ST. GREGORIOS COLLEGE KOTTARAKARA

Cover and Title Pages of Proceedings

INTERNATIONAL CONFERENCE ON MATERIALS SCIENCE AND TECHNOLOGY (ICMST-2012)

WELCOME MESSAGE

We have great pleasure in inviting all the scientists and deligates to the ICMST 2012, to St.Thomas College Pala, Kerala, India from 10 June to 14 June 2012. We are sure that this conference will prove to be an extra ordinary success and will provide a legacy for those who come. This ground breaking scientific programme will draw together many luminaries in Material Science from all over the world. It is Prof. CNR Rao, who is going to inaugurate the conference and to deliver the plenary talk.

The ICMAT 2012 will provide a wonderful platform for you to refresh your knowledge base and explore the most uptodate information regarding the Science and advances in the relm of material Science. The conference will provide delegates with information on the latest developments in material Science and we aim to facilitate the exchange of knowledge between scholars across the countries.

In addition to the outstanding Scientific programme, the delegates will be able to enjoy the unique sights and culture of Kerala and India. Visit the world renowned beaches, stroll along the exotic backwaters in one of the many houseboats or just set back and enjoy the monsoon rain in kerala. There is something for everyone to enjoy.

We hope you will join us for a symphony of outstanding science and take a little extra time to enjoy the unique beauty of Kerala and its surroundings.

We look forward to welcoming you to Kerala.

Inaugural Plenary Speaker

Prof. C.N.R. Rao,

JNCASR, Bangalore, India
(Chairman, Science Advisory Council to the Prime Minister)

News & Events

Coming Soon.....

Contact Address

Department of Physics
St.Thomas College Pala
Kottayam DT,- 686574
Kerala, India

Dielectric properties of nano crystalline $LnTiNbO_6$ (Ln = Ce, Pr, Nd, Sm, Gd, Dy, Er, Yb) ceramics

Fergy John[1], J.K. Thomas[1] and Sam Solomon[1,2*]
[1]Department of Physics, Mar Ivanios College, Thiruvananthapuram 695015
[2]Department of Physics, St. John's College, Anchal, 691306

e-mail: samdmrl@yahoo.com

Abstract. Nano ceramics are potential candidates for various technological applications. Nano sized $LnTiNbO_6$ ceramics are prepared using solution combustion technique. The properties of the nano ceramics are compared with that of micro ceramics. XRD shows that nano crystalline $LnTiNbO_6$ (Ln= Ce, Pr, Nd, Sm) have aeschynite orthorhombic structure and Ln= Gd, Dy, Er, Yb have euxenite orthorhombic structure. The structure is confirmed by FTIR. From the TEM study, it is clear that polycrystalline powder is nano sized. The sintering temperature and sintering time of nano ceramics get lowered as compared to micro ceramics. The SEM image shows the surface morphology of the sintered sample. The variations of dielectric constant (ε_r), conductance (G) and loss factor (tan δ) of the samples are studied in the radio frequency range. The nano ceramics show enhanced dielectric properties than that of micro ceramics.

1. Introduction

Synthesis of nano material is one of the major challenges in material producing technology. Nano materials are the suitable for various technological applications, because they exhibit enhanced properties than bulk materials. Nano crystalline materials have better sinterabilty, high surface to volume ratio, superior phase homogeneity, greater chemical activity, etc. For the communication and satellite broadcasting, microwave dielectric resonators (DR) are essential component. Nano ceramics are potential candidate for developing DR's due to their improved electrical and dielectric properties than micro ceramics. Sebastian et al [1] reported microwave dielectric properties of $LnTiNbO_6$ micro ceramics. Here we reports the enhanced properties of nano sized $LnTiNbO_6$ ceramics.

2. Experimental

$LnTiNbO_6$ (Ln= Ce, Pr, Nd, Sm, Gd, Dy, Er, Yb) is prepared by solution combustion technique [2] using the corresponding metal nitrate (oxidizing agent) and suitable fuel (reducing agent) [3]. Calculations are based on the principles used in propellant chemistry, keeping fuel to oxidant ratio unity in order to produce maximum energy. In this synthesis, high-purity Niobium pentachloride, Titanium isopropoxide and the respective rare earth oxides are used as cation sources and oxidant agents, and urea is used as fuel reagent. Citric acid is used as complexing agent to get precursor complex. Stoichiometric amount of oxidizing agents and reducing agent in a minimum volume of deionized water to obtain transparent aqueous solutions in a glass beaker is heated using a hot plate at 250 °C to forms a viscous gel. The gel thus formed undergoes dehydration on further heating and self-ignites with the evolution of huge quantity of gases. Hence the residual ash that is formed after combustion has a fluffy nature. This ash is further heated up to 600 °C to get the pure phase nano powder. The prepared powder is mixed with one drop of 1 wt% solution of polyvinyl alcohol and

Lidar investigations on the structure and microphysical properties of cirrus at a tropical station Gadanki (13.5^0 N and 79.2^0 E), India.

Gloryselvan S Jayeshlal [a], Malladi Satyanarayana [a,b,c]*, Gopinathan Nair S. Motty[a], Reji K. Dhaman[a], Vasudevannair Krishnakumar[b], Vellara P Mahadevan Pillai [a]

[a]Department of Optoelectronics, University of Kerala, Karyavattom, Trivandrum 695581,Kerala,India.
[b]St.Gregorios college, Kottarakara, Kollam-691 531, Kerala, India.
[c]Department of ECE and R&D, Geethanjali College of Engineering and Technology, Cheeryal, Keesara, Hyderabad-501 301, India.
*Corresponding author E-mail: -drsatyanarayana.malladi@gmail.com

ABSTRACT

Cirrus clouds are mainly composed of ice crystals and are known to be the major natural contributors to radiative forcing in the Earth's atmosphere system. Describing the formation and microphysical properties of cirrus clouds and their role in climate models remain a challenging study. Lidar is a unique instrument, which provides the information on the optical and microphysical properties of cirrus clouds with good spatial and temporal resolutions. In this study we present the microphysical properties of cirrus clouds and their temporal variability, obtained using the ground based dual polarisation lidar at the tropical station Gadanki (13.5°N and 79.2°E), India, during the period January2009 to March 2011. Using the method developed in house for deriving range dependent lidar ratio (LR), the lidar measurements are used for deriving the extinction coefficient and to obtain the nature of the scatterers present in the cloud. It is noted that lidar ratio plays an important role and its measurements indicate directly the type of the ice nucleating aerosol particles present in the cloud. The long term data obtained on the structure of the cirrus in this regard are useful in the climate modelling studies.

Keywords: - Lidar, Lidar ratio, Optical depth

1. INTRODUCTION

Cirrus are the high altitude clouds, distributed around 30% of the entire earth in all season. Within that 70% of cirrus always present in the tropical region. The presents and existence of Cirrus cloud at tropics are receiving much attention due to their role in Earth's radiation budget[1]. Because of their high altitudes, cold ice dominated in cirrus clouds that act as a thermal blanket by trapping the outgoing IR radiation. But the same time they can be effective at reflecting the upcoming solar radiation back to space. The balance between these two radiative processes, namely the greenhouse and albedo effects determine the net impact of cirrus on our climate system[2]. The aerosols, water vapour and temperature in the troposphere and lower stratosphere play a key role in the formation of cirrus and their radiative properties[3]. The effects of cirrus clouds on the climate system depend on the optical and microphysical properties of ice present in it[4]. The study of the cirrus optical properties such as extinction, optical depth (τ) and their dependence on the meteorological parameters like temperature, relative humidity etc are important in cloud research. One of the important parameter is optical depth. The previous studies classified cirrus clouds in to sub visible ($\tau \leq 0.03$), thin ($0.03 \tau \leq 0.3$) and thick ($\tau > 3$) according to their optical depth values [5].

The nature and actual behavior of cirrus cloud is defined by its optical depth, such as the sub visible clouds gives green house effect and thick clouds reflected back almost all incoming solar radiations gives an albedo effects[6]. The formation and microphysics of cirrus exceedingly allied with the type of aerosol particle present. Seasonal variability of meteorological conditions causes different aerosol type in different season that affect the cirrus cloud condition[7]. Aerosols significantly modify the incoming and outgoing solar radiations. Hence the simultaneous study about both aerosol and cirrus needed for the proper understanding of radiative effects of clouds on climate

Lidar is one of the powerful techniques for characterizing the microphysical and optical properties of earth atmosphere. It is well established that lidar based measurements are useful in providing the vertical profiles of aerosols and thin cirrus clouds with good spatial and temporal resolution. Deriving the optical properties of aerosols

Remote Sensing of the Atmosphere, Clouds, and Precipitation VI, edited by Eastwood Im, Raj Kumar, Song Yang, Proc. of SPIE Vol. 9876, 98761U · © 2016 SPIE · CCC code: 0277-786X/16/$18 · doi: 10.1117/12.2222294

Investigation of tropical cirrus cloud properties using ground based lidar measurements

Reji K. Dhaman[a,c], Malladi Satyanarayana[a,b], V.Krishnakumar[d], V.P. Mahadevan Pillai[a], G.S Jayeshlal[a], K. Raghunath[c], M Venkat Ratnam[c]

[a]Department of Optoelectronics, University of Kerala, Kariavattom, Trivandrum-695 581, Kerala, India; [b]Geethanjali College of Engineering and Technology, Department of ECE and R&D, Cheeryal, Keesara, Hyderabad-501 301, India; [c]Department of Basic Science & Humanities, Indian Naval Academy, Ezhimala, Kannur- 670 310, Kerala, India; [d]Department of Physics, St.Gregorios College, Kottarakara, Kollam-691531, Kerala, India; [e]National Atmospheric Research Laboratory, Gadanki, Tirupati-517 502, India;

ABSTRACT

Cirrus clouds play a significant role in the Earths radiation budget. Therefore, knowledge of geometrical and optical properties of cirrus cloud is essential for the climate modeling. In this paper, the cirrus clouds microphysical and optical properties are made by using a ground based lidar measurements over an inland tropical station Gadanki (13.5°N, 79.2°E), Andhra Pradesh, India. The variation of cirrus microphysical and optical properties with mid cloud temperature is also studied. The cirrus clouds mean height is generally observed in the range of 9-17km with a peak occurrence at 13-14km. The cirrus mid cloud temperature ranges from -81°C to -46°C. The cirrus geometrical thickness ranges from 0.9-4.5km. During the cirrus occurrence days sub-visual, thin and dense cirrus were at 37.5%, 50% and 12.5% respectively. The monthly cirrus optical depth ranges from 0.01-0.47, but most (>80%) of the cirrus have values less than 0.1. Optical depth shows a strong dependence with cirrus geometrical thickness and mid-cloud height. The monthly mean cirrus extinction ranges from 2.8E-06 to 8E-05 and depolarization ratio and lidar ratio varies from 0.13 to 0.77 and 2 to 52 sr respectively. A positive correlation exists for both optical depth and extinction with the mid-cloud temperature. The lidar ratio shows a scattered behavior with mid-cloud temperature.

Keywords: Cirrus cloud, Lidar, Extinction, Optical depth, Depolarisation ratio, Lidar ratio, Mid-cloud temperature, Geometrical thickness.

1. INTRODUCTION

Among the different cloud types, high altitude, thin and wispy cold clouds consisting of non-spherical ice crystals namely, cirrus clouds are the most commonly occurring cloud type. Studies reveal that cirrus clouds play a significant role in the earth's climate system by their capability of modulating the two radiative effects namely, green-house effect and albedo effect[1,2][Stephens,1990; Chen, 2000]. These radiative effects strongly depend on the cirrus microphysical and optical properties. Optically thin cirrus clouds usually cause positive radiative forcing at the top of the atmosphere and they warm the climate system, whereas optically thick cirrus produces negative radiative forcing which cool the climate[3] [Fu et al., 1993]. In order to quantify the role of optically thin cirrus clouds on the atmosphere, the vertical structure of clouds with certain microphysical parameters such as cloud occurrence heights, cloud geometrical thickness and optical properties such as cloud extinction, optical depth, depolarization ratio and lidar ratio are characterized. Also the monthly and seasonal variation of these parameters with the mid cloud temperature are investigated.

*rejikdhaman2007@gmail.com; *drsatyanarayana.malladi@gmail.com

Remote Sensing of the Atmosphere, Clouds, and Precipitation VI, edited by Eastwood Im, Raj Kumar, Song Yang, Proc. of SPIE Vol. 9876, 98760P
© 2016 SPIE · CCC code: 0277-786X/16/$18 · doi: 10.1117/12.2222314

Investigation on the monthly variation of cirrus optical properties over the Indian sub-continent using cloud-aerosol lidar and infrared pathfinder satellite observation (Calipso)

Reji K. Dhaman*[a,c], Malladi Satyanarayana*[a,b], G.S Jayeshlal[a], V.P. Mahadevan Pillai[a], V.Krishnakumar[d]

[a]Department of Optoelectronics, University of Kerala, Kariavattom, Trivandrum-695 581, Kerala, India; [b]Geethanjali College of Engineering and Technology, Department of ECE and R&D, Cheeryal, Keesara, Hyderabad-501 301, India; [c]Department of Basic Science & Humanities, Indian Naval Academy, Ezhimala, Kannur- 670 310, Kerala, India; [d]Department of Physics, St.Gregorios College, Kottarakara, Kollam-691531, Kerala, India.

ABSTRACT

Cirrus clouds have been identified as one of the atmospheric component which influence the radiative processes in the atmosphere and plays a key role in the Earth Radiation Budget. CALIPSO (Cloud-Aerosol Lidar and Infrared Pathfinder Satellite Observation) is a joint NASA-CNES satellite mission designed to provide insight in understanding of the role of aerosols and clouds in the climate system. This paper reports the study on the variation of cirrus cloud optical properties of over the Indian sub - continent for a period of two years from January 2009 to December 2010, using cloud-aerosol lidar and infrared pathfinder satellite observations (Calipso). Indian Ocean and Indian continent is one of the regions where cirrus occurrence is maximum particularly during the monsoon periods. It is found that during the south-west monsoon periods there is a large cirrus cloud distribution over the southern Indian land masses. Also it is observed that the north-east monsoon periods had optical thick clouds hugging the coast line. The summer had large cloud formation in the Arabian Sea. It is also found that the land masses near to the sea had large cirrus presence. These cirrus clouds were of high altitude and optical depth. The dependence of cirrus cloud properties on cirrus cloud mid-cloud temperature and geometrical thickness are generally similar to the results derived from the ground-based lidar. However, the difference in macrophysical parameter variability shows the limits of space-borne-lidar and dissimilarities in regional climate variability and the nature and source of cloud nuclei in different geographical regions.

Keywords: Cirrus cloud, Aerosol, Lidar, Calipso, Extinction, Optical depth, Lidar ratio, Mid-cloud temperature, Geometrical thickness.

1. INTRODUCTION

Cirrus clouds are widely treated as a major component in modulating the energy budget of the Earth-atmosphere system[1]. Cirrus clouds normally exist in the upper troposphere and sometimes extend into the stratosphere. Cirrus clouds are globally distributed and are composed almost exclusively of non-spherical ice crystals. A well-defined assessment of cirrus cloud radiative forcing creates a major challenge as it essentially requires a global climatology of cirrus clouds that includes range-resolved information about their microphysical and optical properties. Thus global climatology of cirrus can only be obtained from the compilation of data measured with satellite-borne sounders. Space-borne lidars are the most promising instruments, because in contrast to passive satellite instruments they have showed the capability of measuring vertical cloud structure and detecting thin cirrus clouds.

*rejikdhaman2007@gmail.com; *drsatyanarayana.malladi@gmail.com

Remote Sensing of the Atmosphere, Clouds, and Precipitation VI, edited by Eastwood Im, Raj Kumar, Seng Yang, Proc. of SPIE Vol. 9876, 98762O
© 2016 SPIE · CCC code: 0277-786X/16/$18 · doi: 10.1117/12.2223653

INTERNATIONAL SEMINAR ON COASTAL BIODIVERSITY ASSESSMENT

COBIA 2017

DEPARTMENT OF ZOOLOGY ST.GREGORIOS COLLEGE KOTTARAKARA

PROCEEDINGS OF THE

INTERNATIONAL SEMINAR ON COASTAL BIODIVERSITY ASSESSMENT

COBIA 2017

January 5 - 7, 2017

ORGANIZED BY

DEPARTMENT OF ZOOLOGY

ST. GREGORIOS COLLEGE, KOTTARAKARA,

KERALA STATE, INDIA

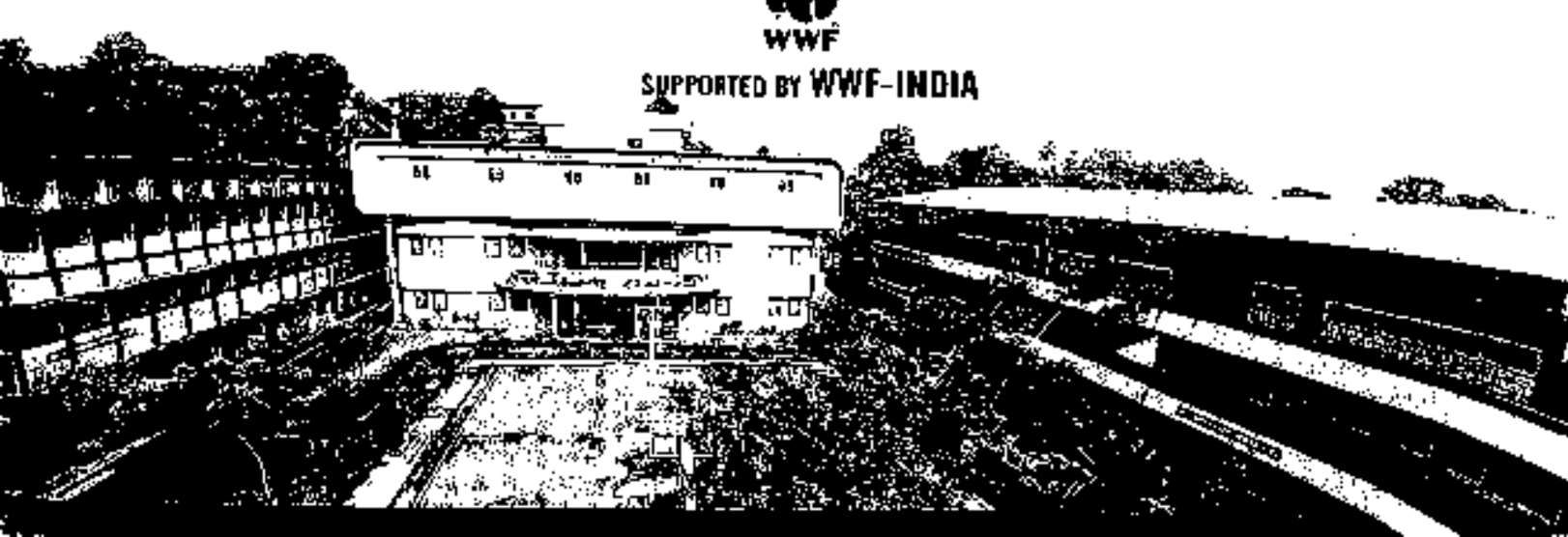
CO-SPONSORED BY

KERALA STATE COUNCIL FOR SCIENCE TECHNOLOGY & ENVIRONMENT

(KSCSTE)

WWF

SUPPORTED BY WWF-INDIA



Proceedings of the International Seminar on

Coastal Biodiversity Assessment (COBIA 2017)

Editor

J. JEAN JOSE

Published by:

Department of Zoology, St. Gregorios College, Kottarakara
Kerala State, India, Pincode-691531

SPONSORED BY

KERALA STATE COUNCIL FOR SCIENCE TECHNOLOGY & ENVIRONMENT
(KSCSTE)

SUPPORTED BY WWF-INDIA

Proceedings of the International Seminar on Coastal Biodiversity Assessment (COBIA 2017)

Editor

J. Jean Jose

Editorial Team

Liney Alex
L. Razeena Karim
Elizabeth John

ISBN : 978-93-5267-385-8

Published by:
Department of Zoology,
St. Gregorios College, Kottarakara
Kerala State, India
Pincode-691531

Printed at : Oliver Printers, Kottarakara, Email:oliveroffsetpress@gmail.com

Contents

52	Chlorophyll degradation and copepod assemblages along Vizhinjam coastal waters, India	Jean Jose. J, Lincy Alex and Volga, S. S	Marine Biodiversity	453	D-18
53	A Study on histopathological Changes in the gonads of an Estuarine fish *Liza parsia* (Ham, 1822)	L. Razeena Karim and E. Sherly Williams	Coastal Pollution	466	B-09
54	Comparative analysis of Piscine and Human serum proteins using Polyacrylamide Gel Electrophoresis	Deepthi T.R , Rajitha Raveendran	Marine Biotechnology	471	E-07

D-17

Chlorophyll degradation and copepod assemblages along Vizhinjam coastal waters, India

Jean Jose. J[1], Lincy Alex[2] and Volga. S. S[3]*
[1, 2] Department of Zoology, St. Gregorios College, Kottarakara-691531, India
[3]Department of Zoology, Govt. College, Kariavattom, India
**Corresponding author jeanlincy@gmail.com*

Abstract

Variation in chlorophyll degradation and copepod assemblages along the southwest coast of India establishes the zooplankton grazing and its abundance can be understood from the quantification of chlorophyll degradation/phaeophytin. A collection of datasets of one year seasonal sampling during the year 2011 predicted that total chlorophyll ranged from 8.67 to 13.82mg.m^{-3} with a peak during pre-monsoon at Vizhinjam (13.82mg.m^{-3}). The phaeophytin values ranged from 0 to 5mg.m^{-3} revealed the grazing strength of zooplankton assemblages representing a majority of copepods along Vizhinjam coastal waters. Summary of data inferred zooplankton assemblages at Vizhinjam transect comprised of copepods (such as calanoid, cyclopoid, harpacticoid and copepod nauplii), cladocerans, lucifer, mysids, fish eggs and larvae. Calanoid copepods comprised 47.25% in pre-monsoon of the total population followed by copepod nauplii (34.57%). The PCA extracted two components in the study which explained 100% of total variance and they are directly linked with copepod grazing predicting the routine and opportunistic (seasonal) grazers.

Keywords: Chlorophyll degradation, hydrochemistry, copepod assemblages, Vizhinjam

Introduction

Marine fisheries is an important sector of the nation's economy supporting the livelihood of the millions of fisher-folk inhabiting the long coastline of India and those who are engaged in the related activities. The marine fisheries sector in India has witnessed a phenomenal growth during the last five decades both

INTERNATIONAL SEMINAR ON COASTAL BIODIVERSITY ASSESSMENT

COBIA 2017

DEPARTMENT OF ZOOLOGY ST.GREGORIOS COLLEGE KOTTARAKARA

PROCEEDINGS OF THE

INTERNATIONAL SEMINAR ON COASTAL BIODIVERSITY ASSESSMENT

COBIA 2017

January 5 -7,2017

ESTD 1964

ORGANIZED BY

DEPARTMENT OF ZOOLOGY

ST. GREGORIOS COLLEGE, KOTTARAKARA,

KERALA STATE, INDIA

CO-SPONSORED BY

KERALA STATE COUNCIL FOR SCIENCE TECHNOLOGY & ENVIRONMENT

(KSCSTE)

WWF

SUPPORTED BY WWF-INDIA

27	Predatory Fish landings and possible impacts on marine food web: a case study from Kollam coast, Kerala	Amurtha R. Nayak., Sirajudheen T.K and Amura M. Krishna	Marine Biodiversity	186	D-06
28	Gastropod diversity: Relation with environmental parameters along the coast of Neendakara, Kollam, Kerala, India	Mumthas Y and Miranda MTP	Marine Biodiversity	196	D-07
29	Impact of temperature on the respiratory physiology and byssus thread formation of *Perna viridis*	Dhivya, R.S, Lipton, A.P., Kumari Sethu Lakshmi Bai, P. K and Sarika A. R	Mariculture	207	C-02
30	Mariculture of marine sponge *Spongia officinalis var. ceylonensis* (Dendy) in open sea: Evaluation of bioactivity	P. Rajendran, A.P. Lipton	Mariculture	219	C-03
31	Diversity and Taxonomy of Silver bellies (Pisces, Teleostei, Leiognathidae) off Kerala coast	Honey Sebastian	Marine Biodiversity	236	D-08
32	Biodiversity of macrobenthic fauna along Veraval coast, Gujarat	Usha Bhagirathan and B. Meenakumari	Marine Biodiversity	245	D-09
33	Asian Water bird Census-2016: Check list of water birds of Pulakkal kole wetland, Thrissur	Kezia Kuruvilla	Marine Biodiversity	258	D-10
34	Depreciation of Macrobenthic Diversity in the Cochin Estuary, South West coast of India	P Sheeba	Marine Biodiversity	269	D-11
35	Potential research highlights in cryopreservation of marine fish sperm	Revathy.S, Benno Pereira F.G and AnuThottappilly	Mariculture	278	C-04
36	Bioaccumulation of heavy metals on the gills and fins of *Mugil cephalus*	Sherly Williams .E, Lekshmi priya.V and Razeena karim .L	Coastal Pollution	292	B-07
38	A simple and cost-effective biofiltration system designed for the removal of toxic metabolites in a live lobster holding at Kanyakumari, India	Udayakumar, A, Lipton, A.P, J.M. Beula and Jean Jose, J	Mariculture	314	C-06
39	Phenol degrading *Aspergillus niger* isolated from mangrove forest and its characterization	Parvathy.G, Prabhakumari .C, Miranda M T P and Naziya Rasheed	Mariculture	320	C-07

C-06

Description of a cost-effective biofiltration system designed for live Lobster holding at Kanyakumari, Tamil Nadu

Udayakumar, A[1], Lipton, A.P[2], J.M. Beula[3] and Jean Jose, J[4]*

[1]VRC of Central Marine Fisheries Research Institute, Vizhinjam, India
[2]Centre for Marine Science and Technology, Rajakkamangalam, Tamil Nadu, India
[3]Department of Chemistry, Scott Christian College (Autonomous), Tamil Nadu, India
[4]Department of Zoology, St. Gregorios College, Kottarakara, Kerala State, India

[*]Corresponding author email: udayakumar8126@gmail.com (A. Udayakumar)

Abstract

The coastal people of Kanyakumari district, Tamilnadu is now widely engaged in spiny lobster culture, in open sea cages utilizing the techniques developed by Central Marine Fisheries Research Institute (CMFRI) due to the high demand and the ever-increasing margin in the seafood trade. The lobsters farmed in cages and procured from the wild directly reaches to the seafood's exporting units at Kanyakumari, through the fishermen group for sale and kept live in the Reinforced Cement Concrete (RCC) rearing tanks. The lobsters were managed for a short period of 3 -4 days prior to packing before live export. During the stocking period, the water quality parameters of the rearing tanks were monitored for pH, water temperature, dissolved oxygen, carbon dioxide, alkalinity and in-organic nutrients. Water exchange of 100% to maintain the water quality in rearing tanks during the short period is impractical and it leads to high operational cost. In order to reduce the effect of harmful metabolites in the rearing waters an efficient filtration unit is inevitable. . The water biofiltration system developed by VRC of CMFRI, Vizhinjam and its laboratory trial was initiated at CMFRI Field Centre at Kanyakumari is discussed. The advantages observed are repeatable for the smooth trade of live lobsters. The water filtration system developed by the exporting unit with technical support from Author's were found advantages and are repeatable for the smooth trade of live lobsters.

Keywords: lobster rearing, live export, biofilter system, mariculture

INTERNATIONAL SEMINAR ON COASTAL BIODIVERSITY ASSESSMENT

COBIA 2017

DEPARTMENT OF ZOOLOGY ST.GREGORIOS COLLEGE KOTTARAKARA

PROCEEDINGS OF THE

INTERNATIONAL SEMINAR ON COASTAL BIODIVERSITY ASSESSMENT

COBIA 2017

January 5 -7,2017

ORGANIZED BY

DEPARTMENT OF ZOOLOGY

ST. GREGORIOS COLLEGE, KOTTARAKARA,

KERALA STATE, INDIA

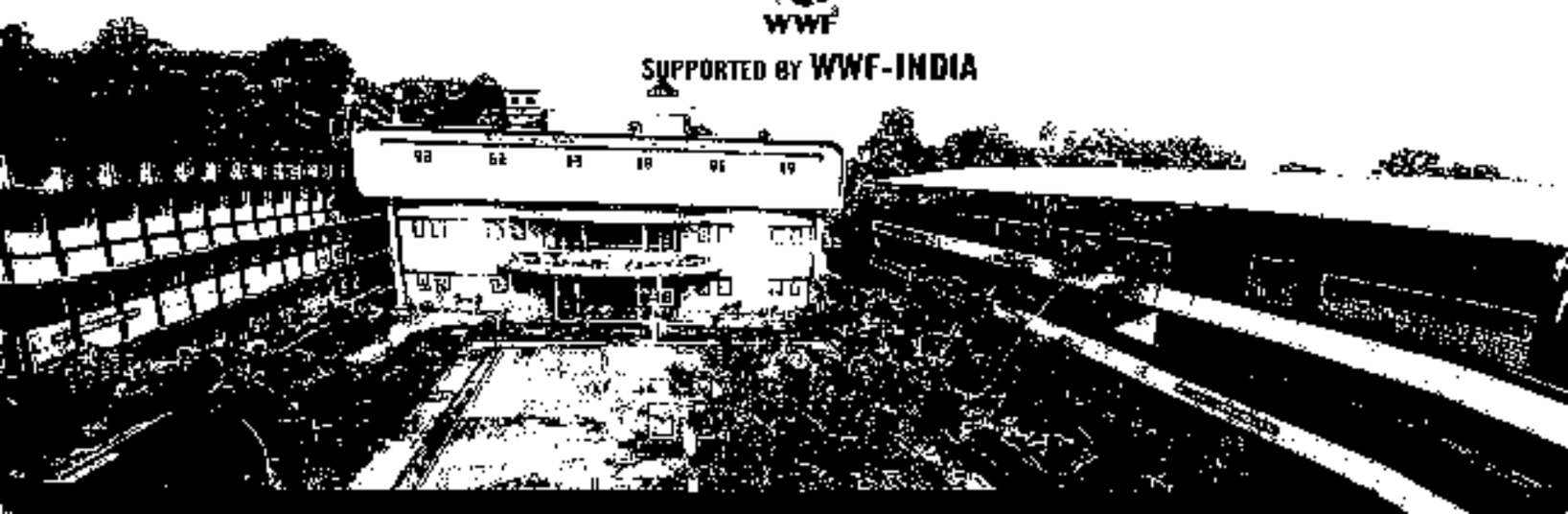
CO-SPONSORED BY

KERALA STATE COUNCIL FOR SCIENCE TECHNOLOGY & ENVIRONMENT

(KSCSTE)

WWF

SUPPORTED BY WWF-INDIA



D-04

Diversity and Abundance of Phytoplankton of Arthunkal in Kerala, South West coast of India- A pre monsoon study

Lekshmi, S[1]; Miranda, M.T.P[1], and Jean Jose, J[2]*

[1] P. G & Research Department in Zoology, Fatima Mata National College (Autonomous), Kollam – 01, Kerala, India

[2] Department of Zoology, St. Gregorios College Kottarakkara, Kollam, Kerala, India

**Corresponding author: lekshmi2c@gmail.com (Leksmi. S)*

Abstract

The main objective of this study was to evaluate the diversity and abundance of phytoplanktons and relate it with the environmental variables along the coast of Arthunkal in Kerala, Southwest Coast of India .The duration of the study was from January–May 2015 (Pre-monsoon season). Fluctuations in the monthly abundance was noticed -Thlassiothrix sp was abundant in January, Coscinodiscus asteromphalus in February, Thalassionema frauenfeldii, Nitzschia closterium, Biddulphia mobilensis and Fragilari aoceanica in May. Triceratum favus exhibited uniform distribution. Asterionlla japonica dominated in April. Biddulphia mobilensis was abundant from March to May.However the environmental variables revealed no significant fluctuations. These preliminary investigations towards documenting the marine phytoplankton are part of an exhaustive study being carried out on the plankton assemblages off the coast of Arthunkal

Keywords: Arthunkal, phytoplankton, numerical abundance.

Introduction

Phytoplanktons form the base of aquatic food webs in marine and fresh water habitats.They are sensitive to hydrological parameters such as pH, nutrients, salinity, temperature and water current (Soininen *et al*, 2009). Being valuable indicators, they respond directly and sensitively to many physical, chemical and biological changes that occur in aquatic environment.

27	Predatory Fish landings and possible impacts on marine food web: a case study from Kollam coast, Kerala	Amurtha R. Nayak., Sirajudheen T.K and Anura M. Krishna	Marine Biodiversity	186	D-06
28	Gastropod diversity: Relation with environmental parameters along the coast of Neendakara, Kollam, Kerala, India	Mumthas Y and Miranda MTP	Marine Biodiversity	196	D-07
29	Impact of temperature on the respiratory physiology and byssus thread formation of *Perna viridis*	Dhivya, R.S, Lipton, A.P., Kumari Sethu Lakshmi Bai, P. K and Sarika A. R	Mariculture	207	C-02
30	Mariculture of marine sponge *Spongia officinalis var. ceylonensis* (Dendy) in open sea: Evaluation of bioactivity	P. Rajendran, A.P. Lipton	Mariculture	219	C-03
31	Diversity and Taxonomy of Silver bellies (Pisces, Teleostei, Leiognathidae) off Kerala coast	Honey Sebastian	Marine Biodiversity	236	D-08
32	Biodiversity of macrobenthic fauna along Veraval coast, Gujarat	Usha Bhagirathan and B. Meenakumari	Marine Biodiversity	245	D-09
33	Asian Water bird Census-2016: Check list of water birds of Palakkal kole wetland, Thrissur	Kezia Kuruvilla	Marine Biodiversity	258	D-10
34	Depreciation of Macrobenthic Diversity in the Cochin Estuary, South West coast of India	P Sheeba	Marine Biodiversity	269	D-11
35	Potential research highlights in cryopreservation of marine fish sperm	Revathy.S, Benno Pereira F.G and AnuThottappilly	Mariculture	278	C-04
36	Bioaccumulation of heavy metals on the gills and fins of *Mugil cephalus*	Sherly Williams .E, Lekshmi priya.V and Bazeena karim .L	Coastal Pollution	297	B-07
38	A simple and cost-effective biofiltration system designed for the removal of toxic metabolites in a live lobster holding at Kanyakumari, India	Udayakumar, A, Lipton, A.P, J.M. Beula and Jean Jose, J	Mariculture	314	C-06
39	Phenol degrading *Aspergillus niger* isolated from mangrove forest and its characterization	Parvathy.G, Prabhakumari .C, Miranda M T P and Naziya Rasheed	Mariculture	320	C-07

B-07

Bioaccumulation of heavy metals on the gills and fins of *Mugil cephalus*

*Sherly Williams .E1 *, Lekshmi priya.V[1] and Razeena karim .L[2]*

[1]Environmental sciences, aquaculture and fish biotechnology unit, Department of Zoology, Fatima Matha National College (Autonomous), Kollam, Kerala, India

[2] Department of Zoology, St Gregorios College, Kottarakkara, Kerala, India

**Corresponding Author- sherlyrobin@rediffmail.com (Sherly Williams E)*

Abstract

Mugil cephalus commonly called mullet, is one of commercially important fin fishes of Ashtamudi lake, the Ramsar site. It is often a specialty of seafood restaurants. These fishes from two different sites of Ashtamudi lake, were selected for the present study. Elemental analysis was carried out for the water and sediment samples from both the sites. The results revealed that heavy metals such as chromium, lead, copper and zinc were present more in the samples when compared to cadmium. During the SEM analysis, the combined effect of the accumulation of these heavy metals mainly chromium, lead, copper and zinc were observed as white deposition in fins of fish samples. The effect of accumulation on gill includes fusion of secondary lamellae, vasoconstriction, hypertrophy of chloride cells and mucus cells, curling and abnormal elongation of the secondary lamellae, severe inter-epithelial oedema etc.

Key Words: Fin and gill, heavy metals, SEM

Introduction

A scientific knowledge on the distribution of heavy metals in the aquatic environment is important because these elements can be toxic even in traces and cause harmful effects to aquatic organisms. Aquatic organisms especially fishes accumulate heavy metals directly because of the intimate contact they have with the aquatic medium and also because they have to extract oxygen from the medium by passing enormous volumes of water over their gills. Fish have been

40	Observations on the Cephalopod landings and SSOP at Mudasalodai, South East coast of India	Lincy Alex and M. K. Anil	Marine Biodiversity	330	D-12
41	Threats and prospects of Esturian ichthyofaunal diversity at Pallathuruthy in relation with heavy metal contamination, Kerala, India	Rani S. Dharan, Sherly Williams E	Coastal Pollution	335	B-08
42	*Moringa oleifera* leaves- An immune boost for aquaculture	Veena C.R and George Thomas	Marine Biotechnology	346	E-01
43	Immunomodulatory efficacy of dietary administration of medicinal herb extracts on *Macrobrachium rosenbergii* based on relative gene expression in gill tissue	Jasmine Anand, Radhakrishnan, R. Akhila Thomas. A A and J. Jean Jose	Marine Biotechnology	352	E-02
44	Assessment of halo bacterial diversity in salt pans of Cape Comorin coast, India	Prakash Williams. G and Ravikumar. S	Marine Biodiversity	363	D-13
45	Isolation of actinomycetes from sediment samples of Puduponnani mangrove area and its antibacterial activity against selected pathogenic bacteria	Kripa N.V, Reyhanath.P.V. and Ranjeet K.	Marine Biotechnology	372	E-03
46	The seasonal studies on phytoplankton in Ponnani estuary in South West coast of India	Roji M. P. and Razia Beevi M.	Marine Biodiversity	382	D-14
47	Identification of Bioluminescent bacteria, *Photobacterium ferognathi* from Ponnani Estuary	Ramina, P.P, Nahla thahasin M, Mashhoor K and Razia Beevi, M	Marine Biotechnology	395	E-04
48	Isolation and enzymatic screening of actinomycetes from mangrove areas of Ponnani estuary	Reyhanath P.V, Kripa N.V and Ranjeet K	Marine Biotechnology	403	E-05
49	Temporal and species specific variations in community structure of epiphytic microalgae harboured on aquatic macrophytes in a wetland system of Southern India	Shanneeja N.A and S. Suresh Kumar	Marine Biodiversity	421	D-15
50	By-products from Tuna processing wastes- an economic approach to coastal waste management	Sayana K.S and Sirajudheen T.K.	Marine Biotechnology	413	E-06
51	Diversity and abundance of planktons in Manoor Kayal, Malappuram, Kerala	Soumya. E, Febina P.C and Razia Beevi.M	Marine Biodiversity	438	D-16

D-12

Observations on the Cephalopod landings and SSOP at Mudasalodai, Tamil Nadu, India

Lincy Alex[1] and M. K. Anil[2]*

[1]*Department of Zoology, St. Gregorios College, Kottarakara-691531, India*
[2]*Vizhinjam Research Centre of Central Marine Fisheries Research Institute, Vizhinjam-695521, India*
**Corresponding author: lincyjean@gmail.com (Lincy Alex)*

Abstract

Cephalopods including squids, cuttlefishes and octopuses are highly perishable and valuable commodity based on nutritional aspect in the seafood exports from India. Maintenance of its cold chain extending from catch to shipment is very important in export inspections and money value. Sanitation Standard Operation Procedure (SSOP) and Good Manufacturing Practices (GMP) are the major criteria which supports the Hazard Analysis Critical Control Point (HACCP) in keeping the satisfactory remark of Indian seafood exports. The monitoring agencies such as Export Inspection Agency (EIA), Central Institute of Fisheries Technology (CIFT) and Network for Fish Quality Management and Sustainable Fishing (NETFISH) of Marine Products Export Development Authority (MPEDA) are the monitoring agencies providing the awareness. The observations on cephalopod landings excluding octopuses and the SSOP at Mudasalodai Fish Landing Centre at Cuddalore District of Tamil Nadu and coastal hygeine are discussed.

Keywords: SSOP, fish landing centre, southeast coast of India

Introduction

In the fish and fishery products export markets, especially the European Union (EU) and United States (US), India has faced a number of challenges meeting hygiene requirements. Later it was realized that Fishing harbours play an important role in the quality chain of seafood production. Fish landing centres are the major area where fish is handled after landing on shore. Previous studies suggest that seafood exporters in developing countries have experienced problems complying with these requirements (Henson and Mitullah 2004). The EU implemented corresponding requirements governing hygiene in the capture, processing, transportation, and storage of fish and fishery products (Globefish

40	Observations on the Cephalopod landings and SSOP at Mudasalodai, South East coast of India	Liney Alex and M. K. Anil	Marine Biodiversity	330	D-12
41	Threats and prospects of Esturian ichthyofaunal diversity at Pallathuruthy in relation with heavy metal contamination, Kerala, India	Ram S. Dharan, Sherly Williams F	Coastal Pollution	335	B-08
42	*Moringa oleifera* leaves- An immune boost for aquaculture	Veena C.R and George Thomas	Marine Biotechnology	346	E-01
43	Immunomodulatory efficacy of dietary administration of medicinal herb extracts on *Macrobrachium rosenbergii* based on relative gene expression in gill tissue	Jasmine Anand, Radhakrishnan, R, Akbira Thomas, A A and J. Jean Jose	Marine Biotechnology	352	E-02
44	Assessment of halo bacterial diversity in salt pans of Cape Comorin coast, India	Prakash Williams. G and Ravikumar. S	Marine Biodiversity	363	D-13
45	Isolation of actinomycetes from sediment samples of Puduponnani mangrove area and its antibacterial activity against selected pathogenic bacteria	Kripa N.V. Reyhanath.P.V. and Ranjeet K.	Marine Biotechnology	372	E-03
46	The seasonal studies on phytoplankton in Ponnani estuary in South West coast of India	Raji M. P. and Razia Beevi M.	Marine Biodiversity	382	D-14
47	Identification of Bioluminescent bacteria, *Photobacterium leiognathi* from Ponnani Estuary	Ramina, P.P, Nahla thahasin M, Mashhour K and Razia Beevi, M	Marine Biotechnology	395	E-04
48	Isolation and enzymatic screening of actinomycetes from mangrove areas of Ponnani estuary	Reyhanath P.V. Kripa N.V and Ranjeet K	Marine Biotechnology	403	E-05
49	Temporal and species specific variations in community structure of epiphytic microalgae harboured on aquatic macrophytes in a wetland system of Southern India	Shanneeja N A and S. Suresh Kumar	Marine Biodiversity	421	D-15
50	By-products from Tuna processing wastes- an economic approach to coastal waste management	Sayana K.S and Sirajudheen T.K.	Marine Biotechnology	413	E-06
51	Diversity and abundance of planktons in Manoor Kayal, Malappuram, Kerala	Soumya. E, Febina P.U. and Razia Beevi.M	Marine Biodiversity	438	D-16

B-08

Threats and Prospects of Esturian Ichthyofaunal Diversity at Pallathuruthy in Relation with Heavy Metal Contamination, Kerala, India

Rani S. Dharan[*1], *Dr. Sherly Williams E*[2]

[1]*Department of Zoology, St. Grgorios College, Kottarakara-691531, Kerala, India*

[2]*Environmental sciences, Aquaculture and Fish Biotechnology Lab, PG and Research Department of Zoology, Fatima Mata National College (Autonomous), Kollam, 691001, India*

**Corresponding author: raniplr@gmail.com (Rani. S. Dharan)*

Abstract

The study conducted at Pallathuruthy, the meeting point of Pamba River with Vembunad Lake, Kerala, India analyzed the ichthyofaunal density of the area and the quality of water and sediment with respect to five heavy metals viz., copper, zinc, lead, chromium and cadmium. The result showed that the concentration of these heavy metals in water were above the standard limit. In the case of sediments, the cadmium content was critical. The study inferred that the heavy metal contamination of the region can lead to sweep away of many valuable fish species from this ecosystem. The observations made in the study provide prospects for directions towards proper awareness and legislation in order to avoid the imminent depletion of ichthyofaunal diversity at Pallathuruthy.

Key words: Estuary, Pallathuruthy, Ichthyofaunal diversity, heavy metal, ulcerative syndrome

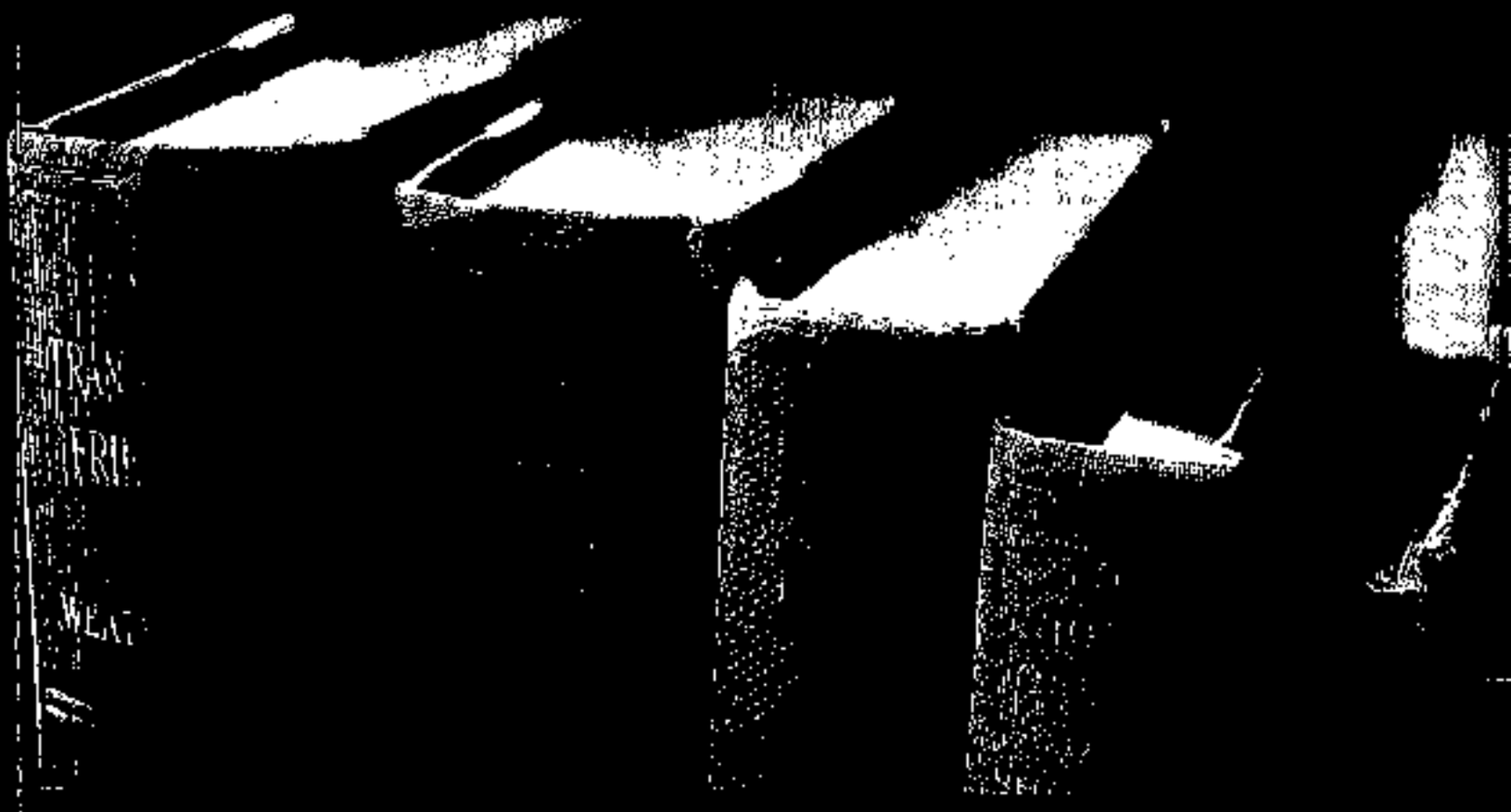
Introduction

A partially bounded brackish water enclosed coastal area with a link to the open sea enriched by a few rivers emptying into it is called an estuary. An estuary is always under the influence of marine and riverine forces like waves, tides, saline intrusion, flow of fresh water and sediments. Because of the influx of nutrients and sediments from sea water and fresh water, estuaries provide ample

ST GREGORIOS COLLEGE
KOTTARAKARA

PG DEPARTMENT OF COMMERCE

KNOWLEDGE MANAGEMENT IN THE EMERGING MARKETS



edited by

DR SUMI ALEX
KEVIN THOMAS VIITOIF
ARUN MOHAN

ST GREGORIOS COLLEGE

KOTTARAKARA

PG DEPARTMENT OF COMMERCE

PROCEEDINGS OF THE UGC SPONSORED NATIONAL SEMINAR ON

KNOWLEDGE MANAGEMENT IN THE EMERGING MARKETS

Edited by

DR SUMI ALEX

KEVIN THOMAS VILLOTH

ARUN MOHAN

English / Educational ||
Knowledge Management
in the Emerging Markets

₹.350

CONTENTS

QUALITY OF WORK LIFE – AN OVERVIEW

***DR. SUMAN ALEXANDER ** MR. LIJO MON L**

(Associate Professor & HOD PG Department Of Commerce, St.Gregorios college, Kottarakara)

(M.Com Student, St.Gregorios college, Kottarakara)

ABSTRACT

In 1995, the University of Pennsylvania took initiatives to broadly introduce the concept "Quality of Work Life" to enhance faculty and staff opportunities for a constructive, productive, and positive work experience. Quality of work life (QWL) refers to the favourableness or unfavourableness of a job environment for the people working in an organisation. The period of scientific management which focused solely on specialisation and efficiency, has undergone a revolutionary change.The traditional management (like scientific management) gave inadequate attention to human values. In the present scenario, needs and aspirations of the employees are changing. Employers are now redesigning jobs for better QWL. This paper will shed some light on aspects such as importance of QWL, major parts of quality of work life, measurement of QWL.Concept of QWL, scope of QWL, various challenges faced in QWL etc.

Key words: *Quality of Work Life (QWL), Job & Career Satisfaction (JCS) scale, Work-Related Quality of Life scale (WRQoL),Brief Index of Affective Job Satisfaction (BIAFJS),General well-being (GWB, Stress at Work sub-scale (SAW), Controle at Work (CAW), Home at work Interface (HWI).*

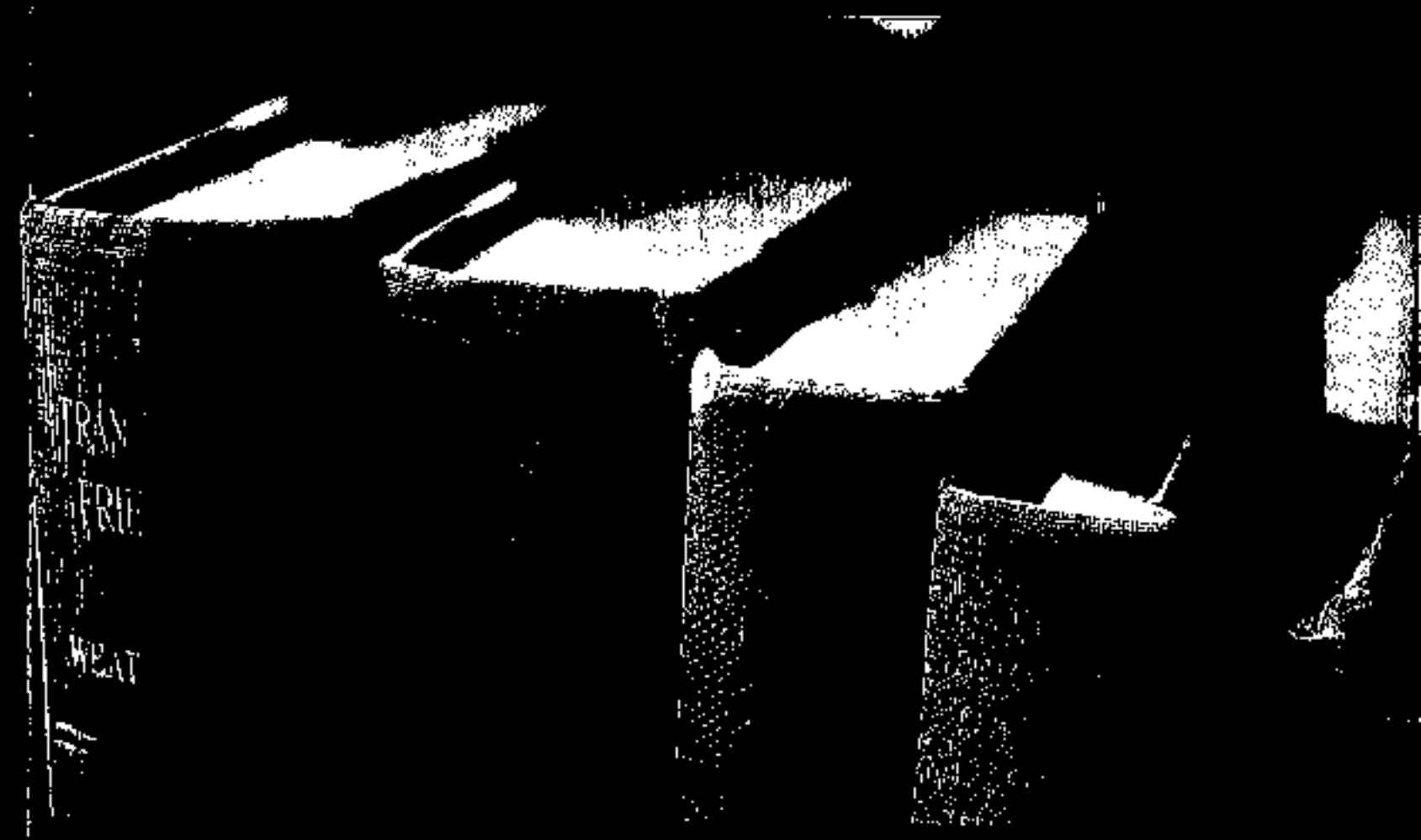
INTRODUCTION

Life on the job is a subject of concern which is not of recent origin. A number of schools of thought come forward into this field, enhancing life in the workplace. They are Human Relations Management by Mayo an MC Gregor, Job enrichment by Hertz Berg and Socio Technical System by Thorsurd and Davis. All these schools of thought finally reach the genaral catch- all term; 'QWL'.Quality of Work life programs has become important in the

ST GREGORIOS COLLEGE
KOTTARAKARA

PG DEPARTMENT OF COMMERCE

KNOWLEDGE MANAGEMENT IN THE EMERGING MARKETS



edited by

DR SUMI ALEX
KEVIN THOMAS VELOTH
ARUN MOHAN

CONTENTS

SOCIAL MEDIA AND KNOWLEDE MANAGEMENT

DR SUMI ALEX

(Assistant Professor,PG Department of Commerce)

ABSTRACT

This paper aims to investigate the role of social networking for knowledge management in organizations that use social networks for communication and collaboration among organizations member. Based on previous literatures paper explains major issues relating to knowledge management and social networks and its role in successful adoption of knowledge management system. Social media platforms from Facebook to Snapchat are an integral part of everyday life for many people and businesses. They let everyone communicate with each other. It's a principle that leads to successful knowledge management at companies because it motivates employees to preserve and share knowledge. It's a fact businesses can use to their advantage by uncovering and making useful the knowledge that lies hidden throughout the company.

INTRODUCTION

In today digital computing environment with rapid change in information technologies organizations face challenges to stay in competing business market, Knowledge is central to most of the daily tasks of knowledge workers, a large category of highly skilled professionals including consultants, lawyers, software developers, web designers, etc. [1], for any organization knowledge consider the main capital asset and an organization should manage its knowledge in a manner that enable organization to use these knowledge correctly in its strategic plans and decision to attain competitive advantage and remain stand in competing market, different knowledge management systems used for this purpose where IT play major role in implementing such systems. One of the emerging technologies that grown rapidly with a huge number of users are social networks where millions of people around the world use these networks every day for different purposes such as communication, collaborate information, sharing images, reading news, etc.Social media gives everyone the ability to discover knowledge and contacts as they exchange information and collaborate, making it an ideal complement to knowledge management. It's no longer unusual in any way to post one's

English / Educational
Knowledge Management
in the Emerging Markets

SUJILEE
PUBLICATIONS

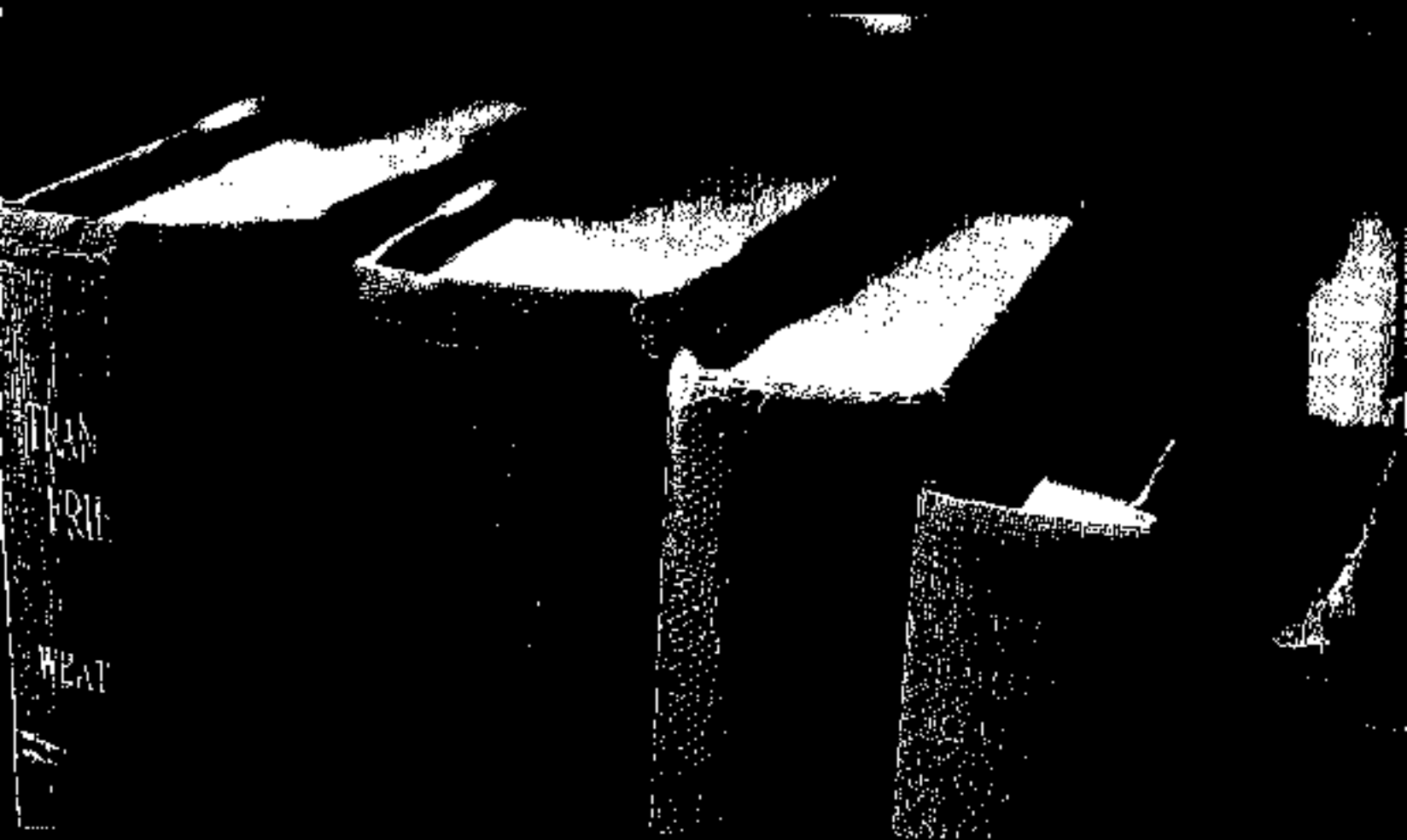
₹350

ISBN 978-93-5382-983-4

ST GREGORIOS COLLEGE
KOTTARAKARA

PG DEPARTMENT OF COMMERCE

KNOWLEDGE MANAGEMENT IN THE EMERGING MARKETS



edited by

DR SUMI ALEX

KEVIN THOMAS VELOTH

ARUN MOHAN

CONTENTS

CRYPTOCURRENCY: A NOVEL DISRUPTIVE INNOVATION FOR KNOWLEDGE RISK MANAGEMENT

ARUN MOHAN

(Assistant Professor, PG Department of Commerce, St Gregorios College, Kottarakara)

ABSTRACT

This paper aims to examine blockchain technology, which is a disruptive innovation of recent years, in the context of knowledge risk management (KRM). It discusses how tacit knowledge of blockchain can be retained in organizations and integrated to production or service process. The Paper examines the KRM process in three knowledge retention stages, namely knowledge acquisition, knowledge transfer and knowledge integration. The core argument of this study is organizations intending to adopt blockchain should improve their KRM capacity before initiating this technology in their business process, whilst this technology is still in its nascent years. Otherwise, there is a huge knowledge management risk for them because they may lose their first-mover advantage against their competitors if they lose their knowledge assets. Their pioneering role can be seized by their rivals.

Keywords :*Block chain _ Disruptive innovation _ Knowledge risk management _ KRM capacity*

INTRODUCTION

Disruptive innovation is one of the fashionable terms of recent years to define new technological developments that impose a change in traditional business models. According to Christensen (1997), disruptive innovation is a creative initiative that disrupts existing knowledge equilibrium in the market and value of the network. It enables challenging with fewer sources against strong incumbent businesses and can also be hurtful to the dominance of strong market players. Therefore, disruptive innovations should be followed closely by the owners and managers of the incumbent businesses to evaluate how this phenomenon can influence their competitiveness. In the case of adoption of disruptive innovation, senior business executives need a strategy to integrate it at the most convenient time (Markides 2006).

In this respect, the blockchain is one of the disruptive innovations of recent years. It is a distributed ledger system where peers can make value transactions without any intermediary, and these transactions are recorded by other members of the network (Nakamoto 2008). Since its first appearance as a virtual currency in the name of Bitcoin, there is an increasing hype

CONTENTS

KNOWLEDGE MANAGEMENT AND GROWTH PERFORMANCE IN FOOD PROCESSING COMPANIES

DR. DEEJA.S

(Guest Lecturer , PG Department of Commerce, St Gregorios College, Kottarakara)

ABSTRACT

Growing companies have long attracted the attention of policy makers worldwide and high growth enterprises are seen as important contributors to employment, innovation, and competitiveness. Growth is commonly equated with the company's success and knowledge is says to be a valuable company resource to increase growth performance in the turbulent business environment. However, ineffective in managing knowledge makes the knowledge irrelevant and not useful for organizations. This paper reviews the concepts of knowledge management and growth performance and proposes a framework for further research in the impact of knowledge management on growth performance of food processing industries.

Keywords: *Knowledge management, growth performance, food processing industry.*

INTRODUCTION

India is one of the leading exporters of the processed food products. It has a competitive edge over other countries due to the wide variety of crops cultivated as a result of geographical and climatic diversity. Government too is trying to support the industry by formulating favourable policies. With adequate government focus on the infrastructural support, research and development and technological innovation in this sector, India could alleviate its domestic concerns on food security, malnutrition and food inflation. Company's growth is commonly equated with success and knowledge has known as a push factor for organization to achieve success and grows of company. Among various resources available to the company, knowledge is the company's valuable resource because it embodies best practices, lessons learned, routines, problem-solving methods and creative processes that are often difficult to replicate. According to Lee and Sukoco (2007) most of organizations that improved their business performance not only dependent on the successful deployment of tangible assets and natural resources but also on the effective management of knowledge. Literature shows that knowledge is a company's valuable resource that provides competitive advantage and can increase growth performance, while knowledge management (KM) is a critical concern for

CONTENTS

KNOWLEDGE MANAGEMENT IN PUBLIC SECTOR ORGANIZATIONS

MRS. JANHAVI PRADEEP

(Guest Lecturer , PG Department of Commerce, St Gregorios College, Kottarakara)

ABSTRACT

Knowledge management has been gaining huge acceptance in the private sector. It is vital for any organization to understand the concept of KM so as to align its KM strategy with the organization's strategy. This is all the more important when it is the public sector because the impact of public sector organizations directly affects the common man.. Key issues, challenges, and opportunities of KM in the public sector need to be addressed and better understood. This study aims to bring a comprehensive understanding of KM application to the public sector and through cases recognizes the initiatives of KM in the Indian public sector organization.

Keywords:*Knowledge management,Public sector organizations*

INTRODUCTION

In today's global economic climate, organizations are seeking to become more operationally efficient, and more effective in achieving their objectives through increased productivity, higher quality, and more knowledge-driven work processes and practices. Citizens are demanding the highest possible value for public money and all organizations, especially public-sector organizations, are looking to significantly reduce costs, improve decision making, and findinnovative ways to develop and grow.Furthermore, public-sector agencies involved in health,education, disaster management, and humanitarian services are looking for innovative ways to harness and apply critical knowledge captured elsewhere .However, the greatest challenge to public-sector organizations lies in their natural inheritance of a mindset of compliance in administration. Furthermore, organizations must bear the periodic discontinuity of leadership in public-sector term appointments. Finally, government and all public-sector organizations need to change, adapt and even, in some instances, reinvent themselves and review their governance. KM has for some time been at the core of government tasks – inseparable from strategy, planning, consultation and implementation

CONTENTS

E-COMMERCE MODELS AND E-MARKETING

SHAJI C JOHN

(Guest Lecturer, PG Department of Commerce, St. Gregorios College, Kottarakara)

ABSTRACT

E-commerce has a significant impact on business costs and productivity. E-Commerce has a chance to be widely adopted due to its simple applications. Thus it has a large economic impact. Electronic Commerce provides the capability of buying and selling products and information on the internet and other on-line service. Electronic commerce or e-commerce refers to a wide range of online business activities for products and services. Electronic commerce is transforming the marketplace by changing firms' business models, by shaping relations among market actors, and by contributing to changes in market structure. It is difficult to single out the impact of electronic commerce. Some businesses addresses three themes associated with electronic commerce and the organizational changes it entails: changes in business models, changes in market structure and opportunities for economic growth created by organizational change.

KEYWORDS: *E-Commerce, e-marketing, models*

INTRODUCTION

E-Commerce plays an important role in the economic growth and development of nation. It is a purposeful activity includes in planning, controlling, promotion and also distribution of various goods and services. In this research paper will describe how the Business spirit play an important role in nation's growth. It also pertains to any form of business transaction in which the parties interact electronically rather than by physical exchanges or direct physical contact. E-commerce is usually associated with buying and selling over the Internet or conducting any transaction involving the transfer of ownership or rights to use goods or services through a computer-mediated network. Though popular, this definition is not comprehensive enough to capture recent developments in this new and revolutionary business phenomenon. A more complete definition is: E-commerce is the use of electronic communications and digital information processing technology in business transactions to create, transform, and redefine relationships for value creation between or among organizations, and between organizations and individuals. While some use ecommerce and e-business interchangeably, they are distinct concepts. In e-commerce, information and

CONTENTS

THE ROLE OF INFORMATION COMMUNICATION TECHNOLOGY IN KNOWLEDGE MANAGEMENT

RENY THOMAS

** *(Guest Lecturer, PG Department of Commerce, St Gregorios College, Kottarakara)*

Knowledge Management (KM) has become the key factor for the success of all organizations. ICTs are technologies which facilitate the management to share knowledge and information. ICTs have a prominent role on Knowledge Management initiatives. In the current business environment, the implementation of Knowledge Management projects has become easier with the help of technological tools. The value of Knowledge Management is more when made available to the right people at the right time. Thus, knowledge sharing is facilitated through information and communication technologies including computers, telephones, e-mail, databases, data-mining systems, search engines, video-conferencing equipment and many more. The purpose of this study is to identify the significant role of information and communication technologies (ICTs) in Knowledge Management (KM) initiatives that lead to organizational effectiveness. This paper moves towards an understanding of the overall importance of ICTs to knowledge management that paves way to achieve organizational effectiveness and insight about the tools and techniques used for implementation of KM and IT's role for enabling KM.. Finally, an integrated model linking ICTs, Knowledge Management processes and organizational effectiveness is done and thereby the relationship between ICTs and KM processes is conceptualized.

Key Words:*Knowledge,Knowledge Management, ICT, Knowledge Management Enablers, Knowledge management in educational institution*

INTRODUCTION

Knowledge is the vehicle for the journey of mankind. Surprisingly, this journey of mankind is only in search of knowledge again. Knowledge always works as a seed for generating more knowledge. Knowledge is commonly referred to as the human ability to effectively use the information available in a specific context for solving specific problems .Knowledge has been increasingly recognized to be a primary source of organizational survival and competitiveness, a truly strategic resource. Knowledge management is a systematic process of managing knowledge assets, processes, and environment to facilitate the creation, organization, sharing, utilization, and measurement of knowledge to achieve the strategic aims of an organization.Rapid changes in the field of knowledge management (KM) have to a

CONTENTS

KNOWLEDGE SHARING – AN IMPORTANT ASPECT IN THE KNOWLEDGE MANAGEMENT PROCESS

ANILA KUNJAPPAN

(Guest Lecturer, St Gregorios College, Kottarakara)

ABSTRACT

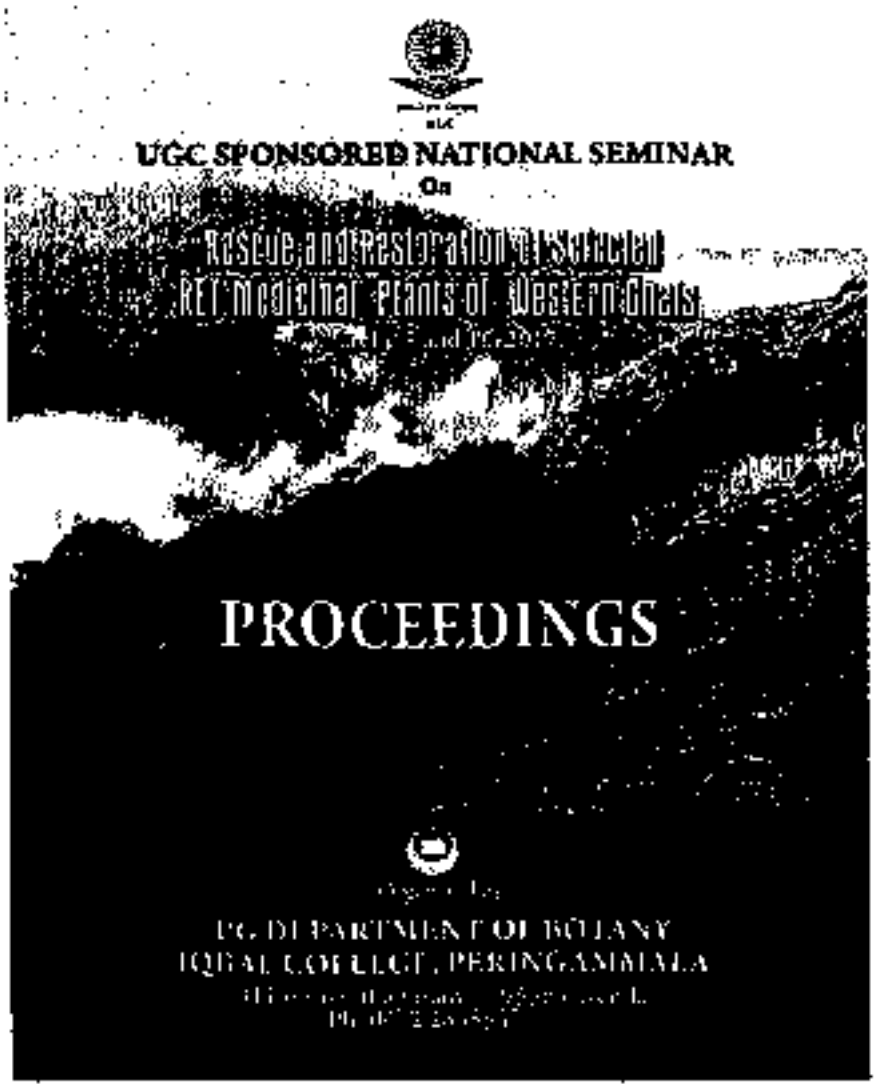
Knowledge management (KM) is the process of creating, sharing, using and managing the knowledge and information of an organisation. It refers to a multidisciplinary approach to achieving organisational objectives by making the best use of knowledge. Knowledge sharing is an important aspect of knowledge management that contributes to enhancing organizational learning to face competition. The success of knowledge management initiatives depends on knowledge sharing. Promoting knowledge creation and knowledge sharing within organizations is an essential challenge in today's business environment. Knowledge sharing is argued to lead to better performance due to improved decision making and better coordination. The effectiveness of a knowledge sharing activities in organization has the potential of improving customer services, bringing new product to market and reducing cost of business operations. Recently, Information Technologies are often used in knowledge management in informing customers and employees of the latest innovation or development as well as sharing knowledge among the employees. In knowledge management, effective knowledge sharing is considered to be one of the most vital components of KM success. Knowledge sharing practice helps organization to improve performance and achieve their mission. This paper tries to explore the importance of knowledge sharing, best knowledge Sharing Practices, tools and strategies for knowledge sharing.

Key Words: *Knowledge Management, Knowledge Sharing, Importance, Knowledge Sharing tools and strategies.*

INTRODUCTION

Knowledge is a familiarity, awareness, or understanding of someone or something, such as facts, information, descriptions, or skills, which is acquired through experience or education by perceiving, discovering, or learning. Knowledge can refer to a theoretical or practical understanding of a subject. Knowledge management is the systematic management of an organization's knowledge assets for creating value and meeting tactical & strategic

[redacted]



Published by

Associated Asia Research Foundation
#384 Ram Pura Yamuna Nagar, HR 135001 INDIA
Website: www.aarfbooks.com
Email: editorial@aarfbooks.com

ISBN: 978-81-936788-4-0

TRADITIONAL HERBAL REMEDIES FOR MANAGEMENT OF FEMALE REPRODUCTIVE DISORDERS BY TRIBES OF ARYANKAVU FORESTS OF KOLLAM DISTRICT, KERALA

[illegible] G.R
Department of Botany, St Gregorios College, [illegible], Kerala, India
E-mail: [illegible]

ABSTRACT

Kerala is rich in its ethnic diversity and has a long history in traditional health practices in local health tradition and home remedies. The tribals still depend on traditional health practices due to the absence of modern health facilities and high cost of modern medicines. Moreover these plants have no side effects. The present work enumerates the traditional uses of around 21 plants belonging to 17 families that are used for various female reproductive problems by the tribes of Aryankavu forests of Kollam district of Kerala. The information was gathered by conducting interviews with the tribal women, grandmothers and traditional healers. Questionnaires were also prepared. Data regarding the plant species, local name, useful part and mode of administration were also recorded. The information on the medicinal uses of plants now seems to be mostly confined to elder people only. Younger generation is not at all aware of these health practices. Hence, there is an urgent need for documentation of this information before it gets vanished. Ethnobotanical documentation is very important for biodiversity conservation. This information will surely help in the development of many novel drugs for female reproductive problems.

Keywords: Traditional herbal remedies, female reproductive problems, ethnic communities, traditional knowledge

INTRODUCTION

Kerala is known for its rich biodiversity, ethnic diversity and traditional knowledge. Traditional remedies are part of the cultural and religious life of the tribal. Plants and humans have an intimate biological relationship since time immemorial. The tribal people mostly depend on forests for their livelihood. Plants and their parts are not only used as food and medicine but also used in various tribal rituals that are a part of their social and religious life. Plants have always been the source of medicines and have many uses to mankind. Some people realise that plants are an important part of our environment. The convenient botanical knowledge of plants and their uses by indigenous culture are not only valuable for conservation of cultural traditions, but also for community healthcare and drug development in the present and future. The tribals have developed their own traditional ways of diagnosis and treatment of diseases and fulfill their basic requirements in this regard from the nearby forest. As a consequence of this long experience and practice, it has become an effective way of accumulation of rich

Comparative Study in the Optical Bandgaps of Cadmium Copper Oxide and Strontium Copper Oxide Nanocomposites

C. R. Indulal[1,a], R. Biju[2], M. Akhil[1], R. Ravikumar[1]

[1]*Department of Physics, S.G. College, Kattarakara, Kerala, India*
[2]*Nanoscience Research laboratory, S.N. College, Kollam, Kerala, India*
[a]Corresponding author: lubrindulal@gmail.com

Abstract. Nanoparticles of Cadmium Oxide (CdO), Copper Oxide (CuO), Strontium Oxide (SrO) along with the nanocomposites of Cadmium Copper Oxide (CdO/CuO) as well as Strontium Copper Oxide (SrO/CuO) were synthesized by chemical co-precipitation method. The samples annealed at 800°C were used for structural and optical studies. Scherrer equation was used to calculate the average particle size of the synthesized nano samples. The optical characterizations of the metal oxide nano samples were carried out by UV/Visible analysis. From the analysis of the absorption spectra, the optical bandgap of the nano samples were calculated in detail. Copper oxide phases are found to be common for both Cadmium Copper Oxide and Strontium Copper Oxide nanocomposites.

INTRODUCTION

Nanomaterials generated through chemical methods have proved to be more effective, providing better control as well as enable different sizes, shapes and functionalization than those generated with other physical methods such as laser ablation, arc-discharge and evaporation. Metal oxide nanoparticles can be produced by soft chemical methods such as co-precipitation, sol-gel and hydrothermal synthesis. Among different chemical methods, co-precipitation has chosen in this work for the synthesis of the nanoparticles of Cadmium Oxide, Copper Oxide, Strontium Oxide and the nanocomposites of Cadmium Copper Oxide as well as Strontium Copper Oxide.

Copper oxide is a potential field emitter that can be used as an effective catalytic agent as well as a good gas sensing material. It is an efficient semiconducting compound with a narrow bandgap and can be used for photoconductive and photo thermal applications. Copper oxide plays an important role in the field of optoelectronics and solar cell applications[1,2]. Recently considerable interest has been focused on copper oxide nanoparticles mainly due to their optical, catalytic, antimicrobial, mechanical and electrical properties[3].

Cadmium oxide nanoparticles are highly reactive and they can be used in energy storage systems, electro chromic thin films, magneto resistive devices and heterogeneous catalysis. Metal nanoparticles with high specific surface area and a high fraction of surface atoms have been studied extensively due to their unique physicochemical characteristics such as catalytic activity, optical properties, electronic properties, antimicrobial activity and magnetic properties[4]. Cadmium oxide has not only the unique optical and optoelectrical characteristics but also has the selective catalytic properties that can be used to photo degrade some of the organic compounds, dyes, pigments and many environmental pollutants.

The recent enzyme-free biosensor is unique and noble research work for ultra-sensitive recognition of BLR with CuO/CdO nanocomposites onto glassy carbon electrode in short response time[5].

About 8% by weight of cathode ray tubes is strontium oxide, which has been one of the major uses of strontium oxide nanoparticles. Lead nano oxide can be used in the neck and funnel, but causes discoloration when used in the faceplate[6].

Cadmium Copper Oxide and Strontium Copper Oxide nanocomposites exhibit unique UV absorbing ability, high stability at high temperatures and reactivity as catalyst.

Proc. Diamond Jubilee Inaugural National Conference on Physics and Chemistry of Materials
AIP Conf. Proc. 2100, 020080-1–020080-4; https://doi.org/10.1063/1.5096514
Published by AIP Publishing. 978-0-7354-1890-1/$30.00

EMERGING CHALLENGES IN BIODIVERSITY CONSERVATION WITH SPECIAL REFERENCE TO RECENT TRENDS IN ECOTOXICOLOGY (ECBCRTET-2018)

Editor in chief

Dr. Bindu V.S
Assistant Professor & Convenor, Biodiversity Club
MSM College, Kayamkulam
And
Convenor, ECBCRTET-2018

Citation:
Proceedings of the National Seminar "Emerging Challenges in Biodiversity Conservation with special reference to Recent Trends in Ecotoxicology" organised by MSM College Kayamkulam, Alappuzha Dt., Kerala from 26 to 27 February 2018

INFLUENCE OF TEMPERATURE IN THE DEVELOPMENTAL STAGES OF *Oithona similis* CLAUS, 1866 (CRUSTACEA: CYCLOPOIDA) REARED IN CAPTIVITY

Jean Jose J* and Liney Alex
Department of Zoology, St. Gregorios College, Kottarakkara-691531, India
*Correspondence Email: jeanjincy@gmail.com

ABSTRACT

Experimental culture of the marine cyclopoid copepod *Oithona similis* in laboratory conditions had five naupliar stages such as: N_1 – 1st day; N_2 – 3rd day; N_3 – 5th day; N_4 – 8th day and N_5 – 10th day. Naupliar stage was followed by six copepodid stages (C_1 – 12th day; C_2 – 14th day; C_3 – 16th day; C_4 – 19th day; C_5 – 21st day; C_6 – 23rd day) and a single pre-adult stage in the laboratory culture conditions. Results divulged that maximum survival of 30% copepodids was attained during 23 days of rearing in culture flasks of 1ℓ capacity provided with micro algal diet size <5µ and temperature ranging from 25±2°C.

Keywords: Experimental culture, *Oithona similis*, developmental stages, temperature

INTRODUCTION

Copepods form an important component in the aquatic food chain particularly fish larvae and crustaceans, culture trials aimed at establishing a reliable mass production system were attempted by several earlier workers (Jean *et al.*, 2014; 2016). Extensive cultures of copepods have already been achieved in order to supply aquaculture industries and aquarium trade needs requiring high quality live feed (Wilcox *et al.*, 2006). Information on the mass culture copepod from India is limited to the calanoid copepods *Euterpina acutifrons* and *Pseudodiaptomus serricaudatus* (Gopakumar and Santhosi, 2009) and cyclopoid copepod *Oithona rigida*. (Santhanam and Perumal, 2012).

The main objectives of this study were cost effective experimental culture of *Oithona similis* in laboratory conditions and to observe their different developmental stages.

MATERIALS AND METHODS

In the cost effective method, prior importance was given in choosing low cost culture flask and light source with repeated trials, the micro algal culture was standardized using Polyethylene terephthalate (PET) bottles. Micro algal cultures of *N. oculata* and *I. galbana* were maintained in used transparent PET bottles of 1.5ℓ capacity at 25.0±3.0°C.

ISBN: 978-81-935819-1-9

PROCEEDINGS

INTERNATIONAL CONFERENCE ON CHEMISTRY AND PHYSICS OF MATERIALS

(ICCPM 2018)

19-21 DECEMBER 2018
THRISSUR, KERALA, INDIA

Editors:-
Dr. Joby Thomas K, Dr. Jinish Antony M, Dr. Jency Thomas, Dr. Joseph Joly V.L.

RESEARCH & POST GRADUATE
DEPARTMENT OF CHEMISTRY

ST. THOMAS' COLLEGE (Autonomous)
Thrissur, Kerala, India - 680001

Aided by Govt. of Kerala
College with Potential for Excellence

Affiliated to University of Calicut
Nationally Re-accredited with 'A' Grade

IQAC

ACS Chemistry for Life®

ROYAL SOCIETY OF CHEMISTRY

SERB INDIA

ICCPM2018P029

Simultaneous Voltammetric Determination of Morphine, Uric acid and Ascorbic acid at Molybdenum-Curcumine/Reduced graphene Oxide Modified Electrode.

Pinky Abraham[1], Renjini S[2] and T. E. Mary Nancy[3]

1. Department of Chemistry St.Gregorios College Kottarakkara

2. Department of Chemistry Sree Narayana College for Women Kollam

3. Department of Chemistry, Fatima Mata National College (Autonomous) Kollam,

*pinkyabrahampanavila80@gmail.com

Introduction

Many researchers have used diversely modified electrodes to study the electrochemical oxidation of Morphine (MO). The re are reports using glassy carbon electrodeGold nanoparticle modified carbon paste electrode, Glassy carbon electrode modified with multiwalled carbon nanotube/chitosan composite, GCE modified with chitosan coated Fe_3O_4 magnetic nanoparticle, Graphene nano sheet modified glassy carbon electrode, Ionic liquid type multiwalled carbon nanotube paste electrode [1-4]. All of these available reports explain the electro oxidation of MO highlighting the anodic oxidation of its phenolic group. The present work reports the determination of MO using modified electrode Molybdenum/Curcumine/Reduced graphene oxide/GCE via oxidation of its phenolic and tertiary amine groups. An increased sensitivity towards the oxidation of its tertiary amine group is also observed.

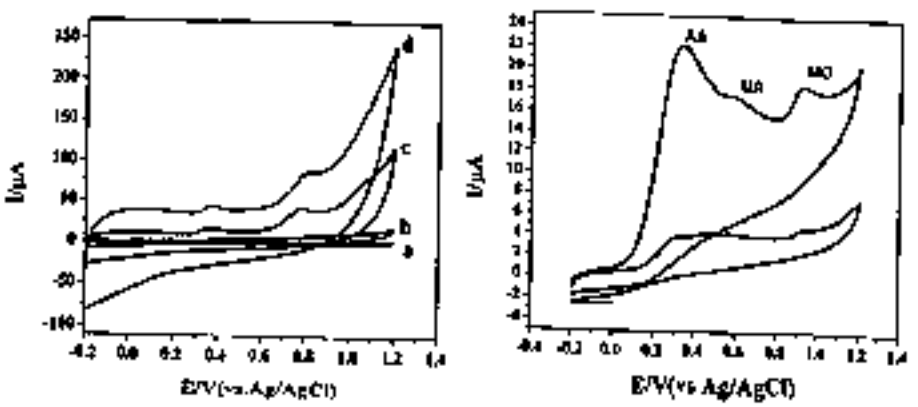
Experimental

- The fabrication of the electrode was done by the addition of MoS_2-RGO composite with curcumine.
- FTIR, PESEM., Cyclic voltammetry (CV) and differential pulse voltammograms (DPVs) and chronoamperometry were used for the characterization of the modified electrode.

Results and discussion

The surface morphology of (a) MoS2/curcumine and (b)RGO/ MoS2/curcumine were examined by Scanning Electron Microscopy (SEM) as shown in fig 1. The morphology features a porous network structure. The FTIR confirms the formation of composite [5]

The electrochemical behaviour reveals that this composite have more sensitivity, low detection limit and interference effects as compared to bare glassy carbon electrode (GCE)



B. J. M. GOVT. COLLEGE

CHAVARA, KOLLAM 691 583

Proceedings of the National Seminar

Recent Research and Developments in Chemistry (RRDC 2018)

30 & 31 October 2018

Organised by
Department of Chemistry
(In association with ACT)
B. J. M. Govt. College
Chavara, Kollam

Sponsored by
Department of Collegiate Education
Government of Kerala

ISBN 978-93-5321-402-9

[1] X.Y. Chen, Bin Zhao, Wei Shi, Jun Xia et.al, Coord. Chem. Rev., 358 (2018), 125-152.

[2] Z. Kang, L.Fan and D.Sun, J. Mater. Chem. A, 5 (2017), 10073-10091.

[3] J.H. Liao, C.S.Tsai, T.K. Lin, Inorg. Chem. Commun. 13 (2010) 286-289.

[4] P. Qi, B.Wang, J. Mater. Chem. C, 2014, 2, 6758.

[5] H. Wang, H. Liu,T. Chu, Y. Yang, Y. Hu, W.Liu and S.Weng Ng, RSC Adv.,4 (2014), 14035-14041.

[6] B.Li, Y.Zhang, D.Ma, L.Li, G.Li, Z.Shi and S.Feng, Chem. Commun., 48 (2012), 6151-6153.

[7] G. M. Sheldrick, SHELXL 97 Program for Crystal Structure Refinement, University of Gottingen, 021997.

[8] K. Brandenburg, DIAMOND, Version 3.1f, Crystal Impact GbR, Bonn, Germany, 2008.

[9] S. M. Roy, M.R. Sudarsanakumar, S. Suma, M.R. Prathapachandra Kurup, V.S. Dhanya and R.M. Nair, Inorg.Chem. Commun., 40 (2014), 200-204.

[10] R. Drisya, U.S. Soumya Mol, P.R.S Chandran, C.K. Simi, M.R. Sudarsanakumar and P.K. Sudhadevi Antharjanam, Main Group Chem,16 (2017), 241-254.

[11] K. Nakamoto, Infrared and Raman Spectra of Inorganic and Coordination Compounds, fifth ed., John Wiley and Sons, New York., 1997.

[12] N.Schieber, S.Combs, R.Vakiti et.al, J. Coordn.Chem, 65, 2012, 4177-4188.

[13] W. Starost, J. Leciejewicz,et.al, J. Coordn.Chem, 59, 2006, 557-564.

OP 06

Comparative study on the anti E-coli activity of amblyone: A phytochemical from Amorphophallus Paeoniifolius and the drug Ciprofloxacin using Insilico Analysis

Aiswarya R.[1], Anju Alex[2*]

[1]PG Scholar, Department of Chemistry, St. Gregorios College, Kottarakara

[2*]Assistant Professor, Department of Chemistry, St. Gregorios College, Kottarakara

aisuadhi@gmail.com, anjukuzhivila@gmail.com

Abstract

Amorphophallus paeoniifolius, an annual herb of Araceae family, is traditionally used as medicine against various diseases. It is commonly found in India and in manytropical countries. Amblyone, a triterpenoid from the tuber of Amorphophallus paeoniifoliusis suspected of having a good antibacterial activity especially against gram negative strains of

B. J. M. GOVT. COLLEGE

CHAVARA, KOLLAM 691 583

Proceedings of the National Seminar

Recent Research and Developments in Chemistry
(RRDC 2018)

30 & 31 October 2018

Organised by
Department of Chemistry
(In association with ACT)
B. J. M. Govt. College
Chavara, Kollam

Sponsored by
Department of Collegiate Education
Government of Kerala

ISBN 978-93-5321-402-9

through the carbonyl-oxygen and the azomethine-nitrogen, and so acts as a neutral bidentate ligand with the NO donors. The two NO_3^- anions are localized in the outer coordination sphere of the metal. Intermolecular hydrogen bonding and C–H···π interactions combine to stabilize the crystal structure. The Co(II) complex was screened for its antibacterial and cytotoxic activity

KEY WORDS: Semicarbazone; Cobalt(II); X-ray diffraction; Magnetic susceptibility measurements; Antimicrobial studies, Cytotoxicity.

PP 12

Synthesis, Characterization and thermal studies of La(III), Tb(III) and Dy(III)complexes of hippuric acid

Jisha K. R.[a], Suma S.[b] and Sudarsanakumar M. R.[c]
a Department of Chemistry S.G.College, Kottarakara
b Department of Chemistry S. N. College, Chempazhanthy
c Department of Chemistry, M. G. College, Thiruvananthapuram
jisha145@gmail.com

Abstract

Lanthanide complexes containing carboxylate ligands are the most largely investigated kind of coordination compounds due to the higher thermal and luminescent properties which make them potential candidates for organic electro luminescent device applications and fluroimmuno assay agents[1]. For the present study La(III), Tb(III) and Dy(III) complexes of hippuric acid(hipH) has been prepared. The solid complex was characterized by elemental analysis, molar conductivityand magnetic measurement, and spectroscopic methods such as IR and Raman spectroscopy. The thermal analysis of the complexes was also carried out by TG/DTG techniques. The elemental analysis, molar conductance and magnetic measurement suggest the composition as $[Ln(hip)_3].nH_2O$. IR spectra indicate that hippuric acid acts as a bidentate monoionic ligand coordinating through the oxygens of carboxylate group. The presence of functional groups is also confirmed by FT Raman spectral studies. The IR spectra indicate the presence of lattice water molecule, which is further confirmed by TG/DTG analysis.

About the ligand - hippuric acid

Hippuric acid is one of the amino acid present in the herbivorous animals and humans. Hippuric acid is a monocarboxylic acid with three types of donor sites, the nitrogen and oxygen atoms of the amide group and the oxygen atoms of the carboxylic acid group

ST GREGORIOS COLLEGE
KOTTARAKARA

PG DEPARTMENT OF COMMERCE

PROCEEDINGS OF THE INTERNATIONAL SEMINAR ON

Edited by

Dr. SUMI ALEX
Asst. Prof KEVIN THOMAS VILLOTH
Asst. Prof ARUN MOHAN

ST GREGORIOS COLLEGE
KOTTARAKARA

PG DEPARTMENT OF COMMERCE

PROCEEDINGS OF THE INTERNATIONAL SEMINAR ON

Edited by

Dr. SUMI ALEX
Asst. Prof KEVIN THOMAS VILLOTH
Asst. Prof ARUN MOHAN

CONTENTS

A STUDY ON CSR ACTIVITIES OF SMEs UNDERTAKEN BY WOMEN ENTREPRENEURS

***Dr .Deeja S** ***Sarath Sajan** ***Reny Thomas**

Guest Lecturers , PG Department of Commerce, St Gregorios College, Kottarakara

ABSTRACT

Corporate Social Responsibility (CSR) can be defined as the management of convivial, environmental, economical and ethical concepts and firms' sensitivities towards prospects of the stakeholders. Female entrepreneurs must take part in planning and implementing Corporate Social Responsibility (CSR) initiatives to make the private sector responsive to the need of society, urged an official at the Ministry of Economy. Corporate convivial responsibility has historically been associated with immensely colossal corporations but apperception of the growing paramount of the SME sector has led to an accentuation on their gregarious and environmental impact. The role and impact of minuscule and medium enterprises (SMEs) in the economy denotes that it is becoming increasingly arduous to dismiss the paramount of the latter in gregariously germane issues as consequential as employment, innovation and standard of living. Through content analysis, this study mainly provides a literature survey about the concept of Corporate Convivial Responsibility (CSR) in cognation to quality management in SMEs.

Keywords: *Corporate social responsibility, CSR activities, women entrepreneurs*

INTRODUCTION

Ethical comportment of businesses around the world is on the radar of all stakeholders. Business refers to economic organizations making economic decisions, whereas decisions predicated on principles of ethics take into consideration non-economic reasons including rights and equity. During the past decennium, Corporate Convivial Responsibility (CSR) has gained paramount consequentiality ecumenically, albeit responsible deportment of firms has a long history. CSR in the present context is visually perceived beyond the philanthropic context. It is not just a buzzword but rather is looked upon as an implement for sustainable business magnification. CSR is perhaps as old as business itself and in some societies one cannot do business without being gregariously responsible.

Businesses in the twenty-first century must not only provide goods and accommodations to gratify customer needs, they must withal gratify the overall desiderata of the society. Multiple stakeholders judge companies predicated on a variety of criteria. Regimes want companies to adhere to all regulations,

ST GREGORIOS COLLEGE
KOTTARAKARA

PG DEPARTMENT OF COMMERCE

PROCEEDINGS OF THE INTERNATIONAL SEMINAR ON

Edited by

Dr. SUMI ALEX
Asst. Prof KEVIN THOMAS VILLOTH
Asst. Prof ARUN MOHAN

CONTENTS

A STUDY ON CSR ACTIVITIES OF SMEs UNDERTAKEN BY WOMEN ENTREPRENEURS

***Dr .Deeja S *Sarath Sajan *Reny Thomas**

Guest Lecturers , PG Department of Commerce, St Gregorios College, Kottarakara

ABSTRACT

Corporate Social Responsibility (CSR) can be defined as the management of convivial, environmental, economical and ethical concepts and firms' sensitivities towards prospects of the stakeholders. Female entrepreneurs must take part in planning and implementing Corporate Social Responsibility (CSR) initiatives to make the private sector responsive to the need of society, urged an official at the Ministry of Economy. Corporate convivial responsibility has historically been associated with immensely colossal corporations but apperception of the growing paramount of the SME sector has led to an accentuation on their gregarious and environmental impact. The role and impact of minuscule and medium enterprises (SMEs) in the economy denotes that it is becoming increasingly arduous to dismiss the paramount of the latter in gregariously germane issues as consequential as employment, innovation and standard of living. Through content analysis, this study mainly provides a literature survey about the concept of Corporate Convivial Responsibility (CSR) in cognation to quality management in SMEs.

Keywords: *Corporate social responsibility, CSR activities, women entrepreneurs*

INTRODUCTION

Ethical comportment of businesses around the world is on the radar of all stakeholders. Business refers to economic organizations making economic decisions, whereas decisions predicated on principles of ethics take into consideration non-economic reasons including rights and equity. During the past decennium, Corporate Convivial Responsibility (CSR) has gained paramount consequentiality ecumenically, albeit responsible deportment of firms has a long history. CSR in the present context is visually perceived beyond the philanthropic context. It is not just a buzzword but rather is looked upon as an implement for sustainable business magnification. CSR is perhaps as old as business itself and in some societies one cannot do business without being gregariously responsible.

Businesses in the twenty-first century must not only provide goods and accommodations to gratify customer needs, they must withal gratify the overall desiderata of the society. Multiple stakeholders judge companies predicated on a variety of criteria. Regimes want companies to adhere to all regulations,

ST GREGORIOS COLLEGE
KOTTARAKARA

PG DEPARTMENT OF COMMERCE

PROCEEDINGS OF THE INTERNATIONAL SEMINAR ON

Edited by

Dr. SUMI ALEX
Asst. Prof KEVIN THOMAS VILLOTH
Asst. Prof ARUN MOHAN

CONTENTS

A STUDY ON CSR ACTIVITIES OF SMEs UNDERTAKEN BY WOMEN ENTREPRENEURS

***Dr .Deeja S *Sarath Sajan *Reny Thomas**

Guest Lecturers , PG Department of Commerce, St Gregorios College, Kottarakara

ABSTRACT

Corporate Social Responsibility (CSR) can be defined as the management of convivial, environmental, economical and ethical concepts and firms' sensitivities towards prospects of the stakeholders. Female entrepreneurs must take part in planning and implementing Corporate Social Responsibility (CSR) initiatives to make the private sector responsive to the need of society, urged an official at the Ministry of Economy. Corporate convivial responsibility has historically been associated with immensely colossal corporations but apperception of the growing paramount of the SME sector has led to an accentuation on their gregarious and environmental impact. The role and impact of minuscule and medium enterprises (SMEs) in the economy denotes that it is becoming increasingly arduous to dismiss the paramount of the latter in gregariously germane issues as consequential as employment, innovation and standard of living. Through content analysis, this study mainly provides a literature survey about the concept of Corporate Convivial Responsibility (CSR) in cognation to quality management in SMEs.

Keywords: *Corporate social responsibility, CSR activities, women entrepreneurs*

INTRODUCTION

Ethical comportment of businesses around the world is on the radar of all stakeholders. Business refers to economic organizations making economic decisions, whereas decisions predicated on principles of ethics take into consideration non-economic reasons including rights and equity. During the past decennium, Corporate Convivial Responsibility (CSR) has gained paramount consequentiality ecumenically, albeit responsible deportment of firms has a long history. CSR in the present context is visually perceived beyond the philanthropic context. It is not just a buzzword but rather is looked upon as an implement for sustainable business magnification. CSR is perhaps as old as business itself and in some societies one cannot do business without being gregariously responsible.

Businesses in the twenty-first century must not only provide goods and accommodations to gratify customer needs, they must withal gratify the overall desiderata of the society. Multiple stakeholders judge companies predicated on a variety of criteria. Regimes want companies to adhere to all regulations,

ST GREGORIOS COLLEGE
KOTTARAKARA

PG DEPARTMENT OF COMMERCE

PROCEEDINGS OF THE INTERNATIONAL SEMINAR ON

Edited by

Dr. SUMI ALEX
Asst. Prof KEVIN THOMAS VILLOTH
Asst. Prof ARUN MOHAN

CONTENTS

GREEN ENTREPRENEURSHIP IN INDIA

Dr. SATHEESHBABU A T

Assistant Professor In Commerce, Govt Arts College, Trivandrum

ABIN P JOSE

Assistant Professor In Commerce, St Gregorios College, Kottarakkara

ABSTRACT:

Technological advancement and changes in social and economic conditions has led a major shift in consumer's tastes and preferences. Various studies carried over on consumer's preferences have eminently shown that individuals are now health and environment conscious. It may be a key object that every company is trying to fill up the vacuum by offering eco-friendly products and tend to adhere to green marketing practices. This impression has ultimately developed a new breed-'Green entrepreneurs' who aim to hit this untapped desire of consumers by offering green products and by adopting green strategy to attract them. Since last decade the concept Green entrepreneurship is gradually escalating and has caught world's attention in a big way. In fact adopting eco-friendly business practices can open up new array of opportunities for beginners, to outshine in entrepreneurship world. To strengthen Indian economy, Green entrepreneurship is coming up as a driving power by providing innovate green products to society at large. This paper tries to study and understand the potential opportunities and challenges faced by green entrepreneurs in India. It attempts to provide directions and viable solutions to prevent further ecological degradation through green entrepreneurship.

KEYWORDS:*Green market, Environment, Green entrepreneurs, Sustainable Development*

INTRODUCTION

In recent times the businesses around the world are witnessing things that are varying like never before due to technological advancement, change in economy and political influences. Because of advancement in technology and changes in standards of living conditions of consumers there has been a major shift tastes and preferences also. Various studies carried over on consumer's preferences have eminently shown that individuals are now health and environment conscious. It may be a key object that every company is trying to fill up the vacuum by offering eco-friendly products and tend to adhere to green marketing practices. This impression has ultimately developed a new breed- 'Green entrepreneurs' who aim to hit this untapped desire of consumers by offering eco-friendly products and by adopting green strategy to attract them. Since last decade the concept Green entrepreneurship is gradually escalating and has caught world's attention in a big way. The concept of green entrepreneurs is not only helping consumer in getting their green products and services but also make people learn towards greening ecosystem. But green entrepreneurs also face challenges such as lack of substitution of the conventional products, cost controlling, redesigning, raw material and lack of R&D infrastructure etc. These challenges can be reduced in further development. On the other hand it is also true that successful green entrepreneurs create changes in the

CONTENTS

A STUDY ON THE EFFECTIVENESS OF SUKANYA SAMRIDDHI YOJANA AS AN INNOVATIVE WOMEN EMPOWERMENT AND SOCIAL PROTECTION SCHEME - WITH SPECIAL REFERENCE TO KOTTAYAM DISTRICT

RESHMA ROY

Assistant Professor, Research & PG Department of Commerce

Marian College, (Autonomous)

ABIN P JOSE

Assistant Professor in Commerce

PG Department of Commerce, St. Gregorios College, Kottarakkara

1. ABSTRACT

Sukanya Samriddhi Scheme is an initiative by Indian government. It is a small saving scheme launched on 22nd January 2015 in Panipat, Haryana by honorable Prime Minister Narendra Modi. This is a girl child prosperity scheme under Beti Bachao Beti Padhao program of PM Narendra Modi. The idea behind the scheme is to ensure a bright future to girl child in India by providing financial support for their education and marriage. This scheme also supports the economic development of the country by supporting the girl education. It also increases the literacy rate of females, which helps in increase of the incomes and standard of living of people. This scheme leads to overall development of country, as the girls education also helps in decreasing the population. The objective of the paper is to study the concept and benefits of SUKANYA SAMRIDDHI SCHEME.

Key Words: ***Sukanya Samridhi Scheme, Women Empowerment, Social Protection.***

2. INTRODUCTION

A welfare state is a political system wherein the State assumes responsibility for the health, education, and welfare of society. The system of social security in a welfare state provides social services, such as universal medical care, unemployment insurance for workers, financial aid, free post-secondary education for students, subsidized public housing, and pensions. Social welfare activities provide a venue for growth, innovation and continue to be the epicenter for economic developments for any nation. The welfare and development of the backward areas is and should always be the prime objective of any government in any nation.

If there is a hero to a movie there is also a villain and here that role is played by major social evils such as female feticide and female infanticide. Women had reached till moon but still people think that they are useless. There is this permanent image of females in people's mind that girl can't take place of a male. Lower class people also think that having a girl is pointless because she won't stay with them for whole life because she has to leave them after getting married. The girl won't be able to keep the name of her family.

CONTENTS

A STUDY ON CHALLENGES, GROWTH AND DEVELOPMENT OF WOMEN ENTREPRENEUR IN INDIA

Janhavi Chaidhanya G.

Lecturer, St.Gregorios College, Kottarakara

Abstract

Development of a country depends on a large extent on the development of women workforce. Globalization and liberalization helped in the growth of women entrepreneurship in the world. Today's society is witnessing the growth of women in the important sectors of the society which paved the way for total growth of the economy. Women are adapting new ventures through their skill and capability So many women entrepreneur are holding major positions in different sectors of the economy. their success is a huge motivation for the other women in the society. These women entrepreneurs emerged successful after facing so many barriers in this field. So many measures are taken by government to encourage female entrepreneurs. In this study we will analyze the challenges faced by women entrepreneurship and the various measures taken by Indian government for the empowerment of women.

Keywords: *women entrepreneur, challenges, government measures*

Introduction

The Government of India has defined women entrepreneur as "an enterprise owned and controlled by a women having a minimum financial interest of 51 per cent of the capital and giving at least 51 per cent of the employment generated in the enterprise to women. "Women workforce is a major element in the development of our country. After liberalization and globalization a lot of changes have been witnessed in the business world. Till 1991 women are engaged in the household activities only but after liberalization a major population of women started showing their talents in many sectors of economy. They are keen to adopt challenges and strived a lot to prove themselves a success in the field of business sector. But still out of total women population only 28% are proven successful in various sectors. As women constitute half of the population any plan of action for growth of the economy will be warped without considering women as a part of it. Most of the women entrepreneurs back out due to the challenges which is difficult for them to handle. Development of a country depends upon how well educated and successful are the women population of that country, so government should take necessary steps for the development of women entrepreneurs of our country. As compared to other countries the growth of women entrepreneurship is very low in India. So development of women workforce is a very crucial subject matter in India.

Objective

1. To study the challenges faced by women entrepreneurs in India.
2. To analyse the measures taken for the growth and development of women entrepreneurs.

CONTENTS

PROBLEMS FACED BY WOMEN ENTREPRENEURS

Divya B Prakash

Guest Lecturer, St. Gregorios College, Kottarakkara

Abstract

Traditional societies warrant voice of women was reverberate within the four walls of the houses by performing only household activities. But now they have turned out by breaking all the boundaries and participate in a wide range of activites of activities which men perform. According to Pandit Jawaharlal Nehru "When women move forward, the family moves, the village moves and then ultimately the Nation moves forward." Half of the world's population is comprised of women. When the creativity and talent of women are backed by adequate support, it is the ideal way to build up a nation with economic stability and self-reliance. Women entrepreneurs play a significant role in spurring economic development and job creation with their unique ability of communication, organization and networking skills. Since risk is inseparable from business, women have to face more challenges than men while encountering with the business risk. An effort has been made in this paper to examine the challenges that a female entrepreneur faces.

Key Words: *Entrepreneurs, Entrepreneurship, Women entrepreneurs*

Introduction

According to APJ Abdul Kalam, "Empowering women is a prerequisite for creating a good nation, when women are empowered, society with stability is assured; empowernent of women is essential as their thoughts and their value systems lead to the development of a good family, good society and ultimately a good nation."

Women Entrepreneurs may be defined as the women or a group of women who put an effort to start and operate a business venture. A women entrepreneur performs several functions. They explore the prospects of beginning new enterprise, undertake risks, introduce new innovations, coordinate, administrate and manage business and provide effective leadership in all aspects of business. Women Entrepreneurs are extremely increasing in the economies of almost all countries as they are able to think things differently and creativity has become a major commodity in the workplace. The hidden business talents of women have been increasing with the growing sensitivity to the role and economic status of women within the society. The cognitive knowledge, flexibility and ability in business are the major reasons for women to come forward for undertaking business ventures. It is an opportunity for women with innovative ideas to start a business venture by themselves, as other companies may fail by undervaluing their creative ideas. Usually they give more importance to collaboration than competition.

All business people face certain challenges and because of gender, women have some additional challenges and obstacles than male entrepreneurs. Entrepreneurship is no longer considered a man's domain. When it comes to catching up with their male counterparts, women are leaving their marks in the business world and taking it by storm. But there is no doubt that even today female entrepreneurs face challenges that are not known to their male counterparts.

CONTENTS

"ROLE OF MICROFINANCE ON WOMEN EMPOWERMENT IN INDIA"

Josymole T J
Guest Lecturer in Commerce, St. Gregorios College Kottarakara

Abstract

In India, the emergence of liberalization and globalization in early 1990's aggravate the problem of women workers in unorganized sectors from bad to worse as most of the women who were engaged in various self employment activities have lost their livelihood. Despite in substantial contribution of women to both household and national economy, their work is considered just an extension of household domain and remains non-monetized. In India, Microfinance scene is dominated by Self Help Group (SHGs) as an effective mechanism for providing financial services to the "Unreached Poor", and also in strengthening their collective self help capacities leading to their empowerment. Rapid progress in SHG formation has now turned into an empowermentmovement among women across the country. Micro finance is necessary to overcome exploitation, create confidence for economic self reliance of the rural poor, particularly among rural women. Although no 'magic bullet', they are potentially a very significant contribution to gender equality and women's empowerment. Through their contribution to women's ability to earn an income, these programmes have potential to initiate a series of 'virtuous spirals' of economic empowerment, and wider social and political empowerment. The results from these self-help groups (SHGs) are promising and have become a focus of intense examination as it is proving to be an effective method of poverty reduction and economic empowerment. Mainly on the basis of secondary data analysis, thispaper attempts to highlight the role of Microfinance and SHGs in the empowerment of women in India.

Introduction

Till recently, economic growth of a nation was observed and measured on the grounds of quantitative changes in goods and services produced. But now, along with the quantity of goods and services produced, the qualitative changes in the life of residents of nation are included in the measuring yard of economic development of an country. Equal, sustainable and hormonal development of a nation along with its mankind is a necessary condition, this can be achieved through equal economic participation of both the sexes. In India participation of women in economic activities is considerably poor, and ignoring their contribution in the development will handicap the process of growth of nation, which is undesirable in the present globalized scenario, especially for a fast developing nation like India.

CONTENTS

A STUDY ON THE ROLE OF GOVERNMENT AND COMMERCIAL BANKS IN THE DEVELOPMENT OF WOMEN ENTREPRENEURSHIP

RENI ROYSON

Research Scholar, Department of Commerce, Mar Ivanios College

Dr SUMI ALEX

HOD, PG Department of Commerce, St Gregorios College, Kottarakkara

ABSTRACT

In the last two decades, women-owned businesses have picked up a high pace in India. The emergence and growth of women-owned enterprises have greatly contributed towards the economic growth and development of India. In our country most of the women enterprises are related to service sectors. Women entrepreneurs have contributed not only for economic development but also provided opportunity for employment especially for women job-seekers. However, it is to be taken into consideration that woman entrepreneurs have to face a lot of hurdles and problems especially in fund generation. A women entrepreneur should have a good source of knowledge with regard to finance. Finance is the backbone of any firm, and lack of adequate financial support makes it very difficult to carry forward the business activities. The researcher has focused on the role of banks and their contributions in encouraging women entrepreneurs. Recently Narendra Modi government has made a call for make in India and encourages young Indian talents to start their own new business or undertake ventures.After that many new entrepreneurs came forward to start business. At the same time the role of financial institution increased as they should meet the need of financial assistance to new startup company. Entrepreneurship development is a concept that has to do with the formation, financing, growth and expansion of business or enterprises in an economy.

KEYWORDS: *Women entrepreneurship, role of government, commercial banks*

INTRODUCTION

Entrepreneurship development is the key to economic development of a country. There is growing realization about potential contribution of small enterprises in both developed and developing countries. Healthy small business sector is rightly considered the backbone of any developed economy. Entrepreneurship training in most countries of the world is being increasingly tried to promote local entrepreneurship and accelerate the pace of small enterprise development. Research studies conducted in USA suggest positive link between economic development and entrepreneurship. Developing economies like India, China, Pakistan, Srilanka, Malaysia and many other South Asian countries have always considered small business sector as an important sector of economy. Moreover, in India, the post-liberalization and globalisation era has brought with it a growing middle class - roughly estimated to be 250 million and rising disposable incomes.

CONTENTS

DIFFERENTLY ABLED WOMEN ENTREPRENURS – A REVIEW

SHAJI C JOHN
Research Scholar, Department of Commerce, Mar Ivanios College, Trivandrum

Dr SUMI ALEX
HOD, PG Department of Commerce, St Gregorios College, Kottarakkara

ABSTRACT

Many women have found that in order to have the lifestyle they want working in the corporate world is simply too restrictive. Set hours requiring you to commute to an office, clock in and out, then ask for permission to slightly change your schedule – is simply not conducive to an active and busy life. Women with children find the regular work schedule to be even more difficult to manage. Any mom knows that your kids do not pick the most appropriate time to get sick or have a school play, so the juggling continues. Working for yourself allows women to have increased freedom over their schedule, work objectives, priorities, and lives. For women with disabilities being self employed provides even further benefits. Often people with disabilities are discriminated against in the workplace. While there are laws in place to prevent this, the laws cannot change people's underlying perceptions of whether or not someone is capable of doing a job. As many disabled people will tell you – their disability does not prevent them from living and doing things. It simply requires them to do it differently. Overcoming perceptions at work can be an uphill battle that is not a productive use of energy. By starting their own business disabled women have proven that they can do whatever they set their mind to and they can do it by creating their own rules -- not following someone else.

KEYWORDS: *Entrepreneur, Women Entrepreneur, Disability, Differently abled, Disabledwomen Entrepreneur.*

INTRODUCTION

An Entrepreneur

To fully understand the concept "entrepreneurship", it is necessary to unpack the word entrepreneur. First of all, a significant question to ask is who is an entrepreneur? This kind of question remains the topic of academic research and many scholars agree that there is no universally accepted definition of what an entrepreneur is. According to Karlof and Loevingsson (2005) the word 'entrepreneur' comes from the French 'entreprendre' which translated roughly, means to set about or to undertake. Tehseen and Ramayah (2015) asserts that an entrepreneur is an individual who develops and grows the businesses through creative and innovative activities, by introducing new products or services, by improving the existing methods of production or service. Macleod and Terblanche (2004) describe the entrepreneur as someone who sees gaps within the market environment and take the advantage to fill the gap; thus it is accepted that the entrepreneur takes more risks to increase personal interest to seize available opportunities (Certo, Moss & Short, 2009). Although opinions vary as to what an entrepreneur is, the word normally carries the meaning of new ideas and creative development in the framework of large organisations (Karlof & Lnevingsson, 2005).

TRAINING AND SUPPORT PROGRAMS FOR WOMEN ENTREPRENEURS BY INDIAN GOVERNMENT

Sheba Thomas

Guest Faculty, St. GregoriosCollege ,Kottarakkara

ABSTRACT

Women is on the march of their advancement. In India several institutions are involved in promoting women entrepreneurship. The Government of India has taken a proactive step towards the development of Women Entrepreneurs in all the business fields. These institutions provide different schemes for the establishment and maintenance of startups, specifically managed by Women entrepreneurs. The Ministry of Micro, Small and Medium Enterprises of Government of India has initiated women's cell to give support to women entrepreneurs. The Women and Child Development department of India has started several Income generating programs. In that they are providing help in setting up the training and income generating activities for the neediest women Entrepreneurs. This paper aims to study different training cum support programs of Government for women entrepreneurs. This study thereby poinus out the benefits for empowering women in the field of entrepreneurship.

INTRODUCTION

Women are now occupying high position in the life of our country. Women rights and development have been an argument on a worldwide level for more than a decade. The simple provision of equal rights does not ensure women empowerment. Women-run businesses are a strong force in today's developed and developing economies. Around 30% of all the business undertaking in the US are owned by women and these patterns are same in other countries. In Canada, women entrepreneurs represent around 40% of business entrepreneurs. Over one-fourth of business entrepreneurs in the UK are women, which is same as the case for most Northern European countries. All around the globe women are starting and operating their own businesses in vast numbers. Women entrepreneurs occupy a pivotal position in the industrial economy of the country because of several economic advantages. The economic development of developed countries of the world has been ascribed to the advancement of women entrepreneurs. In developed countries the most of the small enterprises have been managed by women. There are above five million female entrepreneurs constituting one quarter of all entrepreneurs in China. Keeping the witness of Western economies in mind, the Government of India has established various institutions to promote women entrepreneurial activities.

In India there are a vast number of institutions set up for the development of women entrepreneurship, mainly, National Institute for Entrepreneurship and Small Business Development (NIESBUD), Entrepreneurship Development Institute of India (EDII), National Bank for Agriculture and Rural Development (NABARD), Federation of Indian Women Entrepreneur (FASME), and World Assembly of Small and Medium Entrepreneur (WASME), District Financial Institutions (DFI) in general and Small Industries Development of Bank of India (SIDBI), etc.

IMPACT ASSESSMENT OF PRADHAN MANTRI MUDRA YOJANA AT KOTTAYAM DISTRICT IN KERALA

***Kala.S**

***Dr.Suman Alexander**

**Research Scholar,DB College ,SasthamKotta,University of Kerala.*

**Principal, St.Gregorios College, Kottarakara.*

ABSTRACT

In India, small businesses play an important role by providing employment to a large number of people. It is the second largest sector engaging uneducated and unskilled people after agriculture. Further, millions of low income earning group person aspire to set up small businesses but are unable to start, mostly due to credit limitations. Since banks do not find them eligible for credit loan. After identifying the importance of self –employed people and small business unit, government of India launched MUDRA Yojana to address the financial and other constraints. This paper is an attempt to assessthe impact of MUDRA Yojana at Kottayam district in Kerala.

Key words: PMMY, MUDRA, refinancing

INTRODUCTION

MUDRA is special set up of regulating and refinancing to the microfinance institutions, small business entities, small and new entrepreneurs at a relatively low rate of interest. MUDRA aims to reduce borrowing costs of these borrowers and provide affordable credit at a reasonable price. Its main aim is to 'funding the unfunded'. It is probable to develop as a regulatory body for microfinance institutions, which regulates MFIs that are registered as Non-Banking Finance Companies (NBFCs) which are not accepting public deposits(1). MUDRA a subsidiary of Small Industries Development Bank of India and registered as an NBFC (Non Banking Finance Companies). It is expected at benefiting around 58 million small businesses in the country, who account for a mere 4% of institutional funding, in spite of employing over 120 million people, a lot of from unprivileged strata of society. The basic purpose of MUDRA is to attain development in an inclusive and sustainable manner by supporting and promoting partner institutions and creating an ecosystem of growth for micro enterprises sector(1). Covering of loans from 50,000 to 10 lakh is financed by MUDRA to the financial institutions for lending to micro business and small and new entrepreneurs. The purpose behind this scheme is easy and low interest access of credit to the unorganized sector, which are always exploited by the formal financial institutions for their funding requirements. Shopkeepers, vendors, vegetable shoppers, truck operators and members of self help groups are also availed their credit requirement through the scheme (2). MUDRA can become a sustainable vehicle for integrating financial markets for enhancement of employment generation, removing non availability of credit at an affordable cost for small

ENTREPRENEURIAL MOTIVATION: A STUDY OF YOUTH FISH FARMERS IN KOLLAM DISTRICT, KERALA

Remya Surendran,

Research Scholar, University of Kerala, Trivandrum

Dr. Sumi Alex

HOD, PG Department of Commerce, St. Gregorios College, Kottarakara

Abstract

Kollam is the fourth largest city in Kerala and has been witnessing important growth in fresh water aquaculture in recent years. In the present era, entrepreneurial activities among Youth are more important for the growth of any economy. It will create employment opportunities and increases the country's GDP, which results in the improvement of the standard of living. The present paper analyses the factors that motivate the Youth to start their fish farming business and to know the reasons for selecting a particular location for establishing their business. Data were collected from 83 sample Youth fish farmers from Kollam District by using a Schedule and by adopting the simple random technique. Frequency and Percentage analysis were carried out to study the socio- demo graphic features of the respondents and rating and ranking method used to identify the factors affecting the motivational levels of the respondents and reasons affecting the entrepreneur's choice of business location. Based on the findings, the paper suggests that the government should adopt separate policies for youth fishfarmers.

***Key words:** Youth fish farmers, Motivation.*

Introduction

Motivation is a theoretical construct used to explain behaviour. It represents the reasons for people's actions, desires and needs. Dubin (1970) defined motivation as the complex forces starting and keeping a person at work in an organisation. It is something that moves the person to action and continues him in the course of action already initiated.

The entrepreneurial motivation is the process that activates and motivates the entrepreneur to exert higher level of effort for the achievement of his/her entrepreneurial goals. In other words, the entrepreneurial motivation refers to the forces or drive within an entrepreneur that affect the direction, intensity and persistence of his/her voluntary behaviour as entrepreneur.

The traditional reason for a person choosing to be an entrepreneur is financial gains. But according to recent research, the motivation of a person's entrepreneurial activities cannot be necessary only to fulfill the

"WOMEN ENTREPRENEURS EMPOWERMENT THROUGH MICROFINANCE: A STUDY IN KERALA DISTRICT"

Rejitha Y.S

Research Scholar, KSMDB College, Kollam,
rejiani123@gamil.com | Mob:9747046579

Dr. Suman Alexander,

Principal, SG College, Kottarakkara,
sumanvadakkadom@gmail.com | mob:9446523728

Abstract

The present study is an attempt to recognize the importance of microfinance in Women entrepreneurs Empowerment. The study focuses on the empowerment of women, which can be attainable in four levels accordingly social, economic, family and personal empowerment. Empowerment is the process enables the people to attain their target and improvement in their status in the society. It involves the practice by which both women and men realize self confidence to conquer any circumstance in their life. Empowerment ensures self confidence, skill development, solving problems and ability in making decisions.

Empowerment is an essential solution to several societal harms like high population growth, environmental degradation and more so for the low status of women. It is extremely esteemed to bring economic empowerment to their members by diminishing poverty and escalating investments, societal empowerment by health and cleanliness practices, gaining respect among their society members and gaining voice in the society; personal empowerment as respect for oneself, gaining good experience and discover novel potential and options, family empowerment as an improved standard of living, support from their spouse and improvement in basic facilities and amenities.Women's are the vital component in an economy. It provides a basic platform to the women entrepreneursto catch their own dreams. Finance is the life blood of every business enterprises. It is necessary for an undertaking Here there is a need for the microfinance. It helps the entrepreneurs to build their own business world In this study titled "Women Entrepreneurs Empowerment Through Microfinance: A Study In Kerala District" were conducted

Key words : *Empowerment, Entrepreneurs, Micro Finance, SHGs,*

Introduction

Empowerment is the process enables the people to attain their target and improvement in their status in the society. It involves the practice by which both women and men realize self confidence to conquer any circumstance in their life. Empowerment ensures self confidence, skill development, solving problems and ability in making decisions. It is extremely esteemed to bring economic empowerment to their members by diminishing poverty and escalating investments, societal empowerment by health and cleanliness practices, gaining respect among their society members and gaining voice in the society; personal empowerment as

AIP Conference Proceedings

Structural and optical properties of pure and Cu^{2+} doped CdS nanoparticles

Cite as: AIP Conference Proceedings 2270, 110006 (2020); https://doi.org/10.1063/5.0019852
Published Online: 02 November 2020

S. Rinu Sam, Fergy John, and Sherin John Joseph

Structural and Optical properties of Pure and Cu^{2+} Doped CdS Nanoparticles

S. Rinu Sam[1,a], Fergy John[1,b] and Sherin John Joseph[2,c]

[1]St.Gregorios College, Kottarakara, Kerala, India
[2]SRM Arts and Science College, Kattankulathur, Tamil Nadu, India
Corresponding Author: [a]r.sam0003@yahoo.co.in, [b]fergyphd@gmail.com, [c]sherin.rjj@gmail.com

Abstract The synthesis of semiconductor nanoparticles was widely studied in the field of optical devices for their potential usage. These semi conductor nanoparticles are doped with transition metal(TM) ions have wide attention due to the outstanding luminescent properties. The pure cadmium sulphide (CdS) and the transition metal Cu^{2+} ion doped with the nanoparticles (CdS: Cu^{2+}) are synthesized by the microwave enhanced solvothermal method. The cadmium acetate was used as cadmium source, thioacetamide as the sulphide source, and the ethylene glycol was used as the solvent for the synthesis of Cds: Cu^{2+}. XRD pattern of Pure CdS shows cubic structure. The prepared nanocrystals were characterized by power XRD, SEM, EDAX, FTIR and UV-VIS of the samples were recorded and discussed briefly.

Key words:- Semiconductor, Nanoparticles, Optoelectronic, Solvothermal, Ethylene glycol

INTRODUCTION

Semiconductor nanostructures have been abundantly studied over the past years due to their optical, electronic and catalytic properties. These properties emerge with two factors, ie, high surface to volume ratio and the quantum confined effect, both modify to alterations of the semiconductor properties. Many physical and chemical characteristics of semiconductor materials depend up on the particular size and shape of the nanocrystals. In fact much attention has been made to explore the methods for their synthesis and their distinctive properties to exploit the new applications [1]. II–VI quantum dots semiconductors have wide attention, because they are easy to synthesize in the size for quantum confinement. CdS has a wide band gap energy with Eg=2.42ev having vital applications in solar cells, biological labelling, photocatalystic optoelectronic and electronic devides [2-4]. Different Methods have been developed for the synthesis of CdS nanomaterials [5-9]. Among them the Solvothermal method is the most powerful method for the fabrication of comparatively low cost, uniform size, fineness and controlled morphology [9-11]. The solvent is the key issue for the preparation of CdS nanoparticles. In this work ethylene glycol is used as the solvent and thioacetamide as the sulphide source to release sulphide ions. A microwave oven (800W) has been used for synthesis of pure and doped CdS nanoparticles. The effect of annealing and doping concentration on the physical properties of CdS nanoparticles have been analyzed.

EXPERIMENTAL

The analytical reagents used for the preparation of pure CdS nanoparticles are ethylene glycol ($HOCH_2CH_2OH$), cadmium acetate ($Cd(CH_3COO)_2 2H_2O$) and thioacetamide (CH_3CSNH_2). In this present investigation cadmium acetate and thioacetamide were taken as the starting precursor materials with the molar ratio 1:1 and it liquefied with 30 ml of ethylene glycol. The microwave irradiation was done by the domestic microwave oven of 800W with the well mixed solution, for 20 minutes. Due to this reaction H_2S will gradually releases, because the cadmium acetate and the trace water consisting in ethylene glycol will react with thioacetamide. By the centrifugation, washing with de-ionized water for four times and twice with alcohol the productive mixture of orange coloured CdS nanoparticles

International Conference on Physics and Chemistry of Materials in Novel Engineering Applications
AIP Conf. Proc. 2270, 110006-1–110006-7; https://doi.org/10.1063/12.0019651
Published by AIP Publishing. 978-0-7354-3993-6/$30.00

AIP Conference Proceedings

Synthesis and characterization of Erbium substituted $NdTiNbO_6$ ceramic material for solid oxide fuel cells

Cite as: AIP Conference Proceedings 2270, 030001 (2020); https://doi.org/10.1063/5.0020589
Published Online: 02 November 2020

Fergy John, and S. Rina Sen

Synthesis and Characterization of Erbium Substituted $NdTiNbO_6$ Ceramic Material for Solid Oxide Fuel Cells

Fergy John[1,a)] and S. Rinu Sam[1,b)]

[1]*Department of Physics, St Gregorios College, Kottarakara 691531, Kollam , Kerala ,India*

[a)]Corresponding author: fergyphd@gmail.com
[b)]another author: r.sam003@yahoo.co.in

Abstract. Niobium based metal oxides are the potential candidate as an electrolyte in the solid oxide fuel cells. Different types of preparation methods are adopted for the substitution in niobium based materials and help to produce new crystallographic structures with enhanced properties than the parent oxide materials. Erbium Substituted Nd-Ti-Nb-O_6 energy materials have been developed as electrolytes for high temperature uses. Here, $Nd_{0.8}Er_{0.2}TiNbO_6$ is prepared by conventional solid state ceramic route method. The XRD study reveals that the sample has orthorhombic symmetry. The structure of the prepared sample is further analyzed by FT Raman and FT IR methods. Substitution of Erbium in $NdTiNbO_6$ decreases the sintering temperature and improves the electrical and optical properties. Using SEM technique, microstructure of the sintered sample is analyzed. EDX spectrum substantiates the presence of constituent elements according to their stoichiometric ratios. The electrical behavior of the sample is analyzed by the Impedance spectroscopy, which indicates the presence of grain effect. The sample exhibits negative temperature coefficient of resistance behavior. The semicircle behavior in the Cole-Cole plots reveals that the sample is a good ionic conductor. Due to the substitution of Erbium ions in $NdTiNbO_6$, improves the ionic conductivity and the oxygen vacancy concentration. The Cole-Cole plot can be deconvolute into two semicircles due to the presence of grain and grain boundary effect. This material can be made useful in solid oxide fuel cells.

Keywords: Solid-state ceramic route, Impedance spectroscopy, microstructure, Cole-Cole plots, Ceramic material

INTRODUCTION

The ceramic properties can be optimized by replacing partially one or more of the constituent elements by suitable others. Good electrical and optical properties of the ceramics can be achieved by altering the chemical composition or by the substitution of the suitable materials. Materials with identical ionic radii and valency are used for the substitution process. The dielectric properties of a number of ceramic materials are optimized by suitable substitutions [1, 2]. Lanthanides are generally substituted by other elements for optimizing the electric properties due to the similar valances and comparable ionic radii [3-9].

Solomon *et al.* [10] have reported the microwave dielectric properties of ZnO doped $LnTiNbO_6$ and Kumar *et al.* [11] have studied the addition of ZnO in $LnTiTaO_6$ (Ln = Pr, Sm and Dy) materials for dielectric microwave resonators. In all the earlier reports it is observed that, the method of substitution has improved all the properties of the samples. The present work reports the synthesis and characterization of Erbium substituted $LnTiNbO_6$ using solid state ceramic method.

EXPERIMENTAL

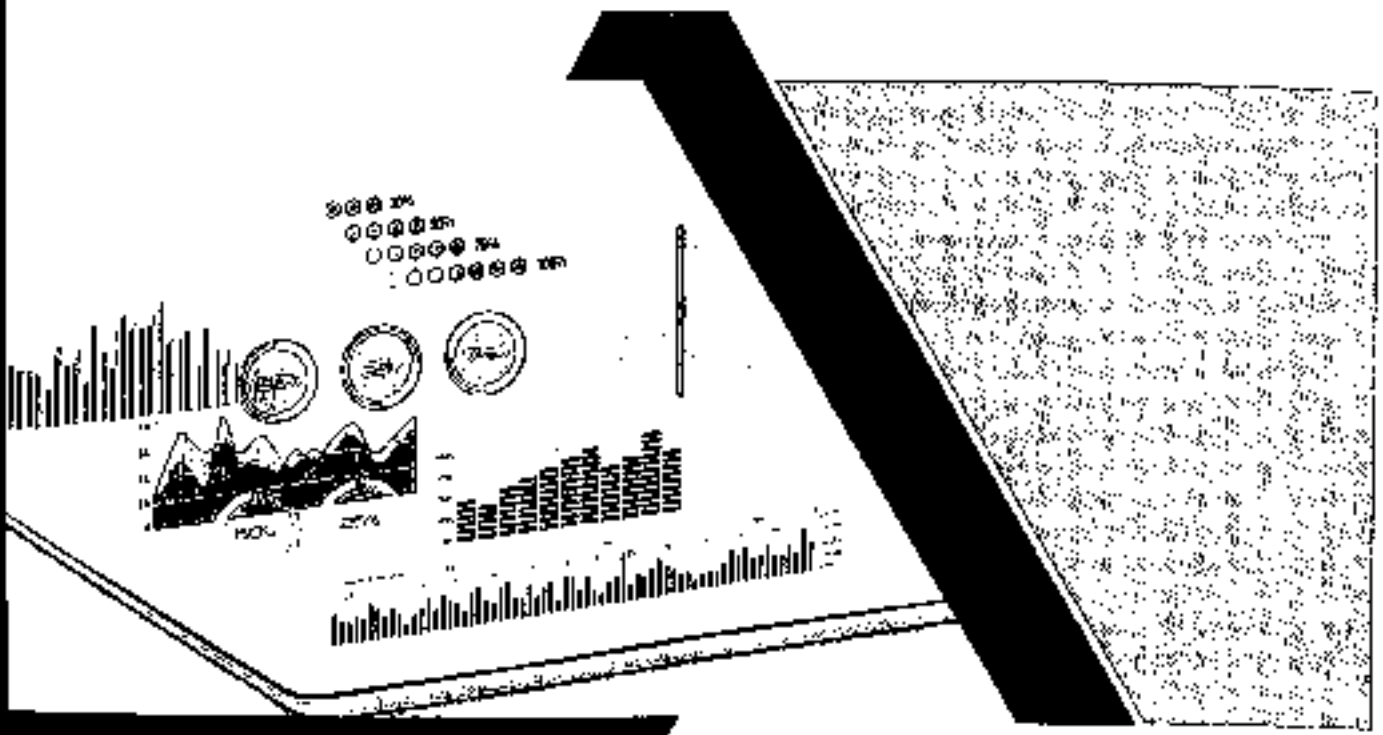
The polycrystalline sample, $Nd_{0.8}Er_{0.2}TiNbO_6$ (abbreviated as NETN) is synthesized by the solid state ceramic route using high purity (99.99%) carbonates and oxides of constituent elements. Stoichiometric amounts of high purity oxides are mixed and calcined at 1200 °C for 4 hours. Using acetone as the wetting medium, the calcined

International Conference on Physics and Chemistry of Materials in Novel Engineering Applications
AIP Conf. Proc. 2270, 030001-1–030001-6; https://doi.org/10.1063/5.0020589
Published by AIP Publishing. 978-0-7354-3998-6/$30.00

STATISTICS

APPLIED STATISTICAL TECHNIQUES AND STOCHASTIC MODELLING

Proceedings of National Seminar in Applied Statistics and Symposium on Stochastic Modelling, NSASSSM-2020



Edited by

NICY SEBASTIAN, SAJESH T. A.

Sponsored By

DST, UGC & Mathematical and Statistical Sciences Trust.

Published by Publications Division, St. Thomas' College Thrissur

About this book

This book is published as a collection of selected peer reviewed papers presented by the participants of the National Seminar in Applied Statistics and Symposium on Stochastic Modelling, NSASSSM-2020 organized by the Department of Statistics and P.G. and Data Science, St. Thomas College, Thrissur, Kerala 680001, as part of centenary celebrations of the college & 85th birthday anniversary of Professor A. M. Mathai during 04 - 06 February 2020. The conference is partially funded by DST, UGC and Mathematical and Statistical Sciences Trust. Topics covered in this book are Distribution theory, Special functions and function of matrices, Multivariate analysis, Reliability and Survival analysis, Quality control, Bayesian inference, Population studies, Official statistics and Time series and Stochastic Modelling. This book is intended to provide an opportunity to the young Statisticians and researchers to get to know the latest development in various fields of Applied Statistics and Stochastic Modelling.

ISBN 978-81-944730-1-5

APPLIED STATISTICAL TECHNIQUES AND STOCHASTIC MODELLING

Proceedings of National Seminar in Applied Statistics and Symposium on Stochastic Modelling, NSASSSM-2020

(4-6 February 2020)

Edited by

Nicy Sebastian, Sajesh T A

Sponsored by

DST, UGC & Mathematical and Statistical Sciences Trust

Organized by

Research and Post Graduate Department of Statistics & B.Voc. Data Science, St. Thomas' College, Thrissur

As part of centenary celebrations of the college

&

85th Birth Anniversary of Professor A. M. Mathai

A Publication of

Publications Division

St.Thomas' College (Autonomous)

Aided by Govt. of Kerala & Affiliated to University of Calicut

Thrissur, Kerala-680001, INDIA

E-mail : stcthrissur@gmail.com

Phone : +91 487 2420435

Proceedings of National Seminar in Applied Statistics
& Symposium on Stochastic Modelling - 2020, pp. 207-216.

Generalized Gamma Model and Pathway Fractional Operator

SEEMA S. NAIR
Department of Statistics, St Gregorios College, Kottarakkara
Pulamon P.O., Kollam, Kerala 691 531, India
e-mail: seema.sns@gmail.com

Abstract

The object of this paper is to introduce a new generalized probability distribution associated with Mittag-Leffler function,which directly connect to the theory of fractional calculus. It gives an extension to the gamma type distribution. Various properties of this new distribution are investigated. Availability of probability models with thicker or thinner tails through this new density is also illustrated in this paper. Connection to fractional calculus is also established here.

Key words: Bayesian analysis, Gamma density, Mittag-Leffler function.

1. Introduction

In reaction rate theory, input-output type situations and reaction-diffusion problems in physics and chemistry, when the total derivatives are replaced by fractional derivatives the solutions automatically go in terms of Mittag-Leffler functions and their generalizations, see Haubold and Mathai (2000). The ordinary and generalized Mittag-Leffler functions interpolate between a purely exponential law and power-law like behavior of phenomena governed by ordinary kinetic equations and their fractional counterparts, see Kilbas et al. (2004), Kiryakova (2000), Mathai (2010) and Mathai et al. (2010). Among the various results presented by various researchers, the important ones deal with Laplace transform and asymptotic expansions of this function.

By the application of Laplace integral, it follows that

$$\int_0^\infty e^{-ax} x^{\delta-1} E_{\alpha,\beta}(-\delta x^\alpha)\mathrm{d}x = \frac{a^{\alpha-\beta}}{a^\alpha + \delta}. \tag{1}$$

B. J. M. GOVT. COLLEGE

CHAVARA, KOLLAM 691 583

Proceedings of the National Seminar

Recent Research and Developments in Chemistry
(RRDC 2018)

30 & 31 October 2018

Organised by
Department of Chemistry
(In association with ACT)
B. J. M. Govt. College
Chavara, Kollam

Sponsored by
Department of Collegiate Education
Government of Kerala

ISBN 978-93-5321-402-9

763.

[12] Friesner R A, Murphy R B, Repasky M P, Frye L.L, Greenwood J R, Halgren T.A, Sanschagrin P.C and Mainz D.T, Extra precision glide: docking and scoring incorporating a model of hydrophobic enclosure for protein–ligand complexes. J Med. Chem, 2006, 49, 6177-6196.

PP 08

Electrosynthesis and catalytic properties of thin layered Poly(aminobenzenesulfonicacid)/ Reduced graphene oxide nanocomposite

Pinky Abraham, Renjini S., Dr. Anitha Kumary V. and Dr. Chithra P. G.
Department of Chemistry Sree Narayana College for Women Kollam
Corresponding Author: pinkyabrahampanavila80@gmail.com

Recently, reduced graphene oxide based nanocomposites have proved excellent electrocatalytic properties. In this work, nano composite films based on conducting polymer(Poly amino benzene sulphonicacid (PABSA) and reduced graphene oxide (rGO) was prepared through a simple electropolymerization method. It was found that such composite has sufficiently high elecrocatalytic activiy towards the oxidation of various analytes. This is mainly because of large surface area and the better electronic and ionic conductivity of Poly PABSA/rGO which leads to enhanced electrochemical behavior. The prepared composite was systematically characterized by various techniques like FT-IR, FESEM and SEM EDX. The methods of cyclic voltammery(CV), Differential Puse voltammery (DPV) were employed. Finally, the fabricated sensor exhibits good stability and sensitivity.

Key words: Poly (Aminobenzene sulfonic acid)/ Reduced Graphene oxide composite, Electrochemical behavior, electrodeposition.

1.Introduction

Graphene is an atomically thick, two- dimensional (2-D) sheet composed of Sp^2 carbon atoms arranged in a honeycomb structure. Graphene sheets have higher surface-to-volume ratios than other carbon nano material. Electropolymerisation can accelerate transmission of electrons on to the surface of electrode, it has high selectivity and sensitivity due to the film homogeneity in electrochemical deposition and it has strong adherence to the electro surface and large surface

INTERNATIONAL SEMINAR ON COASTAL BIODIVERSITY ASSESSMENT

COBIA 2017

DEPARTMENT OF ZOOLOGY ST.GREGORIOS COLLEGE KOTTARAKARA

PROCEEDINGS OF THE

INTERNATIONAL SEMINAR ON COASTAL BIODIVERSITY ASSESSMENT

COBIA 2017

January 5 -7,2017

ORGANIZED BY

DEPARTMENT OF ZOOLOGY

ST. GREGORIOS COLLEGE, KOTTARAKARA,

KERALA STATE, INDIA

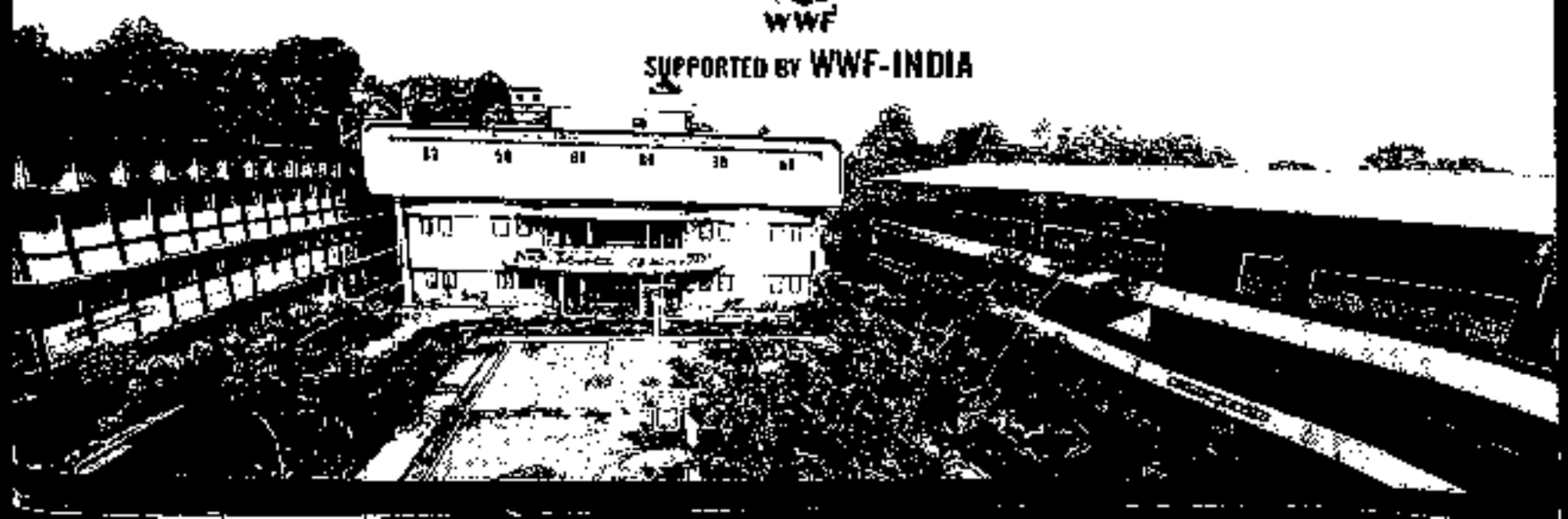
CO-SPONSORED BY

KERALA STATE COUNCIL FOR SCIENCE TECHNOLOGY & ENVIRONMENT

(KSCSTE)

WWF

SUPPORTED BY WWF-INDIA



Proceedings of the International Seminar on

Coastal Biodiversity Assessment (COBIA 2017)

Editor

L JEAN JOSE

Published by:

Department of Zoology, St. Gregorios College, Kottarakara

Kerala State, India, Pincode-691531

CO-SPONSORED BY

KERALA STATE COUNCIL FOR SCIENCE TECHNOLOGY & ENVIRONMENT (KSCSTE)

SUPPORTED BY WWF-INDIA

Proceedings of the International Seminar on Coastal Biodiversity Assessment (COBIA 2017)

Editor

J. Jean Jose

Editorial Team

Lincy Alex
L. Razeena Karim
Elizabeth John

ISBN : 978-93-5267-385-3

Published by:
Department of Zoology,
St. Gregorios College, Kottarakara
Kerala State, India
Pincode-691531

Printed at : Oliver Printers, Kottarakara, Email: oliverprinters@gmail.com

27	Predatory Fish landings and possible impacts on marine food web: a case study from Kollam coast, Kerala	Amurtha R. Nayak., Sirajudheen T.K and Anura M. Krishna	Marine Biodiversity	186	D-06
28	Gastropod diversity: Relation with environmental parameters along the coast of Neendakara, Kollam, Kerala, India	Mumthas Y and Miranda MTP	Marine Biodiversity	196	D-07
29	Impact of temperature on the respiratory physiology and byssus thread formation of *Perna viridis*	Dhivya, R.S, Lipton, A.P., Kumari Sethu Lakshmi Bai, P. K and Sarika A. R	Mariculture	207	C-02
30	Mariculture of marine sponge *Spongia officinalis var. ceylonensis* (Dendy) in open sea: Evaluation of bioactivity	P. Rajendran, A.P. Lipton	Mariculture	219	C-03
31	Diversity and Taxonomy of Silver bellies (Pisces, Teleostei, Leiognathidae) off Kerala coast	Honey Sebastian	Marine Biodiversity	236	D-08
32	Biodiversity of macrobenthic fauna along Veraval coast, Gujarat	Usha Bhagirathan and B. Meenakumari	Marine Biodiversity	245	D-09
33	Asian Water bird Census-2016: Check list of water birds of Palakkal kole wetland, Thrissur	Kezia Kuruvilla	Marine Biodiversity	258	D-10
34	Depreciation of Macrobenthic Diversity in the Cochin Estuary, South West coast of India	P Sheeba	Marine Biodiversity	269	D-11
35	Potential research highlights in cryopreservation of marine fish sperm	Revathy.S, Benno Pereira F.G and AnuThottappilly	Mariculture	278	C-04
36	Bioaccumulation of heavy metals on the gills and fins of *Mugil cephalus*	Sherly Williams .E, Lekshmi priya.V and Razeena karim .L	Coastal Pollution	297	B-07
38	A simple and cost-effective biofiltration system designed for the removal of toxic metabolites in a live lobster holding at Kanyakumari, India	Udayakumar, A, Lipton, A.P, J.M. Beula and Jean Jose, J	Mariculture	314	C-06
39	Phenol degrading *Aspergillus niger* isolated from mangrove forest and its characterization	Parvathy.G, Prabhakumari .C, Miranda M T P and Naziya Rasheed	Mariculture	320	C-07

C-06

Description of a cost-effective biofiltration system designed for live Lobster holding at Kanyakumari, Tamil Nadu

Udayakumar, A[1], Lipton, A.P[2], J.M. Beula[3] and Jean Jose, J[4]*

[1]*VRC of Central Marine Fisheries Research Institute, Vizhinjam, India*
[2]*Centre for Marine Science and Technology, Rajakkamangalam, Tamil Nadu, India*
[3]*Department of Chemistry, Scott Christian College (Autonomous), Tamil Nadu, India*
[4]*Department of Zoology, St. Gregorios College, Kottarakara, Kerala State, India*

**Corresponding author email: udayakumar8126@gmail.com (A. Udayakumar)*

Abstract

The coastal people of Kanyakumari district, Tamilnadu is now widely engaged in spiny lobster culture, in open sea cages utilizing the techniques developed by Central Marine Fisheries Research Institute (CMFRI) due to the high demand and the ever-increasing margin in the seafood trade. The lobsters farmed in cages and procured from the wild directly reaches to the seafood's exporting units at Kanyakumari, through the fishermen group for sale and kept live in the Reinforced Cement Concrete (RCC) rearing tanks. The lobsters were managed for a short period of 3 -4 days prior to packing before live export. During the stocking period, the water quality parameters of the rearing tanks were monitored for pH, water temperature, dissolved oxygen, carbon dioxide, alkalinity and in-organic nutrients. Water exchange of 100% to maintain the water quality in rearing tanks during the short period is impractical and it leads to high operational cost. In order to reduce the effect of harmful metabolites in the rearing waters an efficient filtration unit is inevitable. . The water biofiltration system developed by VRC of CMFRI, Vizhinjam and its laboratory trial was initiated at CMFRI Field Centre at Kanyakumari is discussed. The advantages observed are repeatable for the smooth trade of live lobsters. The water filtration system developed by the exporting unit with technical support from Author's were found advantages and are repeatable for the smooth trade of live lobsters.

Keywords: lobster rearing, live export, biofilter system, mariculture

INTERNATIONAL SEMINAR ON COASTAL BIODIVERSITY ASSESSMENT

COBIA 2017

DEPARTMENT OF ZOOLOGY ST.GREGORIOS COLLEGE KOTTARAKARA

PROCEEDINGS OF THE

INTERNATIONAL SEMINAR ON COASTAL BIODIVERSITY ASSESSMENT

COBIA 2017

January 5 - 7,2017

ORGANIZED BY

DEPARTMENT OF ZOOLOGY

ST. GREGORIOS COLLEGE, KOTTARAKARA,

KERALA STATE, INDIA

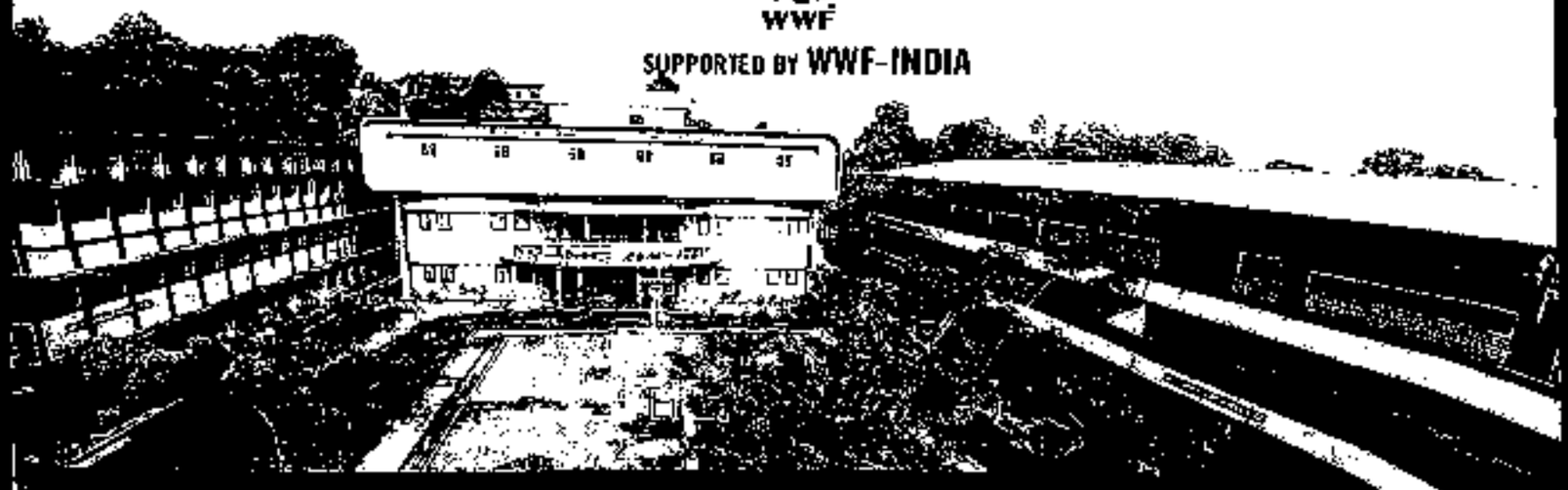
CO-SPONSORED BY

KERALA STATE COUNCIL FOR SCIENCE TECHNOLOGY & ENVIRONMENT

(KSCSTE)

WWF

SUPPORTED BY WWF-INDIA



Proceedings of the
International Seminar on
Coastal Biodiversity Assessment (COBIA 2017)

Organizing Committee

Patron : HG Mathews Mar Theodosios, Manager
General Convener : DR. P. K. Josekutty, Principal
Convenor : Mrs. Rani. S. Dharan, HOD
Organizing Secretary : DR. J. Jean Jose

Organizing Committee Members:

Very Rev. Zacharia Rambán, Administrator
DR. Elizabeth John, Assistant Professor
Mrs. Liney Alex, Assistant Professor
DR. L. Razeena Karim, Assistant Professor

Editor

J. Jean Jose

Editorial Team

Liney Alex
L. Razeena Karim
Elizabeth John

ISBN : 978-93-5267-385-8

Published by:
Department of Zoology,
St. Gregorios College, Kottarakara
Kerala State, India
Pincode-691531

Printed at : Oliver Printers, Kottarakara, Email:oliveroffsetpress@gmail.com

52	Chlorophyll degradation and copepod assemblages along Vizhinjam coastal waters, India	Jean Jose. J, Lincy Alex and Volga. S. S	Marine Biodiversity	453	D-18
53	A Study on histopathological Changes in the gonads of an Estuarine fish *Liza parsia* (Ham, 1822)	L. Razeena Karim and E. Sherly Williams	Coastal Pollution	466	B-09
54	Comparative analysis of Piscine and Human serum proteins using Polyacrylamide Gel Electrophoresis	Deepthi T.R , Rajitha Raveendran	Marine Biotechnology	471	E-07

B-09

A study on histopathological changes in the gonads of an estuarine fish *Liza parsia* (Ham, 1822)

*Razeena Karim L**

Department of Zoology, St .Gregorios College, Kottarakkara-691531, Kerala, India

Corresponding author: razeenashibili@rediffmail.com (L. Razeena Karim)

Abstract

Heavy Metals are one of the most important toxicant which destroys the aquatic ecosystem. Their natural effects are carcinogenic and mutagenic. The present study showed the concentration of heavy metals (Fe, Cu, Zn and Pd) in the gonads of Liza parsia from two sites of Ashtamudi lake, the Ramsar site. The heavy metals are found to be accumulated more in the site 2 than in site1. The study also demonstrates the histological changes associated with the accumulation of toxic heavy metals in the gonads thereby its reproductive potential. The histological changes in the gonads of the L. parsia include enlargement of oocytes, degeneration of egg envelope, appearance of atretic follicles, scattering of nucleoi etc.

Key words: Heavy Metals, Liza parsia, Accumulation, Atresia, Reproductive defects

Introduction

In the last decades, contamination of aquatic systems by heavy metals has become a worldwide problem. Heavy metals may enter aquatic systems from different natural and anthropogenic sources, including industrial or domestic wastewater, application of pesticides and inorganic fertilizers, storm runoff, leaching from landfills, shipping and harbour activities, geological weathering of the earth crust and atmospheric deposition (Yilmaz,2007). In fish, which is often at the higher level of the aquatic food chain, substantial amounts of metals may accumulate in their soft and hard tissues (Javad and Usmani, 2011). Since diet is the main route of exposure to heavy metals, and fish represent a part of human diet, it is not surprising that polluted fish could be a dangerous dietary source of certain toxic heavy metals (Bogut, 1997). The present work therefore highlights

ISBN 978-93-5396-124-6

BOOK OF ABSTRACTS

INTERNATIONAL CONFERENCE ON

EMERGING FRONTIERS IN CHEMICAL SCIENCES

EFCS-2019

13-15 December 2019

POST GRADUATE AND RESEARCH DEPARTMENT OF CHEMISTRY

FAROOK COLLEGE

(AUTONOMOUS)

Aided by the Govt. of Kerala and Affiliated to the University of Calicut
A College with Potential for Excellence (CPE) ● Re-accredited at 'A+ Grade' by the NAAC

Farook College, Kozhikode, Kerala, India - 673 632.

Oral Presentations

Poster Presentations

P-19

Nano Fe_2O_3 –RuO_2 Mixed Oxide Incorporated Catalytic Ni-P Composite Coating for Hydrogen Evolution Reaction

R. Remya[1], Francis Chacko[1], S.M.A. Shibli[2]
[1]*Department of Chemistry, St.Gregorios College Kottarakara, Kollam, INDIA*
[2]*Department of Chemistry, University of Kerala, Trivandrum – 695 581. INDIA*
Email:remyar82@gmail.com

Hydrogen is considered to be the most promising candidate as a future energy carrier. The electrochemical production of hydrogen by alkaline water electrolysis is one of the most promising methods with great potential of using renewable energy sources, such as solar energy. In order to make this technique more efficient and economical, the decreasing of the over potentials of the electrode reactions as well as by selecting inexpensive electrode materials with good electrocatalytic activity are needed. For this purpose, the most important and most studied electrode material is nickel, its alloys and compounds. However, nickel suffers from low electrocatalytic performance and does not resist well to intermittent electrolysis. The electrode activity can be increased by increasing the real surface area and/or the intrinsic activity of the electrode material. The objective of the present work was to demonstrate the efficiency of nano Fe_2O_3 as a catalyst support for RuO_2 electrocatalyst for hydrogen evolution in alkaline medium. The study of iron oxide has attracted intensive attention over the past few decades due to the potential applications in catalysis, high density magnetic recording media and biomedical fluids. Fe_2O_3-RuO_2 mixed oxide was prepared by thermal decomposition of $RuCl_3$. The composite was incorporated into electroless Ni-P plating. Mild steel coupons were used as the base substrate. The concentration of the nano composite was optimized based on the preliminary test results of the specimens prepared under different experimental conditions and 10 g/L was found to be optimum. The specimens were subjected to different physicochemical characterization including SEM. The electrocatalytic activity of electrodes was studied using different electrochemical tests in 32% NaOH solution. The surface morphology of the composite incorporated plates was rougher and corrugated compared to that of the pure Ni-P plates. The mixed oxide particles distributed all over the surface