATION IN FINGERLINGS KISSING GOURAMI**

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#### **ABSTRACT:**

Temperature is the dominant physical factor showed influence on all animal lives. Rapid temperature change produce thermal shock or stress. In the present study fingerlings of the kissing gourami were exposed to different temperature range. The behavioural changes and oxygen consumption by fish were observed on 24, 48, 72 and 96 hrs. of exposure under stress conditions of temperature. The notable changes observed which were compared with control set. It is concluded that asphyxia developed in fish facing stress conditions of temperature may alters the normal behavior changes and oxygen consumption in the fishes.

**Keywords** : Asphyxia, stress, physical, oxygen.

**44. EFFECTS OF TRADITIONAL FARMING IN THE CATCHMENT AREA OF KOYANA RIVER FROM THE PLACE PATAN TO MALHARPETH OUT OF THIS THREE VILLEGES ARE PRESENT IN THIS POSTER (MHAVASHI, ADUL, NAVARASTA).**

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**ABSTRACT**

Essentiality of water is most important for farming and Koyana river gives continuous water supply for agriculture. So Patan Tahsil has good traditional agricultural farming and maximum economy is depends on it. The main thrust of the research is to study effects of traditional farming on the production in the catchment area of Koyana river especially from Patan to Malharpeth in Patan Tahsil. We need to study modern agricultural technologies for analysis. Which will improve crop quality and obtain maximum yield. We shall use flame photometry and some scientific techniques to determine effect on N, P, K and Ca values in that area, and we shall collect good results that useful for farmer in the area under investigation.

**Keywords:** - Farming, modern technology, flame photometry.

## 45. ISOLATION OF ENZYMES FOR DAIRY INDUSTRY

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### ABSTRACT

Enzyme produced by microbial sources are biological molecule that known to catalyze biochemical reactions which roles involve in lead to stimulate the necessary chemical reaction as well as to the formation of fermented products. Microbial processed lipase and beta -galactosidase are important examples of such interest in dairy product. Enzymes are one of the relatively important factor that expected to be utilized in large scale in the process of product development. This review focused on the important and application of three major enzymes. That microbial produce which are the great interest in dairy industry and have opposite impact on consumer's health.

**Keywords** -Microbial Enzymes, Protease, Lipase, Beta-galactosidase, Application.

## 46. MOST PROBABLE NUMBER (MPN) OF BACTERIA IN WATER.

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### ABSTRACT

Water borne diseases outbreaks associated with the drinking of unsafe water, containing pathogenic bacteria of fecal origin is common in miraj city. Present study was attempted to detect indicator bacteria from drinking water sample for the presumptive occurrence of fecal contamination that are responsible for health associated problem. Therefore, a laboratory scale qualitative analysis through Most Probable Number (MPN) method was employed the MPN of water method was employed, the MPN of water collect from Idgah area is less than normal water.

**Key Words-** Drinking Water, Most Probable Number (MPN), Microorganism, Fecal Contamination.

## 47. EFFECT OF HEAVY METAL ON PATHOGEN

Sahil Isak Sayyed, Onkar Amar Mane, Suraj Somling Patil, Sanket Bajrang Dhobale,  
Muzzammil Munir Golandaj, Shubham Shiladhar Sutar & Vinay v. Chougule

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Maharashtra, India

### ABSTRACT

The presented work is done on the effect by heavy metal on pathogenic microorganisms most was detected by observing zone of inhibition around the matter. The various heavy metals used as zinc, copper, Aluminum etc. In this stage the zone of inhibition shown by zinc was maximum against pathogenic microorganisms rather than all other metals

**Keyword :**Heavy metal, pathogenic microorganisms , zone of inhibition.

## **48. ISOLATION OF MICROORGANISMS FROM EYE HOSPITAL WASTE**

Poonam kamble, Sayali Suryawanshi, Saylee Sambargikar, Jyoti Suryawanshi and Vinay V Chougule

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### **ABSTRACT**

Different types of eye infections is observed for example, conjunctivitis, style, B lepharitis, Cellulitis, keratitis, corneal ulcer, Trachoma, etc. In the study try to isolate the responsible microbes For these infectious and found easy remedies. Some bacterial cells were isolated in this study which Were responsible for causing disease.

**Key words:-** Eye infection, bacterial cell and media.

## **49. TRANSFORMATION OF TEMPLE WASTE FOR AGRICULTURE**

Pratik Laxman Bamane, Abhishek Ajit Chougule, Kapil Jalindar Mohite, Gajanan S. Kabure and Vinay V. Chougule

Miraj Mahavidyalaya Miraj, Department of Microbiology, Taluka :- Miraj , District :- Sangli, Maharashtra, India.

### **ABSTRACT**

The temple waste collected is used for hormone production and by hormones extracted from different micro-organisms. The microbial hormones like Gibberellic acid, Auxins, Indol three acidic acid ( IAA ) & these hormones are to regulate increases the ability of Corp to resist the insects & get high yields.

**Key words :-** Temple waste, Microbes, Phytohormones.



## **50. PRIMARY SCREENING OF ANTIBIOTIC PRODUCER FROM SOIL SAMPLE.**

Salma Maheboob Pathan, Jahin Arif Kalanagade, Rakhi Rajabhau Barde, & Vinay.V. Chougule.  
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Maharashtra  
India

### **ABSTRACT**

Primary screening is defined as the use of highly selective producer for detection & isolation of desired microorganism from mixed population. From soil there are number of bacterial and fungi which has ability to produce. Different types of antibiotics. By using nutrient agar plate isolated and extracted from Microbial source. The Emergence of antibiotic resistance and need for better broad, spectrum antibiotics, is always in high demand. In the present study. Antibiotic producing bacteria were isolated from a local soil sample.

**Key words :** soil sample, nutrient agar.

## **51. MIC (MINIMUM INHIBITORY CONCENTRATION) OF PARACETAMOL TABLETS OF DIFFERENT MANUFACTURING COMPANIES**

Suryawanshi Aprna Pandurang, Mane Sonalishashikant, Pati Sanchita Satish and Vinay V. Chougule

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District-Sangli, Maharashtra, India**

### **ABSTRACT**

The study focused on investigation of pharmaceutical products viz. Paracetamol. Different manufacturing companies, Cipla and Glaxo make Paracetamol and was chosen for this study. The MIC of Paracetamol was determined by preparing solutions of the Paracetamol with different concentrations in vitro inoculated with pathogen of fever, incubated all these concentrations at 37°C for 24hrs. With proper incubation MIC was studied. The MIC of Glaxo is effective more than Cipla.

## 52. BACTERIAL GAS SENSING PROPERTY

Santosh V. Pawar, Nehal T. Banane, Vinayak P. Patil, Shubham S. kadam & Vinay V. Chougule  
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### ABSTRACT

A thick biofilm of bacterial culture isolated from sewage sample was applied to mixed metal catalyst, MgFe<sub>2</sub>O<sub>4</sub> synthesized by using solution combustion technique. The isolated pure culture of bacterial culture was mixed with prepared mixed metal catalyst. Both preparation processes were convenient, environment-friendly and efficient. The MgFe<sub>2</sub>O<sub>4</sub> materials were characterized by TG /DTA and XRD. The prepared thick biofilm of bacterial culture with MgFe<sub>2</sub>O<sub>4</sub> was measured by exposing to different reducing gases. It was found to act as a sensor and showed various responses to different gases at various operating temperatures with metal catalysts. The prepared biofilm sensor exhibited fast response and good recovery at low concentration.

**Key words :** Biofilm, Bacterial culture, Gas sensors, Mixed metal catalyst.

### 53. IDENTIFICATION OF BACTERIA FROM DAIRY

Siddhi Vhaval, Soundarya Jagatap & Vinay Chougule.  
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Maharashtra,India 416 410.

#### ABSTRACT

The study was undertaken in which investigate the different strains of bacteria and fungi used for fermentation of milk in a order to produce a wide variety of dairy products like curd, yogurt cheese viz. In milk, bacteria are present viz lactobacillus, streptococcus etc. Inspection of dairy has been categorized by three way as postural, small scale crop and livestock farm .The dairy sample was selected for isolation of microorganisms. The sample were striked on nutrient agar plate, plate were incubated at 37° c for 24 hours ,the result we are noted.

**Key Words-** Bacteria, Dairy , Nutrients Agar Plate.

## 54. SCREENING OF ANTIBIOTICS PRODUCER FROM SOIL

Rohit Ashok Sawant, Vaishnavi Vasant Gurav , Gouri vasant kadam , Vanita Mahavir Limbikai,  
Shivani SanjayNaik

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### ABSTRACT

Antibiotic productions by microbes present in soils samples was used for primary screening in this experiment the soil samples were collected from different two states were selected as Maharashtra and Karnataka in primary screening the desired bacteria isolated and collected from soil sample was used detection of antibiotic produces check whether the microorganisms does produces plates and kept at 37 degree celcius for 24 hours. After incubation showed the antibiotic production concluded that same organisms were present in soil which is capable to produce antibiotics.

Keywords:- Antibiotics, Microbes and Soil.

## 55. DIVERSITY OF BUTTERFLY COMMUNITIES IN AMRAI GARDEN SANGLI

Sandip Sargar, Varsha kumbhar and Prabha patil

Bharati Vidyapeeth's Dr. Patangrao Kadam Mahavidyalaya, Sangli.

### ABSTRACT:

Insects occupy a key position in studies focusing a tropical biology community diversity and habitat conservation. In all insects butterflies are ecologically important because they feed on nectar and they are pollinating agents of flowering plants. Butterflies are the useful bio-indicator because they can readily survey and they react rapidly to environmental changes due to their short generation time, high mobility, and specific habitat preferences. Butterflies communities are greatly affected by vegetation changes because most butterfly larvae are strong association with host plant and adult require a specific range of nectar plants.

This study is carried out in the post monsoon season in Amrai garden of Sangli city. In this study we observed 23 species of butterflies belonging to 3 Families viz. Papilionidae, Pieridae and Nymphalidae.

**Key words:** Butterflies, Lepidoptera urban area.

## 56. STUDIES ON SYNTHESIS AND CHARACTERIZATION OF HIERARCHICAL CRYSTALLINE TiO<sub>2</sub> NANOSTRUCTURES BY HYDROTHERMAL ROUTE

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### Abstract:

In this paper we have prepared the hierarchical crystalline TiO<sub>2</sub> nanostructures by single step surfactant free hydrothermal route. Hydrothermal temperature maintained at 180°C for 3 hours with Titanium tetraisopropoxide is used as a Ti precursor and conc HCl is used as peptizer. The morphological, structural, optical and elemental study are carried out by Field emission Scanning electron microscopy (FESEM), X-ray diffraction (XRD), Fourier Transform Infrared Spectroscopy (FT-IR), UV-Vis spectrophotometer and Energy Dispersive X-ray spectroscopy (EDS), respectively. XRD study reveals that the rutile tetragonal phase TiO<sub>2</sub> formation with polycrystalline structure. A Morphological study confirms that the formation of hierarchical compactly packed nanoflowers. Existence of Ti and O elements are confirmed by EDS. Formation of Ti-O bond is confirmed by FT-IR studies. The optical study confirms the indirect band gap energy is 2.80eV.

**Keywords:** hierarchical growth, Rutile TiO<sub>2</sub>, Hydrothermal method.

## 57. APPLICATION OF IMAGE PROCESSING FOR PEST DIAGNOSIS

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### ABSTRACT

Identification of the disease infected grapes plant is the main goal to prevent the losses in the yield and quality of agricultural product and it is very critical for sustainable agriculture. It is very difficult to continuously monitor the grapes crop disease infection manually, as it requires more processing time and scarcity of expertise in farmer to identify diseases. This makes a need of assistance of automatic disease diagnosis process. Researcher has designed an image processing system for Disease diagnosis, comprising of capturing the images, pre-processing, feature extraction, classification, diagnose disease and suggest treatment.

Identification of disease symptoms through images of leaves is an emerging area. Image processing is a system by which image operations are performed to enhance image in order to acquire some useful information. It is a form of signal processing in which the input is an image and the output is image-related object or features. Image processing is one of the fast-growing technologies in current era. The processing of images basically consists of three steps viz; 1) Importing the image by means of image acquisition tools, 2) Analysis and manipulation of the image 3) Output in which the image or report based on image analysis can be altered.

Preprocessing, improvement and display, knowledge extraction are the three general phases for all types of data will undergo while implementing digital technique. The acquired data is usually messy and collected from different sources. To feed it to the ML model (or neural network), it need to standardize and clean up. More often than not, pre-processing is used to conduct steps that reduce the complexity and increase the accuracy of the applied algorithm. One can't write an unique algorithm for each of the condition in which an image is taken, thus, when we acquire an image, one tend to convert it into a generic form that allows a general algorithm to solve it.



In this poster researcher has focused on image processing steps helpful for Disease Diagnosis on grapes crop. The poster will focus on design of a system covering image pre-processing techniques, disease diagnosis method, result as outcome of system, efficiency of the techniques used, conclusion. This is application of computer science techniques for agriculture problem.

**Keywords** : Image Pre-processing, feature extraction, disease diagnosis, machine learning,

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