AZAD MAHAVIDYALAYA, AUSA

3.5.1 Collaborative Activities

1. Collaborative Activities with Arts, Science and Commerce College, Naldurg.

Students' exchange

Students' exchange

Faculty exchange & guest lecture

Student exchange programme between Azad College Ausa &Arts, Science and Commerce College, Naldurg.

Balaghat Shikshan Sanstha, Naldurg's

Arts, Science and Commerce College, Naldurg

Dist. Osmanabad (Maharashtra)

Internal Quality Assurance Cell

Co-ordinator : Dr. Manoj C. Zade (9421356857)
Chairman Prin. Dr. S.S.Shinde (9422655257)

Date : 14/02/2020

Attendance of

Sr. No.	Name of Student	Class	Signature
1)	Pradip Dharmraj Jadhav	B.Sc III	Pradip
2)	Kore Vaibhav Shivram	B.Sc III	Vaibhav
3)	Guddle Mahesh Mahalingappa	B.Sc III	Guddle
4)	Shitre Shyam Bhushan	B.Sc III	Shitre
5)	Chavan Amol Shivaji	B.Sc III	Chavan
6)	Rathod Sagar Narayan	B.Sc III	Sagar
7)	Gire Siddhi Dhananjay	—11—	Siddhi
8)	Kamble Nayavati Maruti	—11—	Nayavati
9)	Swami Pooja Iraayya	B.Sc III	Pooja
10)	Malde Sujata Bimu	B.Sc III	Malde
11)	Salunke Aishwarya Gopinath	B.Sc III	Salunke
12)	Kazi Seema Sirajuddin	B.Sc III 154	Seema
13)	Kazi Nishad A. Gafar	B.Sc III 155	Nishad
14)	Syed Ayesha Afsin Asif	B.Sc III	Ayesha
15)	Sayyed Tahiyya M. Gouse	B.Sc III	Tahiyya
16)	Jadhav Reshma Subhash	—11—	Reshma
17)	Waghmare Rutuja Narayan	—11—	Rutuja
18)	Sayyed Tahesin Gouse	B.Sc I	Tahesin
19)	Patel Afreen Shafi	—11—	Afreen

Balaghat Shikshan Sanstha, Naldurg's

Arts, Science and Commerce College, Naldurg

Dist. Osmanabad (Maharashtra)

Internal Quality Assurance Cell

Co-ordinator : Dr. Manoj C. Zade (9421356857)

Chairman Prin. Dr. S.S.Shinde (9422655257)

Date : 11/02/2020

Attendance of

Sr. No.	Name of Student	Class	Signature
20)	Kashid shruti ~~Kashid~~ Deepak	BSc I st	Shruti
21)	Pawar shital Satish	BSc II nd	Shital
22)	Patil Upasna Vdhav	BSc II nd	Upasna
23)	Kalshetti Mamta Aananda	BSc II nd	Mamta
24)	Nalvade Vaishnavi Santosh	B.Sc II nd	Vaishnavi
25)	Bansode Sakshi Appanna	BSc II nd	Sakshi
26)	Atisha Satish Jadhav	BSc I st	Atisha
27)	Sanjana Shekhar Patil	BSc I st	Sanjana.
28)	waghmare Jyoti Hanmant	B.Sc I	Jyoti
29)	Kayale Asmita Anil	M	Asmita
30)	Bansode minakshi Appanna	M	Minakshi
31)	Halali pamini Tukaram	M	Pamini

Balaghat Shikshan Sanstha,Naldurg's

Estd. 1971

Arts, Science and Commerce Collage, Naldurg

Tq.Tuljapur, Dist.Osmanabad - 413602

Permanently affiliated to Dr. Babasaheb Ambedkar Marathwada University, Aurangabad

Principal : **Dr. Sanjay Korekar** (M.Sc.Ph.D)

(Junior, Senior & Post Graduation)

NAAC - Grade - B

Phone : (0) 02471-246042
Mob : 9422749552
Email : asccollegenaldurg@gmail.com
Website : www.asccollegenaldurg.com

Ref. /2020-21/080

Date 31/01/2020

To,

The Principal,

Azad Mahavidyalaya,

Ausa. -

Sub : Visit of Students to the Laboratory under Student Exchange programme in accordance with MOU

Respected Sir,

As a part of student exchange programme under MOU signed with the department of physics of your college, the students from the department of Physics of our college are visiting your college on 01/02/2020 with an intention to give exposure to the exceptional facilities available in your laboratory of Physics & Electronics.

Please allow them to visit and have interaction with your faculties as well.

Thank You.

PRINCIPAL
Arts, Science & Commerce
College Naldurg
Dist. Osmanbad
Pin - 413 602

Principal

Balaghat Shikshan Sanstha,Naldurg's Estd. 1971

Arts, Science and Commerce Collage, Naldurg

Tq.Tuljapur, Dist.Osmanabad - 413602
Permanently affiliated to Dr. Babasaheb Ambedkar Marathwada University, Aurangabad

Principal : **Dr. Sanjay Korekar** (M.Sc.Ph.D)

(Junior, Senior & Post Graduation)

NAAC - Grade - B

Phone : (0) 02471-246042
Mob - 9422749552
Email : ascnaldurg@gmail.com
Website : www.ascnaldurg.com

Ref. /2020-21/080 Date 31/01/2020

To,

The Principal,

Azad Mahavidyalaya,

Ausa.

Sub : Visit of Students to the Laboratory under Student Exchange programme in accordance with MOU

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Please allow them to visit and have interaction with your faculties as well.

Thank You.

PRINCIPAL
Arts, Science & Commerce
College Naldurg
Dist. Osmanbad
Pin - 413 602

Principal

List of students from A.S.C. college Naldurg.

List of B.Sc-IIIrd Year Students Visited to Dept. Of Physics & Electronics,Azad College Ausa on 01/02/2020 as part of MOU.

Sr. No.	Name Of the Student	Class	Sign
1	Ku.Gire Siddhi Dhananjay	B.Sc-III	
2	Shitre Shyam Bhaskar	B.Sc-III	
3	Jadhav Pradip Dharmraj	B.Sc-III	
4	Ku.Katte Aarti Rajendra	B.Sc-III	
5	Ku.Halde Sujata Biru	B.Sc-III	
6	Ku.Swami Pooja Irayya	B.Sc-III	
7	Ku.Jadhav Reshma subhash	B.Sc-III	
8	Chavan Kiran Tukaram	B.Sc-III	
9	Gudde Mahesh Mahalappa	B.Sc-III	
10	Rathod Sagar Narayan	B.Sc-III	
11	Chavan Amol Shivaji	B.Sc-III	
12	Surwase Ishwar Dattatray	B.Sc-III	

Department of Electronics
Azad College Ausa Dist. Latur

Reg.No. UBSM/36/78 F.312 L.

Hindustani Education Society's

AZAD MAHAVIDYALAYA, AUSA

Afsar Nagar, Ausa Tq.Ausa Dist.Latur

Affiliated To S.R.T.M.University, Nanded, NAAC accredited B+

नोंदणी क्र.UBSM/36/78 F.312 L.

हिन्दुस्थानी एज्युकेशन सोसायटीचे

आझाद महाविद्यालय, औसा

अफसर नगर, औसा ता.औसा जि.लातूर

जा.क्र. AMA/phy muu/02/2020

दिनांक. 1/02/2020

To,

Dr. S. S. Shinde,

Department of Physics,

Arts, Science and Commerce College,

Naldurg, Dist. Osmanabad

Subject : **Letter of Appreciation**

Sir,

Our Department of Physics & Electronics has organized a series of guest lecture for the students of under graduate. As a part of this lecture series, you have been invited to share your valuable thoughts and views on the topic **Transistor Manufacturaring and Mechanism** on date **01/02/2020.**

We are happy to inform you that our students have enjoued your thoughts provoking lecture. We hope to get your kind co-operation in future also.

Thanking you

Received
1/02/2020

O/C

Principal
Azad Mahavidyalaya
Ausa Dist. Latur

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फोन नं.02383- 220093,220270 फॅक्स नं.02383- 220093 इमेल.azadausa@yahoo.com.


Latitude: 17.878553
Longitude: 76.267733
Accuracy: 24.9m
Time: 14-02-2020 12:55
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Guest Lecture
Ujjaini Mahakaleshwar
Madhya Pradesh
India
26°C
79°F

Guest Lecture
on

Department of Physics & Electronics
Guest Lecture
on
Importance of Practicals in Scien

Guest Lecture
on

Structural Study of Zirconium (Zr^{4+}) doped Nickel-Zinc Ferrite.

R. M. Mahindrakar[1], B.U. Patil[2], R. V. Suryawanshi[3]

[1]*Department of Physics, Arts, Science and Commerce College Naldurg, Ta. Tuljapur, Dist. Osmanabad-413602 M.S. India*

*Email:some.rohini@gmail.com, Mobile: 7972566605

[2]*Department of Physics, Kohinoor College Khultabad, Tq. Khultabad, Dist. Aurangabad-431101M.S., India*

[3]*Department of Electronics, Azad Mahavidyalaya Ausa, Ta. Ausa, Dist. Latur- 413520, M.S., India*

***Abstract* — In this paper ,the synthesis and structural properties of Zirconium doped Nickel Zinc ferrite prepared by sol-gel auto combustion technique have been reported. The products of the system were produced by keeping metal nitrate to citrate ratio 1:3 and adding Ammonia maintaining PH at 7. All the samples were heated at 650° for 7 hours. The X-ray diffraction patterns of all the samples are recorded at room temperature. All the Planes are allowed and planes which confirm the formation of single phase cubic spinel structure of $Ni_{0.7-x}Zn_{0.3}Zr_xFe_{2-2x}O_4$. The particle size was calculated using Debye-Scherer's formula using XRD data.**

Key Words: Nickel Zinc Ferrite, Sol-gel, XRD.

I INTRODUCTION

Ferrites are the ferrimagnetic metal oxide materials which possesses the combined properties of magnetic conductor and electrical insulator. They have been comprehensively investigated and being is subject of great interest of their importance in many technological applications such as antenna rods, transformer cores, magnetic data storage, sensors, actuators , catalyst etc. [1, 2]. These electrical and magnetic properties are affected by the type of substituent, microstructure, chemical composition, synthesis methods and synthesis parameters [3, 4, 5].

Spinel ferrites are compounds of iron oxides and some transition metal oxides and their exhibit important electrical and magnetic properties which made them extensively useful in technological and industrial applications such as magnetic storage in microwave devices [6, 7]. Nickel Zinc ferrites are of soft magnetic material. Such type of material are used in filters, deflection yoke, radar observer, antennas, broadband transformers, inductors and also used in noise filters as well as recording heads due to their excellent properties such as high initial permeability and high saturation magnetization [8].

Various substituent of magnetic and nonmagnetic nature like Co,Zn, Al etc. have been incorporated in Nickel ferrite to modify their properties. However to our knowledge

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Research paper of Dr. R. V. SuryawanshiHOD Electronics, Azad Mahavidyalaya, Ausa with Dr. R. M. Mahindrakar HOD Physics, A. S. C. College, Naldurg.

CONTEMPORARY RESEARCH IN INDIA (ISSN 2231-2137): SPECIAL ISSUE : MAY, 2021

IMPACT OF THE COVID-19 PANDEMIC ON EDUCATION

R. V. Suryawanshi[a], R. M. Mahindrakar[b] and G. D. Tingare[a],

[a]Department of Electronics, Azad Mahavidyalaya Ausa, Ta. Ausa, Dist. Latur, M.S. India

[b]Department of Physics, Arts, Science and Commerce College Naldurg, Ta. Tuljapur, Dist. Osmanabad, M. S., India

Abstract: *The COVID-19 pandemic has affected instructional systems over best world, resulting in the closings of faculties, universities and faculties. Governments determined to provisionally shut instructional establishments in an endeavor to scale back the unfold of COVID-19. Several countries presently implementing wide closures and are implementing native closures, impacting nearly fourty seven percent of the world's student population.College closures impact not onlyon students, teachers, and families but have widespread economic and social consequences. College closures in response to the pandemic have affect on social and economic problems, as well as student debt, digital learning, food insecurity, and impoverishment, yet as access to service, health care, and housing, internet, and incapacity services. The impact was additional severe for deprived kids and their families, manufacturing interrupted learning, compromised nutrition, service issues, and eventful economic value to families. Efforts to slow the unfold of COVID-19 through non-pharmaceutical interferences and defensive measures like social-distancing and self-isolation have sponsored the wide unfold nearer of primary, secondary, and tertiary schooling. Mathematical demonstrating has shown that transmission of a pandemic could also be postponed by closing faculties. Influence depends on the contacts kids maintain outside of faculty. College closures appear effective in decreasing cases and deaths, particularly once recognized duly. If college closures occur late vertical to a pandemic, they're less effective and should not have any impact in the least. The reopening of schools and colleges once a amount of closure has resulted in enlarged infection rates. As closings tend to occur at the same time with different interventions like public gathering bans, it will be troublesome to live the precise impact of school, college closings.*

Key Words: *instructional systems, college closures, interrupted learning, incapacity services, Interventions.*

1. Introduction

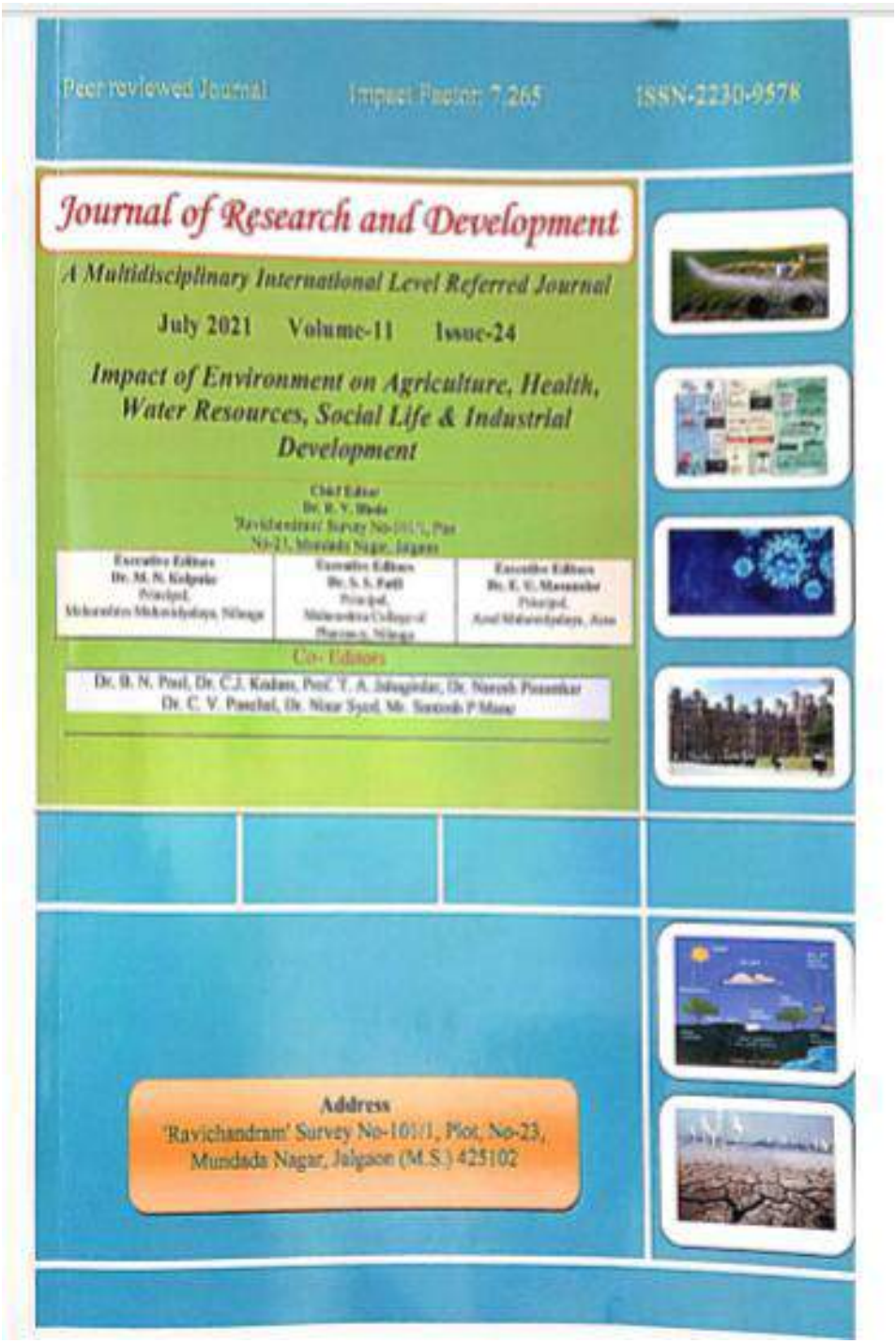
As of twelve January 2021, or so 825 million learners affected due to college closures in response to the pandemic. As per United Nations International Children's Emergency Fund watching, twenty three countries presently implementing nationwide closures and forty measure implementing native closures. One hundred twelve countries' schools presently open(1-5),college closures within the town of Japan etc. were found to possess with success ablated variety of infected students at the height of infection, but closing colleges wasn't found to possess considerably ablated the entire number of infected students/(6). Obligatory college closures and different social distancing measures were related to a twenty ninth to thirty seventh reduction in grippe transmission rates (7). Once there's lowest to moderate community transmission, social distancing methods will be enforced like suspending or cancelling journeys, assemblies, and different huge gatherings like education or choir categories or meals in an exceedingly restaurant, increasing the house between desks, staggering arrival and dismissal times, limiting nonessential guests, and employing a separate health workplace location for youngsters with flu-like symptoms. Once there's substantial transmission within the area people, additionally to social distancing methods, extended college dismissals could also be thought-about (8). Methods i.e. of rotating schedules, feeding lunch within the schoolroom, and utilizing outside places are some ways that to attenuate shut contact. The precautions of face masks, hand sanitizer stations, rearranging school rooms to help physical distancing, and frequent cleanup. Younger kidsare at higher risk of sorrow from long educational significances and organic process insufficiencies while not in-person learning. Instructional establishments revolved to

Research paper of Dr. R. V. Suryawanshi HOD Electronics, Azad Mahavidyalaya, Ausa with Dr. R. M. Mahindrakar HOD Physics, A. S. C. College, Naldurg.

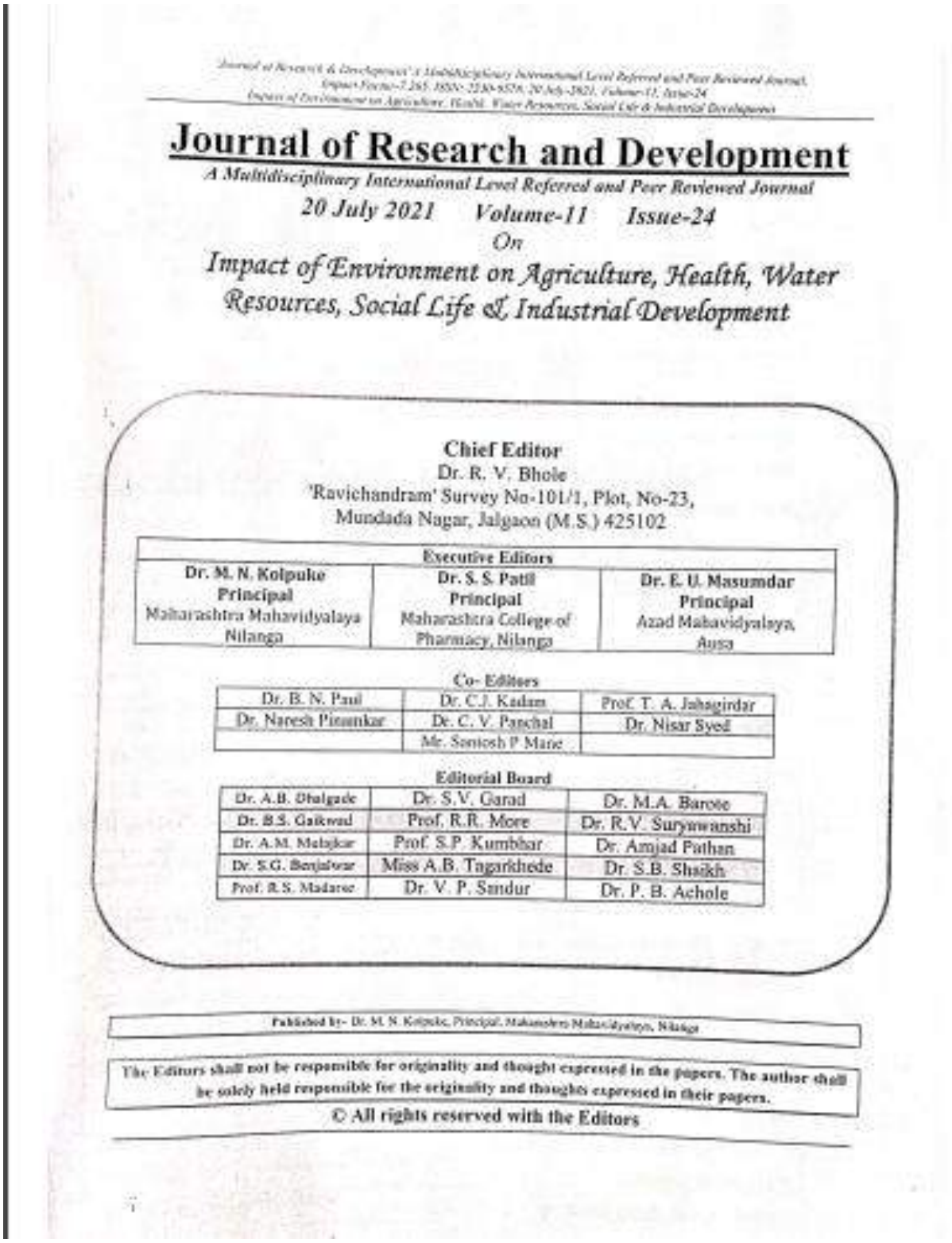
Collaborative activities with RajarshiShahuMahavidyalaya, Latur.

Guest lecture on Nanotechnology by Dr. Abhijit Yadav HOD Physics RajarshiShahuMahavidyalaya, Latur.

Collaborative activities with Maharashtra Mahavidyalaya, Nilanga.



Publication of research journal in collaboration with Maharashtra MahavidyalayaNilanga.



Journal of Research and Development

A Multidisciplinary International Level Referred and Peer Reviewed Journal

20 July 2021 Volume-11 Issue-24

On

Impact of Environment on Agriculture, Health, Water Resources, Social Life & Industrial Development

Published by:- Dr. M. N. Kolpuke, Principal, Maharashtra Mahavidyalaya, Nilanga

Publication of research journal in collaboration with Maharashtra MahavidyalayaNilanga.

19-20

2020

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Held on: 13th February 2020
Organized by: Department of PHYSICS, CHEMISTRY, MATHEMATICS, BOTANY & ZOOLOGY Shivaji Arts, Commerce and Science College Kannad, Dist: Aurangabad (MS)

FTIR and Optical Absorption Studies of $CuSe_2$Thin Film

R. V. Suryawanshi[a], G. D. Tingare, R. M. Mahindrakar[b]

[a]*HOD, Department of Electronics, Azad Mahavidyalaya Ausa, Ta. Ausa, Dist. Latur- 413520, M.S., India*

[b]*Department of Physics, Arts, Science and Commerce College Naldurg, Ta. Tuljapur, Dist. Osmanabad-413602 M.S, India*

** E-mail : *Email: rangrao@gmail.com.*

Abstract

Polycrystalline thin films of $CuInSe_2$ have been prepared by Chemical Spray Pyrolysis technique. The films were obtained onto glass substrates by spraying the precursor solutions of A.R. purity. The preparative parameters, equimolar (0.05 M) concentration solution, 5 ml / min Spray rate, distance between nozzle to substrate (30cm) were optimized to obtain good quality thin films. FTIR and optical absorption studies of $CuSe_2$Thin Film were investigated. The as - deposited films were characterized for physical structure. The morphology of CuSe has been studied with scanning electron microscope (SEM). The optical studies revealed that the absorption coefficient is high (10^{-4} to 10^{-5} cm^{-1}) and the energy gap decreased continuously from 2.13 eV. The electrical transport studies for these films were also examined. The different transport characteristics of the films have also been determined. Thermo power measurements showed that the samples are n-type.

Keywords: Chemical Spray Pyrolysis, $CuSe_2$, thin films, thermo power.

1. Introduction

Substantial progress has been made in polycrystalline thin-film photovoltaics in the last few years [1]. All the thin-film deposition techniques used for the fabrication of high-efficiency CIS cells are costly and require sophisticated instruments. A low-cost process for the deposition of CIS thin-film layers is yet to be developed. This has been identified as one of the important

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Held on: 13th February 2020
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Composition and Morphological properties of the F doped ZnO thin films

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[a] *Thin Film Physics Laboratory, Department of Physics, Rajarshi Shahu Mahavidyalaya - Latur-413512, Maharashtra, India. (emasumdar@yahoo.com)*

[b] *Department of Physics, Azad college, Ausa-413520, Maharashtra, India.*

*(*Corr. Author)(barotema1971@gmail.com)*

Abstract

The simple and cost effective spray pyrolysis technique is used to for the F doped ZnO thin films. The fluorine doped thin films were deposited on preheated amorphous glass substrates at temperature 450°C. The dopant percentage of F is increased, the grain size is increased. The elements of O, Zn and F were found on surface of the FZO film.

Keywords: ZnO thin films. Spray pyrolysis, EDAX

1. Introduction

Doped ZnO films offer a promising alternative to indium tin oxide (ITO) as a transparent conducting front contact layer in CdTe/CdS solar cells. The substitutional doping of ZnO films with group III metals such as Al, B and Ga has been widely reported [1–5], however out-diffusion of the electrically active metal dopants during subsequent cell fabrication procedures can lead to detrimental effects on device performance. It has been shown, using reactive RF sputtering, that ZnO films can instead be doped with fluorine and maintain comparable electrical and optical properties to those of the group III doped films [6-9]. Such films should be better suited for maintaining stability in CdTe/CdS solar cells where the diffusion of F out of the layer during subsequent high temperature fabrication of CdS and CdTe layers is unlikely to cause a significant degradation in device performance [10-12]. Apart from the academic interest, the fluorine doping has several potential advantages over the well-known and successful In-doping, such as low cost and abundance. More over fluorine does not introduce significant perturbation into the conduction band, due to the size compatibility of the oxygen and fluorine atoms [13-14].

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(UGC Care Journal)

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Comparative Study of Physico-Chemical Parameters of Godavari River Water of Paithan and Kaigaon Locality from Aurangabad District (M.S.) India

[1]Srinivas Rao Bhupalwar, [2]Pathan A. V. and [3]Rankhamb S. V.

[1]Department of Zoology, L.B.S. College, Dharmabad, Nanded. (M. S.), India
[2]Department of Zoology, Azad College, Ausa, District Latur, 413520, (M.S.), India.
[3]Department of Zoology, Late Ramesh Warpudkar ACS College, Sonpeth 431516 (M. S.), India
khanamjed777@gmail.com

Abstract

The quality of surface water has progressively worse in India in the past few decades. As a result of the urbanization, growing population, agriculture, and increasing industrialization, the inland water bodies are confronted with the increasing water demand, as facing with extensive anthropogenic emissions of nutrients and sediments, predominantly the river and reservoirs. To resolve this problem, it is necessary to carry out water quality assessment, planning, and management, in which water quality monitoring plays an important role. This comparativestudy aimed at assessing the water quality Godavari river water of Paithan (Downstream) and Kaigaon (Upstream)of Nath Sagar From Aurangabad District (M.S.) India. Godavari river water is used for irrigation, livestock watering and fish production. This study carries using some selected physico-chemical parameters. The result of water samples shows high pH indicates the basic nature of water samples;the obtained values of each parameter were compared with the standard values set by the World Health Organization (WHO). The values of each parameter were found to be within the beyond safe limits set by the WHO. Overall, the water from all the locations was found to be safe as drinking water. However, it is also important to investigate other potential water contaminations such as chemicals and microbial and radiological materials for a longer period of time, including human body fluids, in order to assess the overall water quality of Godavari river water of Paithan and Kaigoan localities.

KEYWORDS: Water Samples, Assessment, Godavari river.

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Issue 2(b) (C) : Introspection, Progress and Strategy for Global Water Resources
Peer Reviewed-Referred Journal

Importance of Water in Life and Affects of Climate on Water

Nanda S. Korde[1]* and Seema S. Korde[2]
[1]Dayanand Science College, Latur
[2]Azad College, Ausa
Email: nandinee.korde0@gmail.com

Abstract:

Water is a mother liquid of all forms of life. Also water protects the tissues, spinal cord and joints. Drinking enough water helps our kidney to work more efficiently and thus preventing kidney stones. Keeping ourselves hydrated also affects our strength, power and endurance. Extreme dehydration can cause seizures and sometimes even death. Thus next to air(oxygen0 is the most essential element to human life. The human body needs water in order to survive. But water is greatly affected by climate change and Climate change impacts will have direct consequences for water security. Climate changes has warmed up water bodies and caused harmful algal blooms to become greater problems in rivers, lakes and oceans in the US and around the world.

Key word: Water, universal solvent, hydrogen bonding, climate change impact

Introduction:

Water is a mother liquid of all forms of life. The essentiality of water for living system is quite evident as without water, there is no life. No other substance on earth is abundant as water. According to experts, water is ranked second only to oxygen as essential for life. We couldn't survive for more than a few days without it. All plants and animals need water to survive because 60% of our body weight is made up of water. Our body loses water through sweating, breathing and digestion so our body uses water in all the cells, organs and tissues to help to maintain the temperature of body constant. Water is very much useful in every aspects of our lives including household consumption, flower, vegetables gardens, restaurants, hospitals, laundries, dry cleaners, golf courses, hostels, car washes, beauty shops, barber shops, gas stations, health clubs, hydroelectric plants, industries, recreations as well as many other business activities.

In nature, water exists in three states such as liquid, solid and gas. It is in dynamic equilibrium between the liquid and gas states at standard temperature and pressure. At room temperature, it is tasteless and odorless liquid, nearly colorless with a slight hint of blue. Many substances dissolve in water and it is commonly referred as the universal solvent.

Importance of water in living system:

Water plays an important role in our body such as:

- Water can dissolve most of the biologically important molecules.
- It is the solvent of life. The life originated in water and adopted to survive only in the presence of water.
- Water act as a medium for the diffusion of molecules in the cell.
- Carbohydrates, product of photosynthesis in plants, are transported through the water.
- Oxygen is released by the hydrolysis of water during photosynthesis.
- Water supports aquatic plants and animals.

2020

Akdisi Multidisciplinary UGC Care Listed, International Research Journal, ISSN: 2320-4079, December
Special Issue, Volume-4 "Multidisciplinary Perspectives on Health, Society, Environment & Sustainable Dev

Efficeiancy and Significance Role of Disaster Management

Dr. P.B .Achole[1] Mr. .Swami R. M[2]

1Associate Prof & Head Department Of Geography,Azad Mahavidyalaya Ausa ,Latur
2 Research scholar and Assistant prof. Dept of Geography ,Walchand College Arts and science solapur.

Abstract:

The general perception of disaster management relates to activities that follow once the disaster strikes. Rescuing people,providing them shelter,food and water, ensuring medical care to those in need and preventing any offshoot of the disaster like an epidemic and many such activities are considered as part of disaster management .these are steps to deal with an emergency or a crisis situation. Managing disasters has become a very important area of study and research in view of the increasing frequency of their occurances.Management by itself is considered to consist while disaster management also includes managing a crisis situation ,planning for disaster preparedness is also an important component. There must be plan in place and communication between agencies must be maintained for ease of operation and avoid confusion. Disaster managers is applied to a person who has responsibility for planning and managing pre-and /or post disaster activities in positions in many different types of agencies. The most prominent disaster maze personal in governmental disaster preparedness agencies, national emergency or relief agencies and department of or ministries. Mitigation is the most important function in bringing disasters under control .the more that can be done to reduce the effects of disaster, the fewer problems a disaster manager will face in the aftermath. Among relief organization vary according to each agencies' roles biases,and capabilities.

Key words : Disaster,Management,Preparedness and Rehabilitation

Objectives:

1. TO study efficiency and different types of role of disaster management.
2. To identify government and private agencies to ensure coordinated action by all agencies of disaster management.
3. To inform and plan about organize disaster preparedness.

Introduction:

The natural disasters can be efficiently handled by quick response of the govern ment also by the help rendered by local organizations. Disasters are many types but a simple and very broad classification is as 'natural' and 'manmade 'natural disasters are many like earthquakes, floods ,volcanic eruption tsunamis and cyclones. With improved technological tools available today. Many natural disasters can be predicted reasonably well advance ,which gives us time to take preventive actions and cope with them effectively. Both types of disasters can have high impact on the environment and ecology of region .Flora and fauna of the affected region of the sea gets destroyed causing great loss of biodiversity.(R .Subramanian,p.n .5)

Methodology:

The present study on efficiency and role of natural disaster management is totally based on secondary data .the has been collected from the various ecological and disaster management related articles , E-Journals ,magazines research papers ,reports, and environmental governmental websites as well as published books of environmental subjects with daily news papers.

Meaning of Disaster management :

1 Desaster management can be defined as the organization and management of resources and responsibilities for dealing with all humanitarian aspects of emergencies, in particular preparedness, response and recovery in order to lessen the impact of disasters.

2 "Disaster management" can be defined as the range of activities designed to maintain control over disaster and emergency situations and to provide a framework for helping at disaster management deals with situations that occur prior to, during, and after the the disaster.(Diwan ,p.n .5)

DISASTER MANAGEMENT INSTITUTIONS:

UN Disaster Management Team (UNDMT)

The un office for coordination of humanitarian affairs has been made responsible by the UN general assembly mandate for all international disaster response .India provides an important platform fort the UNDMT to implement disasters preparedness and mitigation efforts and strengthen governments capacities on disaster risk managements .the primary purpose of the UNDMT is to

2020

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९८२२७९८६५२

दीर्घकालीन उद्दिष्ट ठेऊन लघुउद्योग स्थापन केले जातात आणि जो मागासलेला प्रदेश आहे त्या प्रदेशात दीर्घकालीन नियोजन शासनाद्वारे केले जाते. देशाची अर्थव्यवस्था मजबूत करण्यासाठी लघुउद्योग, अवजड उद्योग विकासाचा पाया घालतात

आणि हे प्रकल्प मोठ्या प्रमाणात विकास करण्यात उपयुक्त ठरतात व सामाजिक समस्यांचे निर्मूलन करता येते. राष्ट्र विकास आर्थिक विकास आणि शेती विकास, उत्पादन वाढ करून औद्योगिक उत्पादने आंतरराष्ट्रीय बाजारपेठेत पाठवता येतात . परिवहन ,रस्ते वाहतूक या घटकाच्या विकासातून आपली उद्दिष्टे साध्य करता येतात. लोकसंख्या वाढीवर नियंत्रण व उपाय योजना करून कृषी क्षेत्र बदलून औद्योगिक विकासाचे क्षेत्र विकेंद्रित करून शिक्षण, आरोग्य क्षेत्रात आमूलाग्र बदल घडून आणण्यासाठी मदत होते . राष्ट्राच्या सुरक्षिततेच्या दृष्टीने प्रयत्न करता येतो पर्यावरणाचे संतुलन राखून पाण्याद्वारे नैसर्गिक उपलब्ध साधन संपत्तीचे संवर्धन करण्यासाठी आणि मानवाच्या मूलभूत गरजा प्राप्त करून त्यांच्यासाठी मानवाचे जीवन उंचावण्यासाठी प्रयत्न करता येतो.

भारतीय प्रदेशात स्वातंत्र्यपूर्व काळातही प्रशासनाला आर्थिक विकासाचे महत्त्व पटले त्यामुळेच स्वदेशी वापर करणे हे किती महत्त्वाचे आहे याची भारतीय स्वातंत्र्यसंग्राम काळातही एक फळी उभी केली गेली. आणि गरीब, मागासलेल्या देशाचा जलद विकास साधावयाचा असेल तर नियोजनाची कास धरली पाहिजे. त्यामुळे प्रादेशिक नियोजनासाठी "राष्ट्रीय नियोजन समिती" निर्माण करण्यात आली. कारण अशा अप्रगत देशात व समाजात प्रागतिक आणि विरोधी घटक एकाच वेळी कार्यप्रवण असतात. प्रागतिक विचार देणारे घटक मानवाचा सर्वांगीण विकास होऊन त्याचा फायदा मानवाला होतो. अधिक सुखी समृद्ध जीवन जगण्यासाठी होतो . या विरोधी घटक मानवी व्यक्तिमत्त्वातील सर्जनशील ऊर्जा नष्ट करून प्रगतीचा मार्ग रोखून धरतात समाज ,व्यक्ती आणि देश यांचा विकास साधण्यासाठी समाजातील विविध प्रगतीच्या घटकांना एकाच दिशेने कार्यशील करण्यासाठी जाणीवपूर्वक प्रयत्न म्हणजेच नियोजन होय. कोणत्याही देशाच्या समस्यांची लढाई विकासाची असेल तर परिस्थिती [illegible] विचारपूर्वक जोरपूर्ण हवा. विरोधी घटकाला व [illegible] समाज प्रगतीच्या मार्गाने, [illegible] देश हित साधेल [illegible] राष्ट्रीय नियोजनाने जलद विकास साधला पाहिजे. सामान्य माणसाच्या नजरेत विकासाचा विचार मांडला पाहिजे. मात्र [illegible] नाही तर शहरात आणि खेड्यात होणारा विकास [illegible]. आणि जो सर्वांगीण विकास साधण्याचा प्रयत्न केला त्याचा प्रयत्न असमर्थ ठरू शकतो.

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I-V CHARACTERISTICS OF CHEMICAL BATH DEPOSITED $Cd_{1-x}Mn_xS$ THIN FILMS

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Abstract

A photoelectrochemical (PEC) solar cell with configuration $Cd_{1-x}Mn_xS$ | 1M (NaOH-Na_2S-S) | C is formed. The photo-voltage increases with polarity negative towards the $Cd_{1-x}Mn_xS$ electrode, showing that $Cd_{1-x}Mn_xS$ is of n-type semiconductor. The current voltage (I-V) characteristics for n- $Cd_{1-x}Mn_xS$ cells with varying composition (x) have been studied. The junction ideality factors under light are calculated from the slope of the plot log I against V, and have values from 1.86 to 1.53 for ITO substrates.

Keywords: PEC, $Cd_{1-x}Mn_xS$ thin films, I-V characteristics, Junction ideality factor.

Introduction

Photoelectrochemical (PEC) cells of various designs have been used to convert solar energy into suitable forms for more efficient use [1-6]. It is an alternative to the commercially available solid state junction photovoltaic cells for the direct conversion of sunlight into electrical energy [7-8]. Photoelectrochemical (PEC) cells have been widely studied for solar as well as non-solar applications. Cadmium chalcogenides in the form of single crystals, sintered pellets and polycrystalline materials have been employed in PEC cells [9]. The efficiency and stability of PEC cells are strongly dependent on the preparation conditions of the photoelectrodes, electrolytes and on experimental conditions [10]. These cells are simple in construction and have the advantage that they can be used for both electrical and chemical energy conversions. The basic requirement of a good PEC cell is thin film photoelectrode of low resistivity and of large grain size [11]. The large grain size leads to reduction of grain boundary area of thin films with important consequences for efficient energy conversion. The low resistivity of the photoelectrode minimizes the series resistance of the PEC cell.

Experimental details

The polysulphide electrolyte solution was prepared in an aqueous medium. The basic ingredients used for the preparation of solution were as follows:

(i) A. R. Grade Sodium sulphide (Na_2S) supplied by S. d. fine Chem. Ltd., Boisar, Mumbai.
(ii) A. R. Grade Sulphur powder (S) supplied by S. d. fine Chem. Ltd., Boisar, Mumbai.
(iii) A. R. Grade Sodium hydroxide (NaOH) supplied by S. d. fine Chem. Ltd., Boisar, Mumbai.

One molar polysulphide electrolyte was made in double distilled water by adding appropriate amounts of sodium hydroxide and sodium sulphide at room temperature. In this solution, sulphur was added and mixture was stirred rigorously. Then mixture was filtered and stored in an air sealed bottle. The colour of the final solution was yellowish pink.

Construction of photoelectrochemical (PEC) solar cell

A photoelectrochemical solar cell was fabricated using a standard three electrode configuration with $Cd_{1-x}Mn_xS$ thin film as an active photoanode of area 1×1 cm^2, graphite as counter electrode and standard calomel electrode (SCE) as a reference electrode. The redox electrolyte used was aqueous 1M polysulphide (NaOH + Na_2S + S). A 100 W tungsten filament lamp was used as a light source. To prevent heating of the cell, water lens was interposed between the lamp and the cell. The distance between the photoanode and counter electrode was kept 0.5 cm.

Results And Discussion

I-V Characteristics of $Cd_{1-x}Mn_xS$ photoanode:

The current voltage (I-V) characteristics for n- $Cd_{1-x}Mn_xS$ cells with varying composition (x) have been studied. When a semiconductor material is kept into the solution of a redox electrolyte, the motion of charge carriers occurs at semiconductor-electrolyte (S/E) interface generating the electric field at the interface.

When this interfaces illuminated by light of photon energy greater than optical gap of semiconductor, excess charge carriers are generated that are separated at the space charge region gives rise to open circuit voltage. This voltage acts as the driving force for further flow of electrons from semiconductor to the counter electrode whereas an electrolyte captures the holes [12-16]. The current transport mechanism through the interface can be defined by Butler-Volmer relation [17] as

$$I = I_0 \left[e^{\frac{(1-\beta)V}{RT}} \right] \left[e^{\frac{\beta V}{RT}} \right] \qquad (1)$$

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DAMA

HISTOCHEMICAL ANALYSIS OF INTESTINES OF *MASTACEMBELLUS ARMATUS* *INFECTED WITH SENGA* SPECIES

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ABSTRACT

The present study deals infection of particular parasite and particular impact on host fish species. Different histochemical reactions showed localization of different chemicals. With the Moreover, the histochemical investigations provide an insight into the natures of various physiological and pathological processes in the gastrointestinal tract occurred due to parasites. It has been observed that the different constituents are stimulated by particular parasite and particular loss in different organs of the digestive system of the fish studied. Histochemical study may provide a valuable with low cost-effective tool for the diagnosis of diseases in histopathology, parasitic investigation and for the researchers in histopathology. The present study includes the histochemical analysis of *Senga* species infected fish intestines in *Mastacembellus armatus*.

KEYWORDS: Histochemical, *Mastacembellus armatus*, *Senga* Species.

INTRODUCTION

India is the mega biodiversity country in the world. Fish are the most important inhabitants of the aquatic ecosystem mainly marine and fresh water and provides the human population cheap and easily digestible proteins. In India it is estimated that about 10 million tons of fishes are required to meet the annual demand of fish proteins as compared to an actual annual production of only 3.5 million tons (Shukla and Upadhyay, 1998). The major component of fish is protein. Fish proteins have a high biological value. It also contains variable quantities of calcium, phosphate, fat and other nutrient important for human health and growth. Fish provides the world's prime source of high-quality protein, 14-16% of the animal protein consumed worldwide; over one billion people consume fish as their primary source of animal protein.

Recent studies indicate that of 750 species of freshwater fish species found in India, a large number of them are familiar only to the local population. Intestinal parasitic helminths have a serious impact on fish health, productivity, quality and quantity of meat. Fish parasitic populations are known to differ due to variation in the environment and host population (Dogiel, 1961). Helminth parasites of fishes are commonly divided into three main groups; cestodes, nematodes and trematodes. Kennedy, (1975) stated that population investigation can provide date for the predication of integrated methods to achieve the regulation of numbers of harmful parasites, because it has been stated that a single method of control have little value, whereas coordinated activities ameliorate the infection.

The genus Senga was established by Dollfus (1934), with its type species *S. bennetti* from Betta splendens at Vincennes, France. *S. ophiocephalina* Tseng (1933), as *Anchistrocephalus ophiocephalina* from *Ophiocephalus argus* at Taiwan. Hiware (1999) reported a new tapeworm *Senga armatusae* n.sp. from freshwater fish, *Mastacembelus armatus* at Pune (M.S.). Jadhav and Shinde (1980) reported new species, *Senga aurangabadensis* from *Mastacembelus armatus*. Johri (1956) reported the cestode *Senga lucknowensis* from *Mastacembelus armatus*. Kadam et al., reported a new cestode *Senga pathanensis* n.sp. (Cestoda:Ptychobothriidae) from *Mastacembelus armatus*.

MATERIALS AND METHOD

Preparation of slides for histochemical studies:

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Analysis of Physico-Chemical water quality to assess environmental degradation of Malapur dam from Jalgaon district (M.S.) India

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ABSTRACT

The quality of surface water has progressively worse in many countries in the past few decades. As a result of the growing population, urbanization, agriculture, and increasing industrialization, the inland water bodies are confronted with the increasing water demand, as facing with extensive anthropogenic emission of nutrients and sediments, predominantly the lakes and reservoirs. To resolve this problem, it is necessary to carry out water quality assessment, planning, and management, in which water quality monitoring plays an important role. This study aimed at assessing the water quality of Malapur Dam from Jalgaon District (M.S) India.

Malapur Dam used for irrigation, livestock watering and fish production. This study carries using some selected physico-chemical parameters. The result of water samples shows high pH indicates the basic nature of water samples, sulphate in the dam water was high, the phosphate content of reservoir water were found high which lead to unpleasant taste and odor. The obtained values of each parameter were compared with the standard values set by the World Health Organization (WHO). The values of each parameter were found to be within the beyond safe limits set by the WHO. Overall, the water from all the locations was found to be not safe as drinking water. However, it is also important to investigate other potential water contaminations such as chemicals and microbial and radiological materials for a longer period of time, including human body fluids, in order to assess the overall water quality of Malapur Dam.

Key words: Water Samples, Environmental Degradation, Malapur Dam.

INTRODUCTION

Water is the most important essential component for the living being. Water plays a significant role in maintaining the human health and welfare. Clean drinking water is now considered as a fundamental right of human beings. Life on the earth is never imaginable without water. Water is one of the most vital irreplaceable elements of a basic human need. It is being used for many purposes such as irrigation, water supply, industrial, drinking, propagation of fish and other aquatic systems and generation of hydro-power plants.

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HISTOCHEMICAL ANALYSIS OF GASTROINTESTINAL MUCOSUBSTANCES OF FRESH WATER FISH *Mastacembelus armatus* INFECTED BY HELMINTH PARASITE *Circumonco bothrium sp.*

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*Supporting Information

ABSTRACT: Present study was conducted to investigate the histochemical changes induced by Circumonco bothrium sp. in the intestine of freshwater fish Mastacembelus armatus. During present investigations the infection of Circumonco bothrium sp. in Mastacembelus armatus with various histochemical reactions showed localization of localization of carbohydrate, protein, lipid and glycogen. During histochemical study intestine infected by cestodes, the numbers of mucous cells those containing acidic or mixed glycoconjugates were significantly higher than those seen on sections from uninfected fish, which is a protective interaction of the host against parasitic infection. In the current study, a highly significant increase in the number of mucous cells was seen within the infected intestines of Mastacembelus armatus when compared to uninfected counterparts.

Keywords: Circumonco bothrium sp., Histochemical, Intestine, Mastacembelus armatus

RESEARCH ARTICLE

INTRODUCTION

The gastrointestinal system is primarily involved in breaking down food for absorption in to the body. It is essentially a muscular tube lined by a mucous membrane which exhibits regional variations reflecting the changing functions of the system from mouth to anus. The Alimentary canal is an organ which is involved in various important physiological functions. It is the primary site of food digestion (absorption) and nutrient uptake.

According to Srivastava (1975) and Chandra et al. (2011), most of the species of helminths in adult stage live in the alimentary canal these parasites have detrimental effects upon fish in more ways than one. Different parts of the cell are biochemically different, they take up specific stains to varying degrees. Histochemical tests are used in an attempt to identify cell and tissue components by virtue of their specific chemical reactions. The alteration in the state of cell constituent can be studied by using histochemical techniques, these techniques helps to analyze not only the localization of carbohydrate, protein, lipid and glycogen etc. but also molecular changes at cellular level. The noteworthy contributions towards the expansion and development of histochemistry are those of Lillie (1954), McManus (1948), Pearse (1968) and Bancroft and Stevens (1992), Sonune (2014). In 2012, Ghosh and Chakraborti observed the histochemistry of the olfactory rosette of Cyprinus carpio.

The present study includes the Histochemical analysis of gastrointestinal mucosubstances of fresh water fish Mastacembelus armatus infected by helminth parasite Circumonco bothrium sp.

MATERIALS AND METHODS

Preparation of slides for histochemical studies:

For histochemical analysis, small fragments from the anterior, middle and posterior parts of infected intestine were used. The infected intestine and normal were cut into small pieces and were fixed in Bouin's fluid. After 48 hours, washed several times with water, dehydrated in graded series of alcohols, cleared in Cedar wood oil and xylene, blocks were made in cavity blocks by usual method. Thick sections were cut with a rotary microtome at 4- 5 micron thick. After removing the wax by xylene, hydration was carried out, dehydrated, cleared in clove oil and xylene and mounted permanently in Canada balsam. Sections were stained with various histochemical staining methods. Best slides or sections were selected and observed under the microscope for histochemical study. Photographs were taken with digital camera Nikon Coolpix L24.

Methods used for histochemical tests were:

1. Periodic Acid-Schiff (PAS) (McManus, 1948)
2. Alpha-amilase-PAS (McManus, 1948)
3. Alcian blue pH 2.5 (Martoja and Martoja-Pierson, 1970)
4. Alcian blue pH 0.4 (Martoja and Martoja-Pierson, 1970)

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Distribution Of Helminth Parasites In Intestines And Their Seasonal Rate Of Infestation In Freshwater Fishes From Latur District, (M.S.) India

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Abstract

The present study deals with the seasonal prevalence of parasitic helminths in freshwater fishes from Latur District (M. S.) India. The survey was conducted during annual cycle 2012 to 2013 from different sampling station to estimate the seasonal prevalence of parasitic helminths. For this study 876 freshwater fishes were randomly selected. Fish samples were collected from different localities of Latur District, Maharashtra State, namely Ausa, Nilanga, Ahemadpur, Deoni, Jalkot, Renapur, Latur, Shirur-Anantpal, Chakur and Udgir.

The seasonal prevalence percentage of parasitic helminths was highest during summer (29.45%), followed by winter (20.00%) and lowest during rainy (9.89%). There was considerable difference found in the seasonal prevalence. The present study is concentrated only on the prevalence of cestode and nematode. The major helminths parasites were found in the fishes include Senga spp., Procamallanus sp., Circumoncobothrium sp. and Gangesia sp. The results of the parasitic helminth are discussed in relation to seasonal variation and found highest during summer followed by rainy and lowest during winter season.

Keywords: *Survey, Freshwater fishes, Gastrointestinal helminths, Seasonal prevalence*

Introduction

India is the mega biodiversity country in the world. Fish are the most important inhabitants of the aquatic ecosystem mainly marine and fresh water and provides the human population cheap and easily digestible proteins. In India it is estimated that about 10 million tons of fishes are required to meet the annual demand of fish proteins as compared to an actual annual production of only 3.5 million tons (Shukla and Upadhyay, 1998). The major component of fish is protein. Fish proteins have a high biological value. It also contains variable quantities of calcium, phosphate, fat and other nutrient important for human health and growth. Fish provides the world's prime source of high quality protein, 14-16% of the animal protein consumed worldwide; over one billion people consume fish as their primary source of animal protein.

Recent studies indicate that of 750 species of freshwater fish species found in India, a large number of them are familiar only to the local population. These species are better known to the rural population due to the importance they attach to these species as a vital and affordable source of nutrition. Intestinal parasitic helminths have a serious impact on fish health, productivity, quality and quantity of meat. Fish parasitic populations are known to differ due to variation in the environment and host population (Dogiel, 1961). Helminth parasites of fishes are commonly divided into three main groups; cestodes, nematodes and trematodes. Kennedy, (1975) stated that population investigation can provide date for the predication of integrated methods to achieve the regulation of numbers of harmful parasites, because it has been stated that a single method of control have little value, where as co-ordicated activities ameliorate the infection.

Material And Method

Examination of fish for collection of parasites:

Examination of intestinal parasites was carried out by using the method described by Hassan *et al.*, (2010). After the separating and counting the population of different helminth parasites from different freshwater fishes the parasites were preserved in separate bottles. Some of these were used for the taxonomic study.

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16. Advance Technologies in Fisheries and Aquaculture

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Abstract

The demand for fish is ever-increasing, particularly as its health benefits continue to gain acclaim with consumers, who, overall, are becoming more interested in the nutritional advantages of their food choices. While the production of fish as a primary protein source is considerably more efficient than other protein sources by as much as six and four times respectively, on a feed conversion basis, much can still be done to improve production and efficiency in aquaculture. Aquaculture must have to move towards intensification to meet the rising demand, to contribute more effectively to the reduction of poverty and malnutrition, and to become ecologically more sustainable. New technologies will make it possible for sustainable aquaculture to become the new global standard. In order to improve the socioeconomic condition of the farmers, this expansion of aquaculture production needs to take place in a sustainable way through the applications of new farming technologies viz. Integrated fish farming, Cage and pen culture, Improved strain, Pellet feeding, FRP hatchery, Monosex culture, Genetically improved strains, Hypophysation Techniques, Eye stalk ablation, Application of Probiotics in Aquaculture, Live Fish Feed Technologies, Biotechnology, Bioremediation, Sea ranching etc.

Keywords: Advanced Technologies, Aquaculture, Fisheries, Inland, Marine

1.0 Introduction

Aquaculture, also known as aqua farming, is believed to have first begun around 4,000 years ago in China with the production of carp and is now the fastest-growing animal food

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INTRODUCTION: -

Wildlife is a precious gift of God to this planet. The term 'wildlife' not only caters to wild animals but also takes into account all undomesticated life forms including birds, insects, plants, fungi and even microscopic organisms. For maintaining a healthy ecological balance on this earth, animals, plants and marine species are as important as humans are. Each organism on this earth has a unique place in food chain that helps contribute to the ecosystem in its own special way. However, sadly today, many of the animals and birds are being endangered. The natural habitats of animals and plants are being destroyed for land development and farming by humans. Poaching and hunting of animals for fur, jewellery, meat and leather are other great factors contributing to wildlife extinction. If soon, no stringent steps are taken to save wildlife, it would not be long when they will find a place only on the list of extinct species. In addition, that would not be all, the extinction of wildlife species will certainly have a fatal impact on human race as well. So, for us as humans, it becomes a great responsibility to save the wildlife, our planet and most impoetantly, our own selves.

The goal of wildlife conservation is to ensure that nature will be around for future generations to enjoy and to recognize the importance of wildlife and wilderness for humans and other species alike. That, Wildlife is part of nature that maintains equally distribution of food instead of over use of food by one human

Wildlife traditionally refers to undomesticated animal species but has come to include all organisms that grow or live wind in an area without being introduced by human

A wild animal is an animal that is well wild. This means that it isn't and it lives an its own without any help from people. A wild animal finds it own food shelter, water and all its other needs in a specific natural habitat.

MEANING OF WILDLIF: -

The wild a domesticated animals living in their natural habitats like forest, Grasslands, deserts etc. are usually called wildlife.

However scientifically wildlife includes both the naturally occruing animals as well as the plans

DEFINITION OF WILDLIFE PROTECTION: -

An area land and sea especially dedicated to the protection. An maintaince of biological diversity a natural an associated cultural, resources and managed through legal or other effective means

THE WILDLIFE PROTECTION ACT: -

The wildlife protection ACT 1972 is an Act of the Parliament of India enacted for protection of Plants and animal species before 1972. India only had 5 designated National Parts

Among there reforms the act established schedules of Protected animals and plants. Species hunting or harvesting these species was largely outlawed.

The act provides for the protection of wild animals, birds, plants for matters connected therewith or ancillary or incidental there to

WILD LIFE PROTECTED AREA IN INDIA

National Parlc -

These areas are given the highest degree of protection with virtually no human activity barring passage management work and tourism being allowed by law. WLPA (world life protection act)

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09

Synthesis and Characterization of ZnS thin film by Spray Pyrolysis Technique

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Abstract:

Thin films of ZnS were prepared by spray pyrolysis. The effect of substrate temperatureon Structural, Morphological andElectrical properties of ZnS thin film were studied. From the X-ray diffraction pattern at substrate temperatures in the ranges from 425°C-500°C with difference of 25°C whichshows a good crystallinity is obtained with cubic crystal structure. From surface morphology of ZnS thin film prepared at a substrate temperature 500°C is relativelymore homogeneous,good stoichio metry, a smooth surface.It was found from electrical properties the electrical resistivity (ñ) of the given ZnS film at substrate temperatures 425°C is 5.58 × 10^{6} Ù-cm, 450°C is4.4×10^{6} Ù-cm, 475°C is 4.06×10^{6}Ù-cm, and 500°C is 2.4×10^{6} Ù-cm.

Keywords: Spray pyrolysis, structural properties, Morphological properties & electrical properties.

1. Introduction:

ZnS thin film material used for various application devices in solar cell. It wasalso used in LED for blue to ultra violet spectral region due to its wide band gap 3.6-3.7ev at room temperature. ZnS thin films are extensively used in industry for various purposes such as filter, reflected film, dielectric film and photoelectric cellwith adequate properties [1].

ZnS thin films have been prepared by a variety of techniques, such as molecular beam epitaxy[2], chemical bath deposition [3], thermal evaporation [4]and RF reactive sputtering [5] etc. The technique of spray pyrolysis also offers interesting possibilities for preparing ZnS thin films. Indeed, this technique for the preparation of thin films is very attractive because it is inexpensive, simple and capable of depositing optically smooth, uniform and homogeneous layers. Furthermore, because this simple coating technique involves processing in an ambient atmosphere, it is easy to incorporate it into an industrial production line [6]. With spray pyrolysis, the solution is sprayed directly onto the substrate. A stream of gas (compressed air) is used for atomization of the solution through the nozzle. The main factors in determining the final physical and chemical properties of the films are the initial solution, the nozzle pressure, and the substrate temperature, among other parameters [7].

H.H. Afifi [1] et.al studied structural properties of ZnS thin film, he was found that a cubic phase structure prepared by spray pyrolysis.Evren Turan [6] studied structural, optical and electrical properties, from that study he found crystalized in a wurtzite structure, a direct band gap energy of 3.62 eV and values of the electrical conductivity and carrier concentration were about 3x10^{-10}Ù$^{-1}$ cm^{-3} and 1x10^{7} cm^{-3}, respectively.B. Elidrissi[7] et.al studied structural, compositional and optical properties and he found that films of ZnS with mixture of hexagonal and cubic phases have been prepared by the spray pyrolysis method, found that relatively good film crystallinity was obtained at substrate temperature of 500°C deposition time of 35 min and spray rate of 5ml min^{-1} and these films are also nearly stoichio

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RESEARCH ARTICLE OPEN ACCESS

Study of Ethanol sensing properties of spray deposited CdO thin films

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ABSTRACT

The objective of this work is to study the influence of deposition temperature on morphological and ethanol sensing properties of the CdO thin films prepared by spray pyrolysis technique. These films were characterized for morphological by means of scanning electron microscopy (SEM). As deposited CdO films are polycrystalline with (111) preferential orientation. The relationship between the surface morphology and the sensing properties to ethanol sensing properties of the CdO thin films is newly established. The CdO films exhibited the maximum response of 21% at 300 °C upon exposure to 0.2 vol.% LPG.

Key words: CdO films, LPG, spray pyrolysis technique.

INTRODUCTION

Metal oxides possess a broad range of electrical, chemical and physical properties that are often highly sensitive to changes in their chemical environment. Because of these properties, metal oxides have been widely studied, and most commercial sensors are based on appropriately structured and doped oxides [1]. Among the metal oxides, wide band gap semiconducting oxides such as SnO_2, ZnO and In_2O_3 have been extensively studied. Other well known sensors include Fe_2O_3 [2], WO_3 [3], CuO-$BaTiO_3$ [4-6].

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Structural, Morphological and Electrical Properties of chemical bath deposited $Cd_{1-x}Zn_xS$ Thin Films

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Abstract—$Cd_{1-x}Zn_xS$ ($0 \leq x \leq 1$) thin films with different compositions have been deposited on amorphous glass substrates by the chemical bath deposition technique. The composition Structural, Optical, Morphological and Electrical Properties were studied. The structural properties of as deposited films were studied by using X-ray diffraction technique. XRD studies reveal that the films are crystalline with cubic and hexagonal structure. Calculated lattice parameter shows good agreement with JCPDS data card. It is observed that grain size increasing with increased Zn up to $x = 0.4$. Further, it decreases with increasing Zn. The band gap of the thin films varied from 2.43 to 3.50 eV as composition varied from x=0 to x=1. It was observed that changes in the small amount of Zn result in marked changes in the optical band gap of CdS. The electrical conductivity decreases with rising Zn content and rising with temperature. An effort has also been made to obtain activation energy of these films which rise with rising Zn attention in CdS.

Keywords: *Thin film, $Cd_{1-x}Zn_xS(0 \leq x \leq 1)$, CBD method, Structural properties, optical properties, morphological properties, electrical properties.*

I. Introduction

In the present situation, petroleum products are insufficient to meet the vitality necessities of the world. What's more, consuming non-renewable energy sources has another hindering impact of discharge of ozone-harming substances driving to global warming. Elective renewable vitality sources, for example, sun power, wind power can be used to beat the vitality deficiency. Analysts are taking a shot at various innovations to tackle these renewable resources in a proficient way since the establishment of photovoltaic (PV) modules will give vitality less carbon footprint [1]. For a long time, silicon-based sun oriented cells dominated the market and with an increase in assembling capabilities, thin film PV cells are picking up significance [2]. Real deposition techniques, for example, sputtering[3], Metal Organic Chemical Vapor Deposition (MOCVD) [4], e-beam cooperation (5), chemical bath deposition (CBD) [6], have been attempted to produce thin film PV.

The chemical bath deposition (CBD) technique is right now drawing in considerable regard for the analyst as it doesn't require costly instrumentation like vacuum system and other costly hardware [5]. The transformation of sun energy into a usable shape is a plausible test to the researcher.

Group II-VI semiconductor thin films have attracted substantial attention because of their broad range of use in the fabrication of solar cells and other optoelectronic devices[7]. Group II-VI semiconductor compound they by and large display extensive band gaps, making them prominent for short wavelength applications in optoelectronics [8].

II-VI compounds can formed ternary and quaternary compounds with an immediate primary band gap assignment over the whole amalgam creation go and with high absorption coefficients control.. CdZnS ternary thin film has been broadly utilized as a great bandgap window material in hetero intersection sun oriented cells and photoconductive gadgets [9]. CdS and ZnS frame a persistent arrangement of strong arrangements, Cd Zn S. The band-gap vitality of $Cd1-xZnxS$ can be controlled in the scope of the parallel band gap. Additionally, in heterojunction solar cells utilizing CdTe, CuInSe , and CuGaSe , the utilization of CdZnS rather than CdS can prompt an expansion in photocurrent by giving a match in the electron affinities of the two materials[11]. In order to diminish the imperfection density, the optical and electrical properties of CdS must be improved which can be accomplished through doping. It has been accounted for before that when CdS is doped with certain cationic impurities, for example, Al,Ga, Mn, Zn, Cu, In and with certain anionic contaminations, for example, F, Cl, B and so on., its optoelectronic properties might be improved.[10]. Films deposited by CBD technique are by and large polycrystalline in structure and their properties are impacted by the deposition procedure. [7].

In our present work, cadmium acetate, zinc acetate and thiourea mixture have been used as source materials to make thin films of $Cd_{1-x}Zn_xS$ with different composition ($x = 0.0-1.0$) using chemical bath deposition technique. In our previous work, we reported that Zn doping can improve the structural and optical properties of pure CdS which refered in reference no.[7]

The growth, structural, optical, electrical and morphological properties of these films in relation to composition 'x' are reported and discussed. Also discussed the relation between energy band gap(eV) and composition parameter(X). And discussed relation in between Grain size and composition.

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Original Research Paper

Structural and optical properties of $Cd_{(1-x)}Zn_xS(x=1)$/Zns thin film using chemical bath deposition technique

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ABSTRACT

$Cd_{(1-x)}Zn_xS$ (x=1)/ Zns thin films were deposited by the chemical bath deposition technique. Depositions were done on cleaned glass substrates. The composition, structural properties of deposited thin films was studied using X-ray diffraction technique. XRD studies reveal that the films are crystalline with hexagonal structure. Calculated lattice parameter shows good agreement of jcpds data card. It is observed that grain size of ZnS thin film is 18 nm. The band gap of the Zns thin films 3.50 eV as composition x = 1.

Keywords: *ZnS, Thin films, CBD technique, Optical Properties, Structure Properties*

Zinc sulfide (ZnS) is an important II–VI semiconducting fabric with a wide direct band gap of 3.65 eV in the bulk [1-5]. This class of new resources has not only provided many unique opportunities but also exhibited novel optical and convey properties, which are potentially useful for technological applications It has potential applications in optoelectronic devices such as blue light emitting diodes, electroluminescent devices and photovoltaic cells [1,4] and more recently as *n*-type window layer heterojunction solar cells. Zinc sulfide has found wide use as a thin film coating in the optical and microelectronic industries. Introduction Types II–VI semiconductors used as materials in light emit-ters of a range of wavelengths from the visible to the infra-red spectrum as well as in photo acceptance units [3-5]. Group II–VI semiconductor thin films have attracted considerable attention from the research community because of their wide use in the fabrication of solar cells and other optoelectronic devices [6-8].In recent years, ZnS thin films have been grown by a variety of deposition techniques, such as chemical bath deposition, evaporation, and solvothermal method Chemical bath deposition is promising because of its low cost, arbitrary substrate shapes, simplicity, and capability of large area training. CBD method is used to prepare the optimal ZnS buffer layer for CIGS solar cell, which shows a high transmittance in the visible region and very uniform below 100 nm thick. And the good hetrointerfaces of the Al:ZnO/ZnO/ZnS and ZnS/CIGS/FTO structure of CIGS solar cell formed by wet processes were observed [9-12].

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SYNTHESIS, CHARACTERIZATION AND ANTIMICROBIAL PROPERTIES OF NOVEL ISOXAZOLINE

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ABSTRACT

Chalcones were synthesized by the condensation product of acetophenone in combination with aromatic aldehydes in presence of strong base. It was found that the synthesized chalcones were having prominent role in modern coordination chemistry. The chalcone synthesized by base catalyzed condensation of 3-acetyl-6-methyl-2H-pyran-2,4-(3H) dione (DHA) with different aromatic aldehyde. These chalcones were used for synthesis of derivatives i.e. isoxazoline. The synthesized compounds were characterized by IR, ^{1}HNMR and mass spectral analysis. The derivatives were further used for the estimation of its biological properties. It was found that the derivative possesses efficient antimicrobial properties. From the study it was found that the synthesized compounds are efficient for further research work.

KEYWORDS: Dehydroacetic acid (DHA), Chalcone, 3-cinnamoyl-4-hydroxy-6-methyl-2-pyrones, IR, ^{1}HNMR, Antibacterial activity, Antifungal activity, Isoxazoline.

INTRODUCTION

Chalcones are the special ligand molecules that used for the synthesis of complexes with desired properties. The complexes are having variations in physical, chemical and biological properties. The existence of the α, β-unsaturated ketone moiety in chalcones is a common part found in a large number of biological active compounds[1]. Therefore, chalcone derivatives from nature or synthetic origin exhibit diverse pharmacological activities, such as antimicrobial[2], antitumor[3], anticancer[4], radical scavenger[5] and inhibitor of topoisomerase I[6].

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Histology And Mucin Histochemistry Of The Gastrointestinal Region Of Freshwater Fish *Mastacembelus Armatus*

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ABSTRACT:

Present study was conducted to investigate the histology and characteristics of mucins secreted by epithelial mucous cells of the digestive tract in the intestine of freshwater fish *Mastacembelus armatus* were investigated using light microscope. During histochemical study intestine the digestive tract was divided into a pharynx, oesophagus, J-shaped stomach (with a cardiac, fundic and pyloric part) and intestine, composed of anterior intestine, middle intestine and posterior intestine, which consisted of a mucosa (epithelial layer), lamina propria-submucosa, muscularis and serosa. A large number of isolated longitudinal striated muscular bundles were present in the lamina propria-submucosa of pharynx. Goblet cells were observed throughout the digestive tract, except in the stomach. The epithelial mucous cells contained neutral or other two mixtures of acid and neutral mucins, the first being the most common. The neutral mucin was the only type of mucins in the stomach, anterior intestine and middle intestine. The results of this study will be helpful for understanding the digestive physiology and diagnosing some gastrointestinal diseases in *Mastacembelus armatus*.

Keywords: Histochemical, Intestine, Mastacembelus armatus

INTRODUCTION

The histology of fish digestive tract has been described for numerous species. Generally, the basic histological structures are similar: wall of the digestive tract of many fish is composed of mucosa, submucosa, muscularis and serosa (Diaz *et al.*, 2006). Results in previous studies have indicated that some small differences of histological structures among fish digestive tracts are related to feeding habits, food, age, body shape and weight (Gordon and Hecht,2002). Most of the earlier researchers have reported*Mastacembelus armatus* as a carnivorous fish except Mookerjee et al.*(1947)* who have documented its herbivorous feeding habit. Khan (1934) has reported its preference for eggs and fry of other fishes. Serajuddin and Mustafa (1994) have documented insects, shrimps and fish, as the mostly preferred food items for this fish species.

Along with the general histological structures of digestive tract, mucin histochemistry of digestive tract has also been studied in different fish species. The mucin layer of wall of digestive tract has various functions, such as lubrication, digestion,absorption, control infectious diseases and colonization of the harmful or opportunistic micro-organisms.

MATERIALS AND METHODS

Preparation of slides for histochemical studies: For histochemical analysis, small fragments from the anterior, middle and posterior parts of infected intestine were used. The infected intestine and normal were cut into small pieces and were fixed in Bouin's fluid. After 48 hours, washed several times with water, dehydrated in graded series of alcohols,

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RESEARCH ARTICLE
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Preparation of MnS thin films by chemical bath deposition and effect of bath temperature on their optical propertie

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Sonavane DK, Jare SK, Suryawanshi RV, Kathare RV, Bulakhe RN, Preparation of MnS thin films by chemical bath deposition and effect of bath temperature on their optical properties, *Int. Res. Journal of Science & Engineering*, December 2017, Special Issue A1 : 91-94.

ABSTRACT
MnS thin films were deposited onto glass substrates by chemical bath deposition at different temperatures (40°C and 70°C). The deposition parameters such as deposition time, pH and concentrations of solution were optimized. The films were prepared from the mixture of the solution of manganese acetate tetrahydrate as a manganese ion source, thiourea as a sulphur ion source and triethanolamine (TEA) as a complexing agent. The MnS thin films were characterized by optical absorption spectroscopy and band gap energy were determined. The band gap energy is found to be in the range of 2.81-3.3eV.

Keywords: Optical properties, CBD method, Band gap, Thin films, Chemical synthesis.

INTRODUCTION

During the past few decades manganese chalcogenides (MnS, MnSe, MnTe etc.) have given much interest concerning their structural, chemical and physical properties [1-3]. Depending upon the deposition conditions, the structural, electrical and optical properties of these materials can be controlled in many ways [4]. The deposition of DMS materials as the thin films form has been the subject of intense research over the past few decades due to application in a variety of fields such as photoconductors, solar selective coatings, solar cells, antireflection coatings and optical mass

CURRENT GLOBAL REVIEWER- Special Issue(UGC APPROVED Sr.No.-64210,ISSN 2319-9148)

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DIAGNOSIS OF DISEASES USING DIFFERENT APPROACHES TO IMPROVE PRODUCTIVITY.

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Abstract:

Important agricultural crops are threatened by a wide variety of plant diseases and pests. These can damage crops, lower fruit and vegetable quality and wipe out entire harvests losses. About 42% of the world's total agricultural crop is destroyed yearly because of attack of multiples of diseases and pests. Farmers often must contend with more than one pest or disease and new pesticide-resistant pathogenic strains attacking the same crop.

However, crop losses can be minimized, and specific treatments can be tailored to combat specific pathogens if plant diseases are correctly diagnosed and identified early. These need-based treatments also translate to economic and environmental gains. So, in this article the available disease diagnosis methods were mentioned and concluded how early diagnosis not only helps in the management of disease but also contribute to the increased productivity.

So the present work was designed to standardize the diagnosis methods for a devasting citrus disease i.e. *Phytophthora*.

Key words: Molecular, Immunological, ELISA, PCR

Introduction

The traditional method of identifying plant pathogens is through visual examination. This is often possible only after major damage has already been done to the crop, so treatments will be of limited or no use. To save plants from irreparable damage by pathogens, farmers have to be able to identify an infection even before it becomes visible. Sometimes because of psudo nature of pathogen or pest there are chances of having wrong diagnosis and it leads to loss of money on inappropriate management practices.

Advances in molecular biology, plant pathology, and biotechnology have made the development of such kits possible. These kits are designed to detect plant diseases early, either by identifying the presence of the pathogen in the plant (by testing for the presence of pathogen DNA) or the molecules (proteins) produced by either the pathogen or the plant during infection. These techniques require minimal processing time and are more accurate in identifying pathogens. And while some require laboratory equipment and training, other procedures can be performed on site by a person with no special training.

So far, diagnostic kits have been designed to detect diseases in crops such as rice, potatoes, papaya, tomatoes, and banana. Similar kits are also increasingly important for identifying genetically modified organisms (GMOs) in shipments of conventional crops.

DNA-Based Diagnostic Kits

DNA diagnostic kits are based on the ability of single stranded nucleic acids to bind to other single stranded nucleic acids that are complementary in sequence means hybridization property.

The tool used in DNA diagnostic kits is the Polymerase Chain Reaction (PCR). There are 3 steps involved in PCR. The DNA is first unwound, and its strands separated by high temperatures. As the temperature is lowered, short, single-stranded DNA sequences called primers are free to bind to the DNA

CURRENT GLOBAL REVIEWER: Special Issue(UGC APPROVED S. No. 64310 ISSN 2319-8028)

Existence of Locally Attractive Solutions for a Fractional Order Nonlinear Quadratic Differential Equation

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Abstract: In this Paper, we discuss the existence the Solution for Fractional Order Nonlinear Quadratic Differential Equation with Initial Value Condition in Banach Algebras. Moreover; we show that solutions of this equation are locally attractive. Our main tool is a Fixed Point Theorem. The existence theorems for extremal Solutions are also proved under Certain Monotonicity Conditions. Our results are illustrated by an example.

Keywords: Fractional Order Quadratic Differential Equation, Fixed Point Theorem, Locally Attractive and Extremal Solutions, Banach Space.

AMS Subject Classification: 34K10, 34A12, 46B50.

1. Introduction:

Fractional differential equations arise in many engineering and scientific disciplines as the mathematical modelling of systems and processes in the fields of physics, chemistry, aerodynamics, electrodynamics of complex medium etc. involves derivatives of fractional order [1,5,10]. Recently, many authors have studied fractional Order differential equations from two aspects, one is the theoretical aspects of existence and uniqueness of solutions, the other is the analytic and numerical methods for finding solutions. Fractional differential equations also serve as an excellent tool for the description of hereditary properties of various materials and processes. In consequence, the subject of fractional differential equations is gaining more and more attention. For some recent development on the topic, see [7, 11] and the references therein.

We consider the following Fractional Order Nonlinear Quadratic Differential Equation (FNQDE) with Initial Conditions:

$$\left.\begin{aligned} \mathfrak{D}^{\xi}\left[\frac{x(t)}{f(t,x(t))}\right] + \lambda\left[\frac{x(t)}{f(t,x(t))}\right] &= g(t,x(t)), t \in \mathbb{R}_+ \\ x(t_0) &= x_0 \in \mathbb{R} \\ f(t_0,x(t_0)) &= f(t_0,x_0) \in \mathbb{R} \end{aligned}\right\} \quad (1.1)$$

for $\lambda > 0 \in \mathbb{R}, \xi \in (0,1)$s

where $f: \mathbb{R}_+ \times \mathbb{R} \to \mathbb{R} - \{0\}$ and $g: \mathbb{R}_+ \times \mathbb{R} \to \mathbb{R}$ are continuous functions.

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DAMA

POPULATION DYNAMICS OF HELMINTH PARASITE *GANGESIA SP.* IN FRESHWATER FISH *WALLAGO ATTU* FROM LATUR DISTRICT (MS) INDIA

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ABSTRACT
The present study deals with the Population dynamics of helminth Parasite *Procamallanus sp.* sp. in freshwater fish *Mastacembelus armatus* from Latur District (MS) India. The survey was conducted during, annual cycles 2011 to 2013 from different sampling station to estimate the Population dynamics. For this study 368 freshwater fish *Mastacembelus armatus* selected. Fish samples were collected from different localities of Latur District, Maharashtra State, namely Ausa, Nilanga, Ahemadpur, Deoni, Jalkot, Renapur, Latur, Shirur-Anantpal, Chakur and Udgir. The population dynamics shows the prevalence, mean intensity, abundance and dominance of the collected cestode *Procamallanus sp.* sp.

KEYWORDS: *Circumuncobothrium* sp., *Mastacembelus armatus*, Population dynamics, Freshwater fish,

INTRODUCTION

India is the mega biodiversity country in the world. Fish are the most important inhabitants of the aquatic ecosystem mainly marine and fresh water and provides the human population cheap and easily digestible proteins. In India it is estimated that about 10 million tons of fishes are required to meet the annual demand of fish proteins as compared to an actual annual production of only 3.5 million tons (Shukla and Upadhyay, 1998). The major component of fish is protein. Fish proteins have a high biological value. It also contains variable quantities of calcium, phosphate, fat and other nutrient important for human health and growth. Fish provides the world's prime source of high quality protein, 14-16% of the animal protein consumed worldwide; over one billion people consume fish as their primary source of animal protein.

Recent studies indicate that of 750 species of freshwater fish species found in India, a large number of them are familiar only to the local population. Intestinal parasitic helminths have a serious impact on fish health, productivity, quality and quantity of meat. Fish parasitic populations are known to differ due to variation in the environment and host population (Dogiel, 1961). Helminth parasites of fishes are commonly divided into three main groups; cestodes, nematodes and trematodes. Kennedy, (1975) stated that population investigation can provide date for the predication of integrated methods to achieve the regulation of numbers of harmful parasites, because it has been stated that a single method of control have little value, where as co-ordinated activities ameliorate the infection.

MATERIAL AND METHOD

Examination of fish for collection of parasites:
Examination of intestinal parasites was carried out by using the method described by Hassan *et al.*, (2010). After the separating and counting the population of different helminth parasites from different freshwater fishes the parasites were preserved in separate bottles. Some of these were used for the taxonomic study.
Statistical analysis employed for the population dynamics studies of helminth Parasites:
The definitions and formulae of prevalence, mean intensity and relative density given by Margolis *et al.*, (1982) and Index of infection given by Tenora and Zojda (1974)

RESULT AND DISCUSSION

The results are shown in Table 1, 2 and Figures 1 and 2.
Infection of *Gangesia* sp. in *Wallago attu* during 2011-12
Average month wise variations in the Prevalence, Mean Intensity and Relative Density of *Gangesia* sp. in *Wallago attu* were as follows;
During observation of population dynamics of *Gangesia sp.* a total 180 fishes of *Wallago attu*, out of which 90 males and 92 females were examined. Among them 21 males and 21 females found infected, resulting in maximum 50.0 %

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ICHTHYOPHTHIRIASIS IN ORNAMENTAL FISHES

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ABSTRACT:- The present work reports on the Ichthyophthiriasis. Goldfish developed only a typical mild clinical signs upon contact with the infected Angel fish. This might raise a concern about the variation of exposure of the two species to the infective agent, theront, in the water, infection dose and the method of infection used in the experimental infection.

KEYWORDS:- Ichthyophthiriasis, Gold fish, Angel fish.

Introduction:- Commonly known as "Ich", the white spot disease (Ichthyophthiriasis), can infect almost all freshwater fish and ornamental fishes.(Ventura and Paperna, 1985)in aquarium fish species it widely spread and cause heavy mortality amount in delicate ornamental fishes. Also it can be detected from at least one species of amphibian (Gleeson, 1999). The disease is recognized as one of the most pathogenic diseases of fish caused by eukaryote parasites resulting in significant economic losses in the affected cultured fish species as well as in aquarium fishes (Matthews, 1994). Ich is caused by a hymenostomatid ciliate, *Ichthyophthirius multifiliis* [Fouquet, 1876]. The parasite is commonly distributed, occurring in tropical, subtropical and temperate regions, and extending north to the Arctic Circle (Matthews, 1994). It causes severe epizootics among different fish species in aquaria, hatcheries, and ponds, as well as in wild fish populations (Ezz El-Dien *et al.*, 1998; Thilakaratne, *et al.*, 2003; Kim *et al.*, 2002).

Materials and Methods:- A total of 20 fish; 5 angel fish (*pterophyllum scalare*).5 oskar(*Astronatus ocellatus*)-and 10-Goldfish (*Carrasius auratus*) were collected from the different aquariums from Latur district. Two days later, Angel fish (*Pterophyllum scalare*) started showing itching behaviors, hemorrhagic patches, fin rot, fish have clamped fins and white spots all over the fish body. 5 of the angel fish died after10 days after eruption of the clinical