3.3.1. Number of research papers published per teacher in the journals notified on UGC care list during the last five years.

Summary of the UGC Care List Research Papers

SI. No	Year	Number of Research Papers
1	2023	10
2	2022	19
3	2021	17
4	2020	16
5	2019	08
6	2018	11
	TOTAL	**81**

2023

SI. No	Name of the author/s	Department of the teacher	Name of journal	Page No.
1	Ms. Lina Anil	Biosciences	International Journalof Current Pharmaceutical Research	1
2	Dr. Ally C Antony	Biosciences	Fishery Technology	2
3	Dr. Rubeena K.A	Biosciences	Scientific Reports	3
4	Dr. Rubeena K.A	Biosciences	Marine Pollution Bulletin	4
5	Dr. Shereena V B	Computer Applications	Multimedia Tools and Applications	5
6	Dr. Mini K. Paul	Biosciences	Journal of Pure and Applied Microbiology	6
7	Dr. Mini K. Paul Ms. Amrutha Dinesh	Biosciences	Fishery Technology	7
8	Dr. Nisha P	Biosciences	Wiley-Environmental Quality Management	8
9	Dr. RafeekaMol C A	Commerce	GIS SCIENCE JOURNAL	9
10	Mr. Jasir M P	Computer Applications	ACM Transactionson Asian and Low-ResourceLanguage Processing	10

2022

11	Dr.Ally C Antony	Biosciences	Journal of Food Quality and Hazards Control	11
12	Dr. Rubeena K.A	Biosciences	Diversity	12
13	Dr. Sajana K Muhammed	Bvoc Logistic Management	South India Journal of Social Science	13

14	Dr.Priya Chandran	Bvoc Logistic Management	Journal of Management and Entrepreneurship	14
15	Dr.Mini K. Paul & Dr. Umesh B T	Biosciences	Biosciences Biotechnology research ASIA	15
16	Dr.Nisha P	Biosciences	Material today Proceeedings	16
17	Jasir M P & Dr. Jaseena K U	Computer Applications	INFOCOMP Journal of Computer Science	17
18	Dr.Julie M David	Computer Applications	Journal of emerging technologie and innovative research(IJETIR)	18
19	Sheeba Varghese & Dr. Jasmine P M	Electronics	IEEE Antennas and Wireless Propagation Letters	19
20	Dr.Mini K. Paul & Anu Ruby Benny	Biosciences	Indian Journal of Science and Technology	20
21	Dr.Mini K. Paul	Biosciences	Asian Journal of Biological and Life Sciences	21
22	Dr.Mini K. Paul	Biosciences	Journal of Applied Biology & Biotechnology	22
23	Dr.Mini K. Paul & Dr. Ally C Antony	Biosciences	Journal of Pure and Applied Microbiology	23
24	Jasir M P	Computer Applications	ACM Transactions on Asian and Low-Resource Language Information Processing	24
25	Dr.Priya Chandran	B.Voc-Logistics Management.	EPRA International Journal of Multidisciplinary Research (IJMR)	25
26	Dr. Benjamin Hudson Baby	Physics	Applied Science and Convergence Technology	26
27	Dr.Ajitha A R	Chemistry	Polymer-Plastics Technology and Materials	27
28	Dr. Shereena V B	Computer Applications	International Journal of Automation and Control	28
29	Dr.Julie M David	Computer Applications	Journal of emerging technologies and innovative research (IJETIR)	29

2021				
30	Sheeba Varghese & Dr. Jasmine P M	Electronics	Progress In Electromagnetics Research PIER	30
31	Dr.Jasmine P M & Dr. Sam Kollannore	Electronics	Elsevier - Optik	31
32	Dr. Sam Kollannore U	Electronics	Optik	32
33	Chika K Gangadharan & Roshni Alex	Electronics	Advances and Applications in Mathematical Sciences	33
34	Dr.Jaseena K U	Computer Applications	Journal of Information & Knowledge Management	34
35	Dr .Ajitha A R	Chemistry	Polymers for Advanced Technologies,	35
36	Dr.Ajitha A R	Chemistry	Polymers for Advanced Technologies	36
37	Dr. Ally C Antony	Bioscience	Fishery Technology (Society of Fisheries Technologists - India)	37
38	Dr. Ally C Antony	Bioscience	Fishery Technology (Society of Fisheries Technologists - India)	38
39	Dr.Jaseena K U	Computer Applications	Wind Engineering, SAGE Publishers	39
40	Lt. Ibrahim Salim & Dr. Murugan R	Computer Applications	Information Technology in Industry	40
41	Dr. Rubeena K A	Biosciences	Aquaculture International	41
42	Dr.Ally C Antony	Biosciences	Regional Studies in Marine Sciences	42
43	Rafeeq C M & Dr.Manzur Ali P P	Biosciences	Protein Expression and Purification.	43
44	Rafeeq C M & Dr. Manzur Ali P P	Biosciences	Ceramics International (ELSEVIER)	44
45	Dr. Jaseena K U	Computer Applications	Energy Conversion and Management	45

46	Dr. Julie M. David	Computer Applications	International Journal of Computer Sciences and Engineering	46
2020				
47	Dr. Nithin Chandran	Integrated Chemistry	Composite part B Engineering	47
48	Dr. Shemi P M	Electronics	ICTACT Journal on Communication Technology	48
49	Dr.Sam Kollannore U	Electronics	Progress in Electromagnetic Research (PIER)	49
50	Dr. Raphika P M	Electronics	IET Microwave Antennas & Propagation	50
51	Dr. Rubeena K A	Biosciences	RSC Advances	51
52	Dr. Sam Kollanore U	Electronics	Progress In Electromagnetics Research C	52
53	Dr. Jasmine P M	Electronics	Progress In Electromagnetics Research C	53
54	Dr. Raphika P M	Electronics	IET Microwave Antennas & Propagation	54
55	Dr. Susan Varghese	Psychology	The International Journal of Indian Psychology	55
56	Dr. Ally C Antony	Bioscience	Fishery Technology	56
57	Dr.Rafeekamol C A	Commerce	Kala: The Journal of Indian Art History Congress	57
58	Dr.jaseena K U	Computer Application	journal of Renewable and Sustainable Energy	58
59	Tony Pinhero	Physics	Journal of Cosmology and Astroparticle Physics (JCAP)	59
60	Dr.R Murugan & Lt.Ibrahim Salim M	Computer Application	Internat ional Journal of Recent Technology and Engineering (IJRTE)	60
61	Dr. Jaseena K U	Computer Application	Journal of King Saud University - Computer and Information Sciences. Elsevier	61

62	Dr. Nisha P & Dr. Mamatha C	Biosciences	Materials Today Proceedings	62
2019				
63	Dr.Rubeena K A	Bioscience	Fish and shellfish immunology	63
64	Dr.Rubeena K A	Bioscience	Fish and shellfish immunology	64
65	Dr. Leena C Sekhar	Computer Application	International Journal of Recent Technology and Engineering (IJRTE	65
66	Dr. Jasmine P M	Electronics	AEU-International journal of electronics and communications	66
67	Dr. Murugan R & Lt. Ibrahim Salim M	Computer Application	The International Journal of Recent Technology and Engineering (IJRTE)	67
68	Dr. Jasmine P M	Electronics	Progress In Electro magnetics Research C	68
69	Dr.Shemi P M	Electronics	International journal of Communication systems	69
70	Dr.Rubeena K A	Bioscience	Reviews in fisheries Science and Aquaculture	70
2018				
71	Dr. Leena C Sekhar	Computer Applications	International Journal of Applied Engineering Research (IJAER)	71
72	Dr. Shemi P M	Electronics	International Journal of Communication Systems	72
73	Dr. Jasmine P M & Dr. Raphika P M	Electronics	Progress In Electro magnetics Research C	73
74	Dr. Ally C Antony	Bioscience	Catalysis Letters	74
75	Dr. Mini K Paul	Bioscience	LS-International journal of life Sciences	75
76	Dr. Rubeena K A	Bioscience	Fish and shellfish immunology	76

77	Dr. Ally C Antony & Dr. Mini K Paul	Bioscience	Journal of Pure and Applied Microbiology	77
78	Dr. R Murugan	Computer Application	International Journal of Applied Engineering Research	78
79	Dr. Farzana S Hussain	Commerce	RESEARCH REVIEW International journal of multidisciplinary	79
80	Nizamole Abdulkader	Commerce	MIRROR	80
81	Ramla Beevi A P	Commerce	MIRROR	81

PUBLICATIONS 2023

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Original Article

IN VITRO ANTIOXIDANT AND ANTICANCER ACTIVITY OF *MACRANGA PELTATA* LEAF EXTRACTS ON LUNG CANCER CELL LINES

LINA ANIL[1*], S. MOHANDAS[1]

[1*]Research Scholar (R & D), Department of Biochemistry, Bharathiar University, Coimbatore. [1]Assosciate Professor, Department of Biochemistry, PSG Arts & Science College, Coimbatore, 641014, Tamil Nadu, India., India
*Corresponding author: S. Mohandas; Email: mohandass1202@gmail.com

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ABSTRACT

Objective: To determine the phytochemical constituents, antioxidant and anticancer activities of *Macranga peltata* leaf extracts on A549 and P 51 human lung cancer cell lines.

Methods: Leaf sample was subjected to soxhlet extraction method and phytochemical screening was done using different biochemical tests. The antioxidant activity was tested using 2,2-diphenyl-1-picrylhydrazyl, ferric ion reducing power assay and 2,2-azino bis 3-ethyl benzothiazoline-6-sulfonic acid assay. *In vitro* anticancer activity on A549 and P 51 human lung cancer cell lines was evaluated by (3-(4,5-dimethyl thiazole-2yl)-2,5-diphenyl tetrazolium bromide) MTT assay.

Results: Phytochemical screening confirmed the presence of phytoconstituents like tannins, flavanoids, alkaloids, saponins, glycosides and reducing sugar. The antioxidant assays exhibited significant inhibiting activity. MTT cell proliferation assay of methanolic extract of plant drug produced a cytotoxic effect on lung cancer cell lines A549 and P 51 with an IC50 value of 197.10 µg/ml, while it had no cytotoxic effect on normal cell lines.

Conclusion: It has been reported the effect of flavanoid characteristics in reducing the cancer. *M. peltata* contains a wide variety of secondary metabolites that hold strong antioxidant capacity. Their leaf have found to be potential source of antioxidants and anticancer activity.

Keywords: Anticancer, Antioxidant, Phytochemical, *Macranga peltata*, Lung cancer

DOI: https://dx.doi.org/10.22159/ijcpr.2023v15i4.3019. Journal homepage: https://innovareacademics.in/journals/index.php/ijcpr

INTRODUCTION

Lung cancer is one of the prominent causes of death to human being. At present it is one of the major reasons of fatality to both men and

products from this genus have been reported to have effective biological applications such as antitumour [13] antioxidant and antimicrobial activity. The present study was aimed to evaluate

Research Note

Antibiotic Resistance and Pathogenic Potential of *Escherichia coli* Isolated from Food Contact Surfaces of a Commercial Kitchen

Suresh Kunhiraman, Divya P. Sukumaran, Ally C. Antony, Reshma Silvester, A. A. Mohamed Hatha*

Cochin University of Science and Technology, Cochin, Kerala, India

Food safety in the restaurant is very important to safeguard the health of consumers which in turn will contribute to economic development of countries by fostering tourism. The objective of the study was to understand the prevalence of antibiotic resistance, genes coding for antibiotic resistance and virulence genes among *E. coli* isolated from various food contact surfaces of a commercial kitchen. A total of 15 *E. coli* were isolated from a commercial kitchen. The *E. coli* isolates were resistant to cefpodoxime (75 %) and nitrofurantoin (50 %) followed by ampicillin (43 %). Multiple antibiotic resistance indexes of the isolates ranged from 0.6 to 0.93. Out of the total isolates, 46.6 % carried bla_{TEM} genes and 20% carried $bla_{CTX\,M}$ genes. The virulence gene *hly-A eae* and *stx*1 were detected in 40 % of the isolates, while *stx*2 genes was not detected in these isolates. In conclusion, the presence of antibiotic resistant pathogenic *E. coli* isolates in food contact surfaces of the commercial kitchen is a cause of concern since there is a possibility of cross contamination to the food items, thereby posing health risk to the consumer.

Keywords: *Escherichia coli*, commercial kitchen, cross

concern for public health is food safety. Unsafe food poses a threat to consumer health and sometimes poses life threatening consequences *Escherichia coli* has long been regarded as indicator organism for hygiene in itself and as being a member of the 'coliform' group (Eslava et al., 2003). While most *E. coli* strains are commensals in the intestines of warm-blooded animals, the pathogenic strains are responsible for a wide spectrum of diseases because of their virulence traits. (Malik & Memona, 2010). Food-borne pathogenic bacteria have shown the ability to remain viable on various surfaces for extended periods and this has been shown to be important during various cross contamination situations (Kramer et al., 2006; Kusumaningrum et al., 2002).

Worldwide observations concerning antimicrobial resistance of *E. coli* have been reported. Due to the rapid evolution of drug resistant mutants to the majority of first-line antimicrobial drugs, managing the spread of *E. coli* infections has become more challenging (Sabate et al., 2008). There are several ways that food can become contaminated with antimicrobial resistant organisms. One of them is the presence of bacteria that are resistant to antibiotics

Article | Open access | Published: 11 January 2023

Hybrid of *Metapenaeus dobsoni* lectin and platinum nanoparticles exert antimicrobial and immunostimulatory effects to reduce bacterial bioburden in infected Nile tilapia

Sreeja Lakshmi, Abdul Salam Rubeena, Siva Bala Subramaniyan, Thiagarajan Raman, Baskaralingam Vaseeharan, Jesu Arockiaraj, Sivashanmugam Karthikeyan, Veerappan Anbazhagan ✉ & Elumalai Preetham ✉

Scientific Reports **13**, Article number: 525 (2023) | Cite this article

Abstract

A novel antibacterial immunostimulant using Platinum nanoparticles (PtNPs) and lectin from *Metapenaeus dobsoni* (Md-Lec) was developed. The Md-Lec and PtNPs (Pt-lec) hybrid formed through non-covalent interaction exhibits antimicrobial activity against fish specific pathogens by affecting membrane integrity and producing excess reactive oxygen species. The therapeutic efficacy of Pt-lec was demonstrated through rescuing *Aeromonas hydrophila* infected Nile Tilapia. Pt-lec prevents the infection spreading and reduces the bacterial bioburden in less than 12 h, and as a result of this the fish were restored to normalcy. To assess immunostimulation, we studied the expression of three different immune related genes, namely LEC, Myd88 and COX-2 in the gills, liver, spleen and kidney of fish under various experimental conditions. Our results showed that Pt-lec treatment appeared to be better when compared to lectin alone in enhancing the expression of Myd88 and COX-2, but LEC was not as expected. These results suggest that Pt-lec has the ability to protect Nile Tilapia against bacterial infection by restricting bacterial bioburden through their direct effects on the

Marine Pollution Bulletin

Volume 186, January 2023, 114463

Baseline

Alterations in hydrological variables and substrate qualities and its impacts on a critical conservation reserve in the southwest coast of India

K.A. Rubeena [a], Aymen Nefla [b], K.M. Aarif [c], Sama S. AlMaarofi [d], Durga Rao Gijjappu [e], Omer R. Reshi [f]

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https://doi.org/10.1016/j.marpolbul.2022.114463

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Published: 24 August 2023

Medical ultrasound image segmentation using Multi-Residual U-Net architecture

Shereena V. B. & Raju G.

Multimedia Tools and Applications (2023) | Cite this article

Abstract

Advances in medical imaging modalities facilitate the early and accurate detection of tumors of various types. A preferred imaging modality for diagnosis and identification of tumors is the B-mode ultrasound imaging, but due to the noise and artifacts present, correct interpretation of lesions region becomes a difficult task for an inexperienced radiologist. In this context, an efficient and reliable computer-aided segmentation system is preferred for extracting regions of interest. Recently, conventional methods of segmentation have been replaced by deep learning methods. In this article, a novel Multi-Residual U-Net model is proposed for the segmentation of ultrasound medical images. This architecture adopts residual blocks to improve the performance of deep convolutional networks and a loss function that addresses the class imbalance issue. To improve the quality and reduce Speckle noise, input images are pre-processed using an optimized Non-Local Means filter. Three benchmark B-mode Ultrasound image datasets of 200 Breast lesion images, 504 Skeletal images, and 647 Breast Lesion images are used for experimentation. Experimental results demonstrate that the proposed model performs more accurate segmentation in comparison to the five deep models chosen for the study.

Data availability

The data sets analyzed during the study are available as open access data. http://bluebox.ippt.gov.pl/~hpiotrzk; https://www.mdpi.com/2313-433X/4/2/29; https://www.kaggle.com/datasets/aryashah2k/breast-ultrasound-images-dataset

References

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2. Adams R, Bischof L (1994) Seeded region growing. IEEE Trans Pattern Anal Machine Vision 16:641–647. https://doi.org/10.1109/34.295913

Mosquito Larvicidal Activity of Chitinase of Pseudomonas putida Mb 12 against the Human Vector Aedes aegypt.

- **Source:** Journal of Pure & Applied Microbiology . 2023, Vol. 17 Issue 1, p403-410. 8p.

- **Author(s):** Paul, Mini K.; Mathew, Jyothis

- **Abstract:** The main dengue and Zika vector, Aedes aegypti, is a cosmotropic species. Since dengue fever cases have significantly increased in recent years, these organisms seem to be extremely detrimental. Synthetic pesticides are not biodegradable, are non-selective, and have adverse effects on beneficial organisms being handled in the vector management system. In the present study, the mosquitocidal potential of chitinase from P. putida Mb 12 was evaluated in an effort to identify risk-free options for the control of mosquitoes. Larvicidal toxicity of Pseudomonas putida Mb 12 chitinase were evaluated on IVth-instar larva of Ae. aegypti and their effect on acetylcholinesterase activity and glutathione S-transferase activity were studied. The early 4th instar larvae of Ae. aegypti were exposed to chitinase enzyme concentrations of 50U/mL, 100U/mL, 200U/mL, and 500U/mL for a period of 4 hours to assess their effectiveness. The results showed that as chitinase concentration increased, mosquito larvae mortality increased; after 4 hours, chitinase at 500 U/mL caused 100% mortality. After 4 hours of incubation, 200 U/mL was administered to achieve LC50 (which kills 50% of the exposed organisms), and after 3 hours, 500 U/mL was used to obtain LC90 values. During the study, it was discovered that different quantities of chitinase (100 U/mL, 200 U/mL, and 500 U/mL) inhibited 80% of the activity of the acetylcholinesterase enzyme. This study found that chitinase significantly increased glutathione S-transferase activity. Additionally, it was discovered that the chitinase treatment was non-hazardous to guppy fish. It was assumed that the P. putida Mb 12 chitinase tested was safe to employ in the aquatic habitat because no mortality was observed in the non-target organisms.

Fishery Technology 60 (2023) : 55 - 62

Chitinase Production by Marine Bacterium *Pseudomonas putida* Mb12 in Free and Immobilised form: A Comparative Investigation

Mini K. Paul[1]*, Amrutha Dinesh[1] and Jyothis Mathew[2]
[1]*Department of Biosciences, MES College, Marampally, Aluva, Ernakulam, Kerala, India*
[2]*School of Biosciences, MG University, Kottayam, Kerala, India*

Abstract

The biotechnology sector has taken notice of the better performance of immobilised microbial cells for enzyme production. This promising technology removes the majority of the constraints that free cells experience. In the present study, chitinase production by *Pseudomonas putida* Mb12 was investigated using both free and immobilised cells. The low-cost prawn shell substrate was used for the optimization of chitinase enzyme production by Ca-alginate immobilised *P. putida* Mb12. Beads made with 3 % Na-alginate, 0.5 M $CaCl_2$, and a curing time of 60 min displayed the highest bead stability and chitinase production. The best conditions for maximal enzyme synthesis by immobilised *P. putida* Mb12 were found to be 0.5 percent prawn shell powder, 35 °C, pH 6.0, and agitation at 50 rpm. Free bacterial cell, on the other hand, requires agitation at 150 rpm, 40 °C, pH 7.0, and 0.4 percent shrimp shell powder for maximum enzyme production. Immobilised *P. putida* Mb12 was more resilient to environmental variations such as temperature and pH, retaining 90 % of its peak activity at 30-65 °C and 100 % activity within pH 5–10. Fermentation and thermodynamic parameters suggested that immobilised cells produce 1.5 times more enzyme than free cells. After one month, immobilised *P. putida* Mb12 retained around 90 %

Introduction

Chitin is the second most prevalent polymer and is made up of *N*-acetylglucosamine through a β-(1 → 4) glycosidic bond (Gooday, 1995). Chitinases (E.C. 3.2.1.14, Poly (1, 4- N- acetyl D- glucosaminide) glucanohydrolase) are glycosidase enzyme that particularly degrade chitin at the bond between C_1 and C_4 of two consecutive *N*-acetylglucosamine monomers (Flach et al., 1992). Chitinase have variety of applications such as fungal protoplast isolation (Balasubramanian et al., 2003; Prabavathy et al., 2006), mosquito control by degrading cuticle of insects, which contain chitin as an essential component (Mendonsa et al., 1996), production of single cell protein (Vyas & Deshpande, 1991) and oligosaccharides and N-acetyl glucosamine synthesis (Makino et al., 2006).

Crustacean (shrimp, prawn, crab) shells contain high amount of chitin among all biological compounds (Muzzarelli, 1977). India is a major player in shrimp rearing and trading industry and disposal of shrimp shell waste generated during shrimp processing is a major problem in the fisheries sector (Dhillon et al., 2012). Most chitinous wastes are disposed through ocean dumping, cremation, or land filling. This results in natural capital loss, economic loss, and ecological pollution. The chitin

Environmental Quality Management

Early View
Online Version of Record before inclusion in an issue

RESEARCH ARTICLE

Prodigiosin pigment from *Serratia marcescens* MBM-17 from facial acne as antimicrobial agent

Nisha Pallath ✉ Sona Johnson, Elizabeth Paul, Raslana TA

First published: 13 July 2023 | https://doi.org/10.1002/tqem.22066

Read the full text ›

PDF TOOLS SHARE

Abstract

A pigment is a naturally occurring colored substance that is created by plants, animals, and microbes. Pigments are utilized in a variety of industries, including food coloring, pharmaceuticals, fabric dying, cosmetics, ink plastics, coloring paints, and so on. The Natural pigments /Bio pigments are very expensive because mass production is difficult. There are more pigments in nature, but only a small number are available in large enough amounts to be useful for industry. This study is attempted to isolate a bacterial red pigmented organism from facial acne was identified as *Serratia marcescens* MBM-17 according to Bergey's manual of determinative bacteriology and molecular characterization and production of red pigment was optimized at various growth factors, maximum pigment production was at pH 4, 72 h and 37 ± 2°C, that is, 15.56 g/ L. The partial purified pigment was characterized by UV–Vis, and maximum absorbance was at 533.5 nm. SEM analysis shows that the surface morphology and FTIR spectroscopy revealed the presence of prodigiosin. Prodigiosin has antibacterial efficacy against gram positive bacterial strains, *Staphylococcus aureus*, *Bacillus* sp, and gram negative bacterial strains. *Klebsiella* sp, *Pseudomonas* sp, *Salmonella* sp, antifungal potency against *Aspergillus niger*, *Aspergillus flavus*, *Penicillium* sp, *Rhizopus* sp, and *Mucor* sp, and checked the fabric dying effects of pigments. Prodigiosin used as fabric dye is applied on clothes, which shows good color tone. This study is highlighting the production of a natural pigment/drug, Prodigiosin with antimicrobial activity may be used for the manufacture of dyed dress materials and masks having antimicrobial action for public especially health workers in this pandemic situation.

References Related Information

Recommended

Comparative analysis of prodigiosin isolated from endophyte *Serratia marcescens*

B. Khanam, R. Chandra

Letters in Applied Microbiology

The prodigiosin change on the surface of *Serratia marcescens* detected by flow cytometry

Guangjian Rong, Youhong Zhang, Yan Chen, Jie Chen, Nan Jiang, Jose C. Merchuk

Cytometry Part A

ISSN NO : 1869-

Occupational stress and coping strategies among Women police personnel in Calicut City Police

Sabu K Restham Research Scholar (Part Time) PG & Research Department of Commerce ,Bharata Mata College Thrikkakara- Kakkanad, Ernakulam, Kerala

DR. Rafeeka Mol CA Assistant Professor and Research Supervisor ,Department of Commerce, MES College Marampally North, Vazhakkulam ,Aluva Kerala- 683107

Abstract

The women police in Kerala have been presently known as Pink Police.Kerala police introduced 'Pink Beat' patrols for enhancing the safety for women and children in public places. The Pink Beat includes specially trained women police personnel. These police personnel will patrol on KSRTC and private stage carriers and will be present at bus stops, schools, colleges and other public places.

Pink Police Patrol
The Pink Patrol cars have been equipped with GPS tracking devices as well as cameras installed on the front and rear sides of the vehicles. The camera sends continuous visuals to the control room. These patrol vehicle will be led by a women police officer and will have two other women police personnel. The patrol will be deployed in areas that have high presence of women and will function from 8 am to 8 pm.

60 percent of women police officers experienced moderate levels of work stress, 36.67 percent had severe levels, and just 3.33 percent had low levels. The length of time spent on the job and the distance from home were also shown to have a significant impact on occupational stress.

Keywords: Stress management, female police officers, and mental depression.

INTRODUCTION

Every civilization has a police force that enforces the law in order to protect its citizens and their property, and to prevent criminality and disruption. Residents may enjoy a quiet existence thanks to a well-functioning police force.It is important to note that the police officers who carry out these duties are often subjected to physical, mental, and social pressures as a part of their profession, including long and unpredictable working hours, round the clock duty, continual pressure to perform and responsibility. 1 There are many instances in which this remains mostly unreported or misdiagnosed, which has an adverse effect on the workforce's quality. Stress in the workplace is linked to a wide range of negative effects, including lower levels of commitment, depression, difficulty to focus and impulsive behaviour, and an

Identification and Extraction of Features from Malayalam Poems for Analyzing Syllable Duration Patterns

Authors: Jasir M P, Kannan Balakrishnan Authors Info & Claims

ACM Transactions on Asian and Low-Resource Language Information Processing, Volume 22, Issue 2 • Article No.: 60, pp 1–46 • https://doi.org/10.1145/3561298

Published: 10 March 2023 Publication History

Abstract

Text-to-speech (TTS) synthesis is an active area of research to generate synthetic speech from the underlying text. Compared to English and many European languages, TTS is yet to mature in Malayalam, the principal language of the South Indian state of Kerala. A syllable has to be uttered with proper durational and prosodic characteristics to emulate natural speech. When it comes to

Prevalence, Antimicrobial Resistance, and Molecular Characterization of Escherichia coli Isolated from Food Contact Surfaces in Seafood Pre-Processing Plants (India)

B. Francis
Department of Marine Biology, Microbiology, and Biochemistry, School of Marine Sciences, Cochin University of Sci-ence and Technology, Lakeside Campus, Cochin-682 016, Kerala, India

A.C. Antony
Department of Biosciences, MES College, Marampally, Aluva-683105, Kerala, India

D.P. Sukumaran
Department of Marine Biology, Microbiology, and Biochemistry, School of Marine Sciences, Cochin University of Sci-ence and Technology, Lakeside Campus, Cochin-682 016, Kerala, India

A.A.M. Hatha
Department of Marine Biology, Microbiology, and Biochemistry, School of Marine Sciences, Cochin University of Sci-ence and Technology, Lakeside Campus, Cochin-682 016, Kerala, India

DOI: https://doi.org/10.18502/jfqhc.9.1.9685

Keywords: Drug Resistance, Escherichia coli, Phylogeny, Serotyping, Biofilms, Seafood

PDF

Published
2022-06-15

Issue
Volume (9) issue (1)

Section
Articles

Open Access Review

The Paradox of Shorebird Diversity and Abundance in the West Coast and East Coast of India: A Comparative Analysis

by A. P. Rashiba [1,†], K. Jishnu [2], H. Byju [3], C. T. Shifa [4], Jasmine Anand [5], K. Vichithra [6], Yanjie Xu [7], Aymen Nefla [8], Sabir Bin Muzaffar [9,*,†], K. M. Aarif [10,*,†] and K. A. Rubeena [11]

1 Department of Zoology, Wildlife Biology Division, Farook College PO, Kozhikode 673632, India

2 Department of Zoology, MES Ponnani College, Ponnani, Malappuram 679577, India

3 Centre for Advanced Study in Marine Biology, Annamalai University, Parangipettai 608502, India

4 Department of Zoology, Govt College, Madappally, Kozhikode 673102, India

5 Department of Zoology, T.K. Madhava Memorial College, Nangiarkulangara, Haripad, Alappuzha 690513, India

6 Department of Zoology, MES Keveeyam College, Valanchery, Malappuram 676552, India

7 The Helsinki Lab of Ornithology, Finnish Museum of Natural History, University of Helsinki, P.O. Box 17, FI-00014 Helsinki, Finland

8 Department of Biology, Faculty of Sciences of Tunis, University of Tunis El Manar, El Manar II, Tunis 2092, Tunisia

9 Department of Biology, United Arab Emirates University, Al Ain P.O. Box 15551, United Arab Emirates

10 Terrestrial Ecology, Centre for Environment and Marine Studies, King Fahd University of Petroleum and Minerals, Dhahran 31261, Saudi Arabia

+ Show full affiliation list

* Authors to whom correspondence should be addressed.

† These authors contributed equally to this work.

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OPERATIONAL CONSTRAINTS OF RESIDENTIAL APARTMENT BUILDERS IN KERALA

Dr. Rajeev Kumar A.D.
Associate Professor, Dept. of Commerce, Govt. College, Ambalapuzha, Kerala
Dr.Bino Joy (Corresponding Author)
Associate Professor, Post Graduate Department of Commerce, Govt.College, Kottayam, Kerala
Dr.Sajana K Muhammed
Assistant Professor, MES College,Marampally, Aluva.Kerala

Abstract

Despite rising demand for buildings and apartments, different operational constraints prevent real estate developers in Kerala from capitalizing on the favorable situation. Against this background, the present study investigates the operational issues faced by residential apartment builders in Kerala related to financing, material and labour, and marketing. A sample of 108 builders from 147 registered builders under the CREDAI's Kerala Chapter was selected randomly for the study. Cost escalation due to high-cost financing, material price fluctuations, increasing labor cost, and high stamp duty makes builders difficult to execute the timely delivery of apartments at the promised price and quality. The study highlights the need for builders to adopt value engineering concepts, eliminating, or modifying anything that adds to the project cost to become cost-effective.

Keywords: Operational Constraints, Builders, Real Estate, and Residential Apartments

Introduction

Despite the market slowdown driven by pandemic-related disruptions, the Indian construction industry seems to be back on a growth trajectory in the latter half of 2021, rewarding the economic stimulus through targeted government spending. The Indian construction sector is emerging as the third-largest globally, owing to buoyant government investment, rising general income levels, the emergence of the middle class, changes in occupational patterns, and growing urbanization. It employs 44 million people (investindia.gov.in), contributes nearly 9 percent of the country's GDP, and is estimated to grow further at an average cumulative annual rate of 6 percent from 2019 to 2024. Enticed by the tremendous growth potential, many people have entered the real estate sector as builders. At present, more than 22,000 builders registered under the Confederation of Real Estate Developers' Associations of India (CREDAI) function across the country, and the number of unregistered is looming even bigger. As a result, competition is becoming more intense, forcing builders to employ innovative sales promotional strategies (Janis,2013).

Kerala ranks 8th among Indian states in terms of population density, with 859 people per square Kilometer, compared to the national average of 382 (Census, 2011). The state's house construction industry has been experiencing vertical growth in its operations for several years, owing to the people's strong desire to own a home and an increase in income. Keralites' housing preferences are changing, as evidenced by a shift from free-standing homes to multistory residential apartments (Gopikkuttan,2004). Apartments are becoming more acceptable for young people, particularly among employed couples (KPMG, 2014), and more than 20 percent of Keralites prefer to live in housing apartments (Nirmithi Kendra, 2010). Despite rising demand for buildings and apartments, the operational constraints caused by finance, marketing, human resources, material management, and legal compliance are preventing Kerala's real estate developers from capitalizing on the favorable situation. A detailed examination of the operational problems of builders in Kerala sounds imperative to better explains this paradoxical turnaround.

Literature Review

Literature on the challenges confronted by the construction industry is expanding, with several studies identifying and analyzing the problems from different angles. In general, poor infrastructure, lack of modern technology, insufficient resources, untrustworthy communication, poor documentation, frequent turnover of key personnel, political instability, low accountability and transparency, and delayed decision-making are bottlenecks for the construction sector in developing

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FACTORS MOTIVATING THE CONSUMPTION OF AYURVEDIC HEALTH TOURISM SERVICES IN KERALA

Priya Chandran, Research Scholar, Pavanatma College, Murickkassery
Dr. Johnson. V Associate Professor Pavanatma College, Murickkassery

ABSTRACT
Ayurveda, the science of life which is the oldest curing discipline is frequently called the mother of all healings. Ayurveda the ancient art of healing has brought authentic fitness, contentment, and prosperity to millions of individuals throughout the ages. Kerala has become a cynosure for health tourism and marketing Ayurveda as a trademark as it is the backbone to fetch a wide range of guests to India. This article presents a research study to identify the motivating factors for choosing traditional Ayurvedic treatments in Kerala among tourist patients. Primary data essential for the study was collected from 544 tourist patients, 272 from foreigners, and the rest from nationals by using the convenience sampling method. A structured questionnaire was used to collect data from the tourist patients. The high quality of Ayurvedic services, expert doctors and other medical staff, and the availability of whole-body medical treatment were the most important factors that influence tourists to experience Ayurvedic treatment in Kerala.
Keywords: Ayurveda, Ayurvedic health tourism, motivating factors, foreign and domestic tourists.

I. INTRODUCTION
Tourism, one of the leading industries in the universe, is a part of the service sector having a sturdy effect on the economy. It focused on certain factors that influence the selection of their destination (Cooper & Hall 2008). Since the modification of the recent status of the tourism sector, the opinion of the tourists as regards the place of travel is a significant factor (Vuuren & Slabbert, 2011). The term travel motivation has an essential role in making interested in people selecting a destination (Venkatesh, 2006).

Motivation is the strongest feeling that drives an individual to concentrate steadily and persist in the achievement of an objective. Motivation is commonly used for the whole class of drives, desires, needs, wishes, and similar forces. It is the process of stimulating people to yield a preferred sequence of activities. In the words of Joppe (2010), the initial motivation for travel is travel with the intention of health care.

Tourist motivation is the psychological impetus capable to decide about travel and it is the aspect that influences the tourists to travel and derive satisfaction from the travel. As motivation is intertwined with physiology, psychology, and philosophy, it is a device to know the mind of the travellers and the influential factors to travel (Tharakan, 2015). As tourist motivation creates interest in people to travel, it is significant to study tourism motivation for the effective management of tourism.

Through the study of motivation in the area of tourism, the administrative wing of the tourism centres will be able to understand the needs and wants of the tourists and thus they can design their products and services as per the choice of the clients (Mahika 2011; Tharakan 2015). When motivation became an aid to satisfy the desires and requirements of the people, the significance of studying motivation arises (Chang, 2007).

Cooper and Hall (2008) state that tourism is subject to a collection of influences and factors that determine its relative distribution. While going through the literature the factors that motivate tourists to visit Kerala for its traditional Ayurvedic treatments are high quality of health care, word of mouth, tags like god's own country, cost-competitive advantage, availability of skilled doctors, holistic approach, the international standard, good weather and offering of good holidays, quality of services, educated people, availability of whole-body medical treatment, hazardous effect of modern medicine and the use of natural resources as medicine, respectful attitude towards nature and its ecological balance, superior significance on medicinal health (yoga, meditation, etc.) and the concept of

Recent Advances and Technologies in Chitinase Production Under Solid-State Fermentation

Mini K. Paul[1]*, B.T. Umesh[1] and Jyothis Mathew[2]

[1]Department of Biosciences, MES College, Marampally, Aluva-7, Ernakulam, Kerala, India.
[2]School of Biosciences, MG University, Kottayam, Kerala, India.

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Our target is to evaluate recent literature on chitinase production from different sources via solid-state fermentation and to analyze several strategies to improve chitinase production via solid-state fermentation. Plant pathogen biocontrol, sequential transformation of chitin into bioactive molecules such as chito-oligosaccharides and N-acetylglucosamine, protoplast synthesis from filamentous fungi, and single-cell protein production are some of the applications for chitinase. Despite their enormous biological importance, chitinases have received little commercial importance due to the smaller percentage of microbes with high efficiencies, the enzymes' decreased activity and consistency, and the cost of production. Solid-state fermentation (SSF) is less expensive, requires fewer vessels, uses less water, requires fewer wastewater treatments, produces a greater product yield, has a lower risk of bacterial contamination, and requires less energy expenditure. Despite its higher productivity and lower cost, the SSF technique is now mostly limited to lab scales. Furthermore, the crude SSF products can be used as an enzyme source for biotransformation. There are many findings on different microorganisms that produce chitinase by SSF. So it is very critical to isolate new organisms for such production. So we assessed the traditional approach to medium optimization, which focuses on changing one factor at a time while leaving the others constant, and statistical optimization techniques such as response surface methodology (RSM), artificial neural networks (ANNs), and genetic algorithms (GA).

Keywords: Chitin; Chitinase; Optimization; Substrate; Response Surface Methodology; Solid state fermentation.

Chitinase

Chitin is a structural element found in mollusks, crustaceans, algae and fungi [1] Chitin is the 2nd most prevalent biopolymer in nature, next to cellulose [2]. Chitinase (E.C. 3.2.1.14, Poly 1, 4-N-acetyl D-glucosaminide glucanohydrolase) is a glycosidase enzyme that specifically degrades chitin. The cleaving site for chitinase is the bond glucosamine monomers[3]. Chitinases occur in microorganisms, plants and animals. Chitinolytic microorganisms are abundant in nature and are ideal producers of chitinase because of their low cost of production and the accessibility of raw materials for their cultivation. Bacteria like *Bacillus* sp. BG-11, *Bacillus laterosporous* MML 2370 and *Paenibacillus*

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Bioactive Exopolysaccharide From Marine Bacteria Micrococcus sp.MRN-01

P Nisha, Elizabeth Paul, Bismimol Francis, MA Hyrunnisa, R.M Shahma, Sona Johnson

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Abstract

Many more undiscovered bioactive materials /compounds from marine bacteria, the list of the isolated marine strains to date, does not reflect the diversity of formspresent in the sea. Marine environment having higher sources of natural bio-compounds or polysacharide based biomaterials which are associated with solid surfaces as biofilms. Bacterial exopolysacharides is a biomaterials which showing a growing interest especially from biofilms and extreme marine environments. The main objective of this study is to characterize the bacterial exopolysacharide (EPS)and demonstrate the biological activity profile. Optimization of the exopolysacharide production from MRN-01, higher with the growth conditions of 96 hrs of incubation, 27 °C, 44.9 gm/L and optimize the total carbohydrate and total protein with various parameters, more production at 96 hrs, 27 °C, pH 9, ic, 128.23 gm/L, 100.26 gm/L respectively. EPS characterization by SEM, FT- IR analysis and revealed the presence of COOH, glucan, uronic acid,etc. EPS exhibit biological activities against pathogenic microbes and plant pathogenic fungi, express cyto toxicity against HELA cells and exhibiting antioxidant activity. Exo polysacharide production on steel surface influence corrosion with increased incubation.

Introduction

The bacteria in most biofilms embedded in extracellular polymeric substances [1] which comprise the capsular polysaccharides, produce a cohesive layer or capsule which is tightly linked to the cell surface, and the exopolysaccharides (EPS) consists of polysaccharides,lipids, proteins, nucleic acids,etc, secrete a form of loosely attaching slime layer to the cell surface or to the outer environment[2].Due to their unique structure and physical properties, microbial exopolysaccharides have a broad range of

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Gradient Boost algorithms for Modelling Malayalam Poem Syllable Duration

JASIR M.P[1,2]
KANNAN BALAKRISHNAN[1]
JASEENA K.U[2]

[1]CUSAT - Cochin University of Science and Technology
DCA - Department of Computer Applications
Kerala-India-PIN CODE-682022
[2]MES College Marampally, Aluva
DCA-Department of Computer Applications
Kerala-India-PIN CODE-683105

Abstract. Emulating natural speech has been a top priority ever since the research activities began in the area of Natural Language Processing (NLP). Text To Speech Synthesis (TTS) consists of several stages, which include Text Normalization, Syllabification and Unit Selection, Duration Analysis Modelling, and Prosody Analysis Modelling. Proper syllabification was required earlier when rule-based concatenative synthesis was used as the main method to synthesize speech. Now statistical parametric speech synthesis is the state of the art. Supervised and unsupervised machine learning frameworks can be used to model different aspects of speech such as duration, prosody etc. The proposed work uses classical poem construct Vruta (meter) to identify the features determine syllable duration. Nineteen features are extracted from the orthographic representation of poem according to the Vruta definition. Kakali, Keka, and Manjari are the Vrutas considered. Also the contextual features of the syllables and the accoustic properties like the origin of the syllable are considered to build the feature set. The proposed work employs Gradient Boost Algorithms for modelling the duration of Malayalam poem syllables. All the models give superior values for the coefficient of determination (R2) compared to other major models. Simple Gradient Boost Machine (GBM) is able to produce 90.723 for R2. Similarly, XGBoost gives 90.726, LightBoost yields 90.693 and CatBoost delivers 90.819. Also, the models exhibit lesser values for different Statistical Error Indicators (SEI) - MAE, RMSE, and MAPE.

Keywords: Text To Speech Synthesis, Malayalam TTS, Duration Modelling, Ensemble Machine learning, Gradient Boost Machine, XGBoost, LightBoost, CatBoost

(Received April 07th, 2022 / Accepted May 2st, 2022)

1 Introduction

TTS is a branch of NLP that tries to emulate natural speech by artificially synthesizing speech from textual representations. It has got widespread applications as an assistive experience enhancing technology [14].

The researches in the area of TTSs have begun as early as 1950. At first the efforts were to approximate the articulatory aerodynamics of the vocal tract. The first electronic model that emulates vocal tract was developed in M.I.T in 1953. It required hand adjustments of a variable inductor for each section [53]. Dynamic control was added to this M.I.T model by Rosen.G in 1958 [47]. Due to the complexity of the model and the limitations of the available technology during the period, articulatory synthesis eventually frizzled out. Later rule based concatenative speech synthesis came

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AN INTELLIGENT SYSTEM FOR THE PREDICTION OF COVID -19

Dr Julie M David [1]MES College Marampally Kerala,India
Neenu[2] ,Riya Azeez [3] [1]MES College Marampally Kerala,India

Abstract - The Novel Corona Virus 2019 is a respiratory problem that similar to pneumonia. It 's one of the most infectious diseases in the 21st century. This paper proposes the methodology is based on a hybrid model which combines the convolutional neural networks techniques and random forest model with extrapolations based on recurrent neural networks. This combination provides understandable results in relation of a coefficient that varies with the limitation measures, which may be further data. To easily work with hundreds of features it is faster to train than decision trees as we are working only in a subset of features in our model.

COVID-19 diagnosed utilizing always one among the three tests in most cases. Assessment based on Reverse Transcription Polymerase Chain Reaction test, Chest X-Ray and Computed Tomography images [8].

Among the three ways of diagnosis, more robust is CXR because it is cheaper, quicker and widespread.

High-Gain Dual-Band Waveguide-Fed Dielectric Resonator Antenna

Publisher: IEEE

Cite This

PDF

Sheeba Varghese ; Parambil Abdulla ; Ann Mary Baby ; Jasmine P. M. All Authors

Abstract:

A distinctive configuration of rectangular waveguide-fed hemispherical dielectric resonator antenna (HDRA) for high-gain dual-band operation is described in this letter. A cylindrical-shaped hard rubber with a circular slot and $\epsilon_r = 3$ is inserted between HDRA and ground plane to achieve dual-band, excellent coupling, enhanced bandwidth, and high gain. The structure of the antenna is very simple to fabricate. Measured results show that the proposed antenna radiates in two bands with resonant frequencies 7.65 and 10.04 GHz. The first band provides a bandwidth of 4.98% and a high gain of 11.72 dBi with a broadside radiation pattern

INDIAN JOURNAL OF SCIENCE AND TECHNOLOGY

RESEARCH ARTICLE

Kurthia gibsonii Mb126 immobilised chitinase against *Aspergillus flavus*, a fungal pathogen linked to lemon postharvest deterioration

Mini K Paul[1]*, K D Mini[2], Anu Ruby Benn[1], Jyothis Mathew[3]

1 Department of biosciences, MES college, Aluva7, Kerala, Marampally, Ernakulam, India
2 Assistant Professor, Department of Zoology, Sree Sankara college, Kerala, Kalady, Ernakulam, India
3 Professor, School of Biosciences, MG University, Kottayam, Kerala, India

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* **Corresponding author.**
minikpaul2016@gmail.com

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Abstract

Background of the study: As fungi become resistant to commonly used pesticides, fungicides are becoming not only more expensive, but also less effective in controlling postharvest infections. New chitinase immobilisation techniques are urgently needed to minimize enzyme costs while enhancing bio catalytic performance, antifungal activity, enzyme stability, and reusability. **Objectives:** The objective of this study was to immobilise chitinase of *Kurthia gibsonii* Mb126 by entrapping it in calcium alginate beads and to analyse its antifungal activities against *Aspergillus flavus*. **Methods:** The optimal parameters influencing the immobilization process and the characteristics of soluble and immobilised chitinase of *K. gibsonii* Mb126 were analysed. The antifungal activities of immobilised and free chitinase of *K. gibsonii* Mb126 against *A. flavus*, which was isolated from decayed lemon fruit, were performed using the agar-disk diffusion method. Free chitinase 25.0 mL (0.8 U/mL) and immobilised chitinase 0.06 g (specific activity 124–192 U/mg) were treated on separate lemon fruits for testing antifungal activity against *A. flavus*. **Findings:** *K. gibsonii* Mb126 chitinase was immobilised perfectly in calcium alginate beads. After optimising process parameters of immobilisation (sodium alginate concentration 3%, calcium chloride 0.2 M, 120 min. curing time), the specific activity of *K. gibsonii* Mb126 immobilised chitinase improved to 11.9-fold greater than the free form of chitinase and the immobilisation yield increased to 84%. It was observed that the thermal stability and storage stability of immobilised chitinase were better than those of free enzymes. The immobilised chitinase could be reused, and it retained 78% activity even after 16 cycles. The surface morphology of immobilised chitinase was observed in a scanning electron microscope at different magnification powers. Enzyme kinetics was studied and compared with that of its chitinase soluble counterpart. An *in vitro* study demonstrated that immobilised chitinase of *K. gibsonii* Mb126 has higher antifungal activity against *A. flavus*. *In vivo* experimental study of the

Research Article

Microbiological Analysis of used Kitchen Sponges from Selected Areas of the Ernakulum District of Kerala

Mini K Paul*, Swathy Gopinathan

Department of Biosciences, MES College, Marampally, Aluva, Ernakulam, Kerala, INDIA.

Submission Date: 12-02-2022; Revision Date: 14-02-2022; Accepted Date: 12-03-2022.

ABSTRACT

The focus of this research was to assess the microbiological contamination of used kitchen sponges as well as the efficacy of natural and chemical disinfectants. Twenty sponges were collected from households in the Ayyampilly area near Vypin in the Ernakulam district of Kerala, India. The total viable bacteria (TVC), faecal coliforms (TCC), and fungus (FC) were then quantified. Two prominent isolates, denoted as KSBT18 and KSBT32, were identified as *Acinetobacter baumannii* and *Staphylococcus caprae*, respectively. Sequencing of the 16S rRNA gene validated the result. The disc diffusion method was used to test the antibiotic sensitivity of isolated bacterial species on Muller-Hinton agar. *Acinetobacter baumannii* KSBT18 were resistant to all antibiotics tested, and *Staphylococcus caprae* KSBT32 was found to be resistant to ampicillin, while sensitive to tetracycline and erythromycin. The sponges were disinfected, with both pure natural products (ginger extract, lemon juice and vinegar) and chemical disinfectant (3 % hydrogen peroxide, 0.1% Phenol, and 100% alcohol) for upto15 min. Natural disinfection approaches did not lower bacterial counts, however phenol disinfection (Himedia) demonstrated a larger reduction in total viable bacteria (TC) than the Lysol disinfection method. We found that treating badly polluted kitchen sponges with phenol (0.1 percent) was the most effective way to eliminate bacteria. After 15 min of exposure, bacteria were decreased to 28 CFU/mL, significantly ($P < 0.05$). The majority of households (65%) cleaned to make their homes look clean, smell fantastic, and eliminate germs; nevertheless, householders' perceptions of cleanliness did not always reflect microbiological reality. In terms of home hygiene, more investigation and awareness are required.

Key words: *Acinetobacter baumannii*, *Staphylococcus caprae*, Kitchen sponges, Sanitation, Disinfectants.

Correspondence:
Dr. Mini K Paul,
Department of Biosciences, Mes College, Marampally, Aluva-7, Ernakulam, Kerala, INDIA.

Email: minikpaul2016@gmail.com

INTRODUCTION

An estimated 100 million foodborne illnesses and 120,000 foodborne illness-related fatalities happen annually India, resulting in the loss of 8 million disability-adjusted life years.[1] Food-borne diseases are a serious public health issue, but little is known about their impact on worldwide social and economic growth. It is linked to high rates of illness and mortality over the world, making it a severe public health concern. In addition to the sheltering and transmission of infection, the kitchen is gradually becoming recognised as the most major area in the residence for cross-contamination of foodborne pathogens. The main concern in the home has been highlighted as cross contamination of pathogenic organisms, such as *Staphylococcus aureus*, *Salmonella* spp., *Listeria monocytogenes* and *Campylobacter* spp.,[2] which can be either direct or indirect. Direct cross contamination occurs when bacteria are transferred directly from raw food, whereas indirect cross contamination occurs when microorganisms are transferred via a vehicle such as kitchen towels and sponges, hands, utensils, and surfaces.

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A sponge is a cleansing tool that can be used for a variety of tasks, including scrubbing bathrooms and cleaning kitchen equipment. Kitchen sponges, in particular, are used on a daily basis during kitchen cleaning because of their capacity to remove food residues. As a result, a considerable percentage of the

the participants and taken back and transported to the Microbiology Laboratory, Department of Biosciences, MES College, Marampally, Aluva, Kerala. Samples were processed in an hour. In addition, a questionnaire designed by the investigators for this study was completed by the participants. The questionnaire

Antifungal effects of *Kurthia gibsonii* Mb 126 chitinase as a seed treatment on seed-borne fungi of rice seed on germination percentage and seedling vigor

Mini K. Paul, K. D. Mini, Jyothis Mathew Author Affiliations

Open Access
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DOI: 10.7324/JABB.2022.100417

Abstract

Soil and seed-borne phytopathogenic fungi are the main factors limiting crop yield in India's agricultural sector. They attack the root of the seed before germination or seedling after germination resulting in huge deprivation in crop yield. In this scenario, it is crucial to control phytopathogenic fungi to ensure sustainable food production to the ever-increasing world

Deproteinization of Shrimp Shell Waste by *Kurthia gibsonii* Mb126 immobilized chitinase

Mini K. Paul[1] , K.D. Mini[2] , Ally C. Antony[1] and Jyothis Mathew[3]

[1]Department of Biosciences, MES College, Marampally, Aluva-7, Ernakulam – 683 107, Kerala, India.

[2]Department of Zoology, Sree Sankara College, Kalady, Ernakulam – 683 574, Kerala, India.

[3]School of Biosciences, M.G. University, Kottayam – 686 560, Kerala, India.

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ABSTRACT

This work was aimed at immobilization, characterization, and utilization of chitinase from *Kurthia gibsonii* Mb126. Immobilization of *Kurthia gibsonii* Mb126 chitinase on glutaraldehyde treated chitosan was carried out with

Text-to-Speech Synthesis: Literature Review with an Emphasis on Malayalam Language

Authors: Jasir M. P., Kannan Balakrishnan Authors Info & Claims

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Abstract

Text-to-Speech Synthesis (TTS) is an active area of research to generate synthetic speech from

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FACTORS MOTIVATING THE CONSUMPTION OF AYURVEDIC HEALTH TOURISM SERVICES IN KERALA

Priya Chandran, Research Scholar, Pavanatma College, Murickkassery
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Large-Scale Transparent Photovoltaics for a Sustainable Energy Future: Review of Inorganic Transparent Photovoltaics

Benjamin Hudson Baby[a,†], Malkeshkumar Patel[a,b,†,*], Kibum Lee[c,*], and Joondong Kim[a,b,*]

[a]Photoelectric and Energy Device Application Lab (PEDAL) and Multidisciplinary Core Institute for Future Energies (MCIFE), Incheon National University, Incheon 22012, Republic of Korea
[b]Department of Electrical Engineering, Incheon National University, Incheon 22012, Republic of Korea
[c]SolarLight Ltd, 119 Academy Rd., Incheon 22012, Republic of Korea

[†]These authors equally contributed to this work.

Correspondence to:mpatel@inu.ac.kr, solarlight_1@naver.com, joonkim@inu.ac.kr

Received: December 16, 2021; **Accepted:** January 4, 2022

Abstract

Go to

Transparent photovoltaics (TPVs) are a crucial energy platform for harvesting solar energy in windows, enabling onsite power generation for widespread applications in buildings, vehicles, displays, sensors, and the Internet of things. TPV devices are fabricated using eco-friendly processing methods and materials, and must perform stably for an adequate societal impact. This review article is focused on the emerging TPV devices made of inorganic materials, including oxides and two-dimensional sulfides. Herein, we briefly review the wide-bandgap inorganic TPVs and their performances. Specifically, the sputtering method is

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Implications of MWCNT reinforcement on the morphology, mechanical and thermal properties of poly-(trimethylene terephthalate)/ polyethylene blend nanocomposites

Aswathi Madathinal Kunjappan, Arunima Reghunadhan, Ajitha A Ramachandran, Moothetty Padmanabhan, Lovely Mathew & Sabu Thomas

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International Journal of Automation and Control > 2022 Vol.16 No.2

Title: A novel optimised method for speckle reduction in medical ultrasound images

Authors: V.B. Shereena; G. Raju

Addresses: Department of Computer Applications, MES College, Marampally, Kochi, India ' Department of Data Science, CHRIST (Deemed to be University), Lavasa Campus, Pune, India

Abstract: The advancement of medical imaging techniques evolving from X-ray to PET images and the medical image analysis helped medical experts to detect, diagnose and offer treatments for complex disorders and deadly diseases in the human body. Among the various modalities used, Ultrasound imaging is the most widely accepted modality because of its affordability, non-invasive nature and various other features. But the presence of speckle noise in ultrasound image lowers the image quality and reduces diagnostic value. This article states an improved hybrid speckle noise reduction method, a combined application of Kuan and non-local means filters. In this method, Kuan filter is used to sharpen the edges and thereafter the speckle noise elimination is done by using the non-local means. In addition, the performance of the proposed hybrid filter and its design parameters are optimised by using a meta-heuristic called grey wolf optimiser. The performance of hybrid method is evaluated by

Denoising Digital Image-A Deep Learning Approach

Dr. Julie M David[1] Riya K Azeez[2]

[1]*Department Of Computer Application India*
E-mail: riyaazeez1997@gmail.com
[2]*Department Of Computer Application India*
E-mail: julieeldhosem@yahoo.com

Abstract

The technique of removing noise from a dataset or a picture is known as denoising. The classifier's accuracy and prediction are poor because the image contains undesired information. Image in the field of image processing, denoising has remained a key problem. Image sensor data sets are frequently affected by noise. Imperfect instruments, issues with the data gathering process, and natural occurrences that interfere with the data of interest can all degrade the data of interest. Furthermore, transmission failures and compression might introduce noise. As a result, denoising is frequently an essential and first step before analysing visual data. To compensate for such data contamination, it is vital to use an effective denoising algorithm. To decrease visual noises, an autoencoder is employed. The autoencoder is a neural network that automatically encodes and decodes. Information can be compressed and

data to make predictions or judgments without having to be explicitly programmed to do so. Machine learning algorithms are utilised in a range of applications where traditional algorithms are difficult or impossible to build, such as medicine, email filtering, speech recognition, and computer vision. However, not all machine learning is statistical learning. A subset of machine learning is closely related to computational statistics, which focuses on making predictions with computers; however, not all machine learning is statistical learning. The topic of machine learning benefits from mathematical optimization research since it provides methodologies, theory, and application fields. Data mining is a similar topic that focuses on unsupervised learning and exploratory data analysis. Data and neural networks are used in some machine learning implementations to replicate how a biological brain works.

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2021-12-30

Dual-Band Waveguide Fed Hollow Cylindrical Dielectric Resonator Antenna

By Sheeba Varghese, Parambil Abdulla, Baby Ann Mary, Puthenveetil Muhammed Jasmine, Kunnath Kodakkat Ansha

Progress In Electromagnetics Research C, Vol. 117, 145-157, 2021

doi:10.2528/PIERC21103005

Abstract

In this paper, we present a waveguide-fed hollow cylindrical dielectric resonator antenna (CDRA) with dual-band operation and its modified structure for wider bandwidth and enhanced gain operation. The distinctive nature of the structure provides two bands having resonant frequencies at 8.46 GHz and 9.24 GHz with maximum gains of 5.37 dBi and 6.86 dBi respectively with a single dielectric resonator antenna (DRA). The dual-band is achieved due to the resonance of DRA and the air column inside it. Excellent coupling is achieved in both bands. The dual-band structure is modified by changing the volume

Circularly polarized split ring slotted waveguide array antenna for 6G communications

K.K. Ansha [a], P. Abdulla [a], P.M. Jasmine [b], U. Sam Kollannore [b]

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Abstract

Circularly polarized split ring slotted array on the broad wall of the WR3 waveguide for 6G Communication is presented in this paper. Circular polarization is manifested by using split ring slot array on the waveguide. The proposed antenna covers a -10 dB

Optik
Volume 243, October 2021, 167397

Design of broadband circularly polarized THz antenna with stable radiation pattern for 6G communications

Ansha KK, Abdulla P, Sam Kollannore U

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Abstract

This paper presents a compact efficient and stable high gain broadside circularly polarized (CP) antenna using WR3 waveguide. Asymmetrical H-shaped slot arrays deployed on the broadside wall of the waveguide, suits the antenna for operating in the Sub THz range of frequencies. The designed antenna operates almost entire frequency range of WR3 waveguide from 227GHz to 380GHz with a return loss ≤−10dB roofing the WM834 band. The proposed antenna possesses a wide axial ratio bandwidth (ARBW) of 28.28GHz spanning from 289.1GHz to 317.38GHz with persistent gain and exhibits a

Advances and Applications in Mathematical Sciences
Volume 20, Issue 12, October 2021, Pages 3049-3060

CHURN PREDICTION - A COMPARATIVE ANALYSIS WITH SUPERVISED MACHINE LEARNING ALGORITHMS

CHIKA K. GANGADHARAN[1], ROSHNI ALEX[2] and M. K. SABU[3]

[1,2]Department of Electronics
MES College Marampally, Kerala
E-mail: chika4895@gmail.com
roshnivalex@gmail.com

[3]Department of Computer Applications
Cochin University of Science and Technology, Kerala
E-mail: sabumk@cusat.ac.in

Abstract

Customer churn predictive model plays an indispensable role in all the industries since "churn is the rate at which the customers stop doing business with an organization". Machine Learning algorithms are used to build faultless models for prediction and classification. In this paper, a comparative analyzation of the performance of five different supervised machine learning algorithms namely Gaussian Naive Bayes, Support Vector Machine, *K* Nearest Neighbours, Decision Tree and Random Forest Classifiers in predicting churn is studied. Churn_Modelling dataset from Kaggle is used to test these classifiers. Experimental outcomes show that Random Forest Classifier outperforms all other algorithms in predicting the churn of a customer regarding accuracy, precision and recall.

An Improved Multivariate Weather Prediction Model Using Deep Neural Networks and Particle Swarm Optimisation

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Author

Listed:

- K U Jaseena
  (Division of Information Technology, School of Engineering, Cochin University of Science and Technology, Kochi, Kerala, India†Department of Computer Applications, MES College Marampally, Aluva, Kochi, Kerala, India)
- Binsu C Kovoor
  (Division of Information Technology, School of Engineering, Cochin University of Science and Technology, Kochi, Kerala, India)

Registered:

Abstract

Accurate weather prediction is always a challenge for meteorologists. This paper suggests a Deep Neural Network (DNN) model to predict minimum and maximum values of temperature based on various weather parameters such as humidity, dew point, and wind speed. Particle Swarm Optimisation (PSO) algorithm is applied to select relevant and

Discussion on degree of entanglement, chain confinement, and reinforcement efficiency factor of PTT/PE blend nanocomposite embedded with MWCNTs

Aswathi Madathinal Kunjappan, Arunima Reghunadhan, Ajitha A. Ramachandran, Lovely Mathew, Moothetty Padmanabhan, David Laroze, Sabu Thomas

First published: 30 April 2021 | https://doi.org/10.1002/pat.5303 | Citations: 8

Abstract

The current report addresses the rheological and viscoelastic properties of poly (trimethylene terephthalate)/polyethylene blend system containing multiwall carbon nanotubes (MWCNTs). The alliance of MWCNT into the blend system raises both the modulus and the dynamic viscosity. The thermophysical properties of blend nanocomposites exhibit a lower threshold percolation particularly in comparison to nanocomposites PTT/MWCNT. The dynamic mechanical properties of nanocomposites were also enhanced by adding MWCNT and the higher storage modulus value of nanocomposites explains their reasonable load—bearing capacity by inserting MWCNT. Reinforcing efficiency factor, degree of entanglement density, coefficient of effectiveness,

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DOI: 10.1002/pat.5571

RESEARCH ARTICLE

polymers advanced technologies WILEY

Thin and efficient EMI shielding materials from binary thermoplastic blend nanocomposites

Aswathi Madathinal Kunjappan[1] | Arunima Reghunadhan[1,2] | Ajitha A. Ramachandran[1,3] | Lovely Mathew[1,4] | Moothetty Padmanabhan[5] | David Laroze[6] | Sabu Thomas[1,7]

[1]International and Interuniversity Centre for Nanoscience and Nanotechnology, Mahatma Gandhi University, Kottayam, Kerala, India

[2]Department of Chemistry, TKM College of Engineering, Kollam, Kerala, India

[3]Department of Chemistry, MES College, Aluva, Kerala, India

[4]Carmelgiri College, Idukki, Kerala, India

[5]Department of Chemistry, Amritha Vishwa Vidyapeetham, Kollam, Kerala, India

[6]Instituto de Alta Investigación, CEDENNA, Universidad de Tarapacá, Arica, Chile

[7]School of Energy Materials, Mahatma Gandhi University, Kottayam, Kerala, India

Correspondence
Sabu Thomas, International and Interuniversity Centre for Nanoscience and Nanotechnology, Mahatma Gandhi University, Kottayam, Kerala 686560, India.
Email: sabuthomas@mgu.ac.in; sabupolymer@yahoo.com

Funding information
University Grants Commission

Abstract

EMI shielding materials and related research are of very relevance in this era of electronic gadgets. Here this report presents a binary thermoplastic blend nanocomposite system comprising poly-(trimethylene terephthalate) and polyethene compatibilized with multiwalled carbon nanotubes, which are showing superior electromagnetic interference (EMI) shielding compared to similar systems. The blend composition with a 90/10 ratio of PTT/PE was showing the optimum properties when a MWCNT concentration of 1 wt% was incorporated. The compatibilization efficacy was analyzed and confirmed through scanning and tunneling electron microscopes. The MWCNTs are preferably localized in the PTT phase. The blend system provides an electrical percolation threshold of 0.19 wt% due to the double percolating effect of the blend system and MWCNT in the PTT phase. It was observed that the EMI shielding value shows a corresponding increase with MWCNT loadings. The most favorable value obtained for EMI shielding effectiveness was ~32 dB and it was with 3 wt% MWCNT of film thickness 2 mm in range of frequency 2–4 GHz. The PTT/PE/MWCNT system was not considered for EMI applications anywhere else. The theoretical support of the experimental data was examined for DC conductivity employing different models such as Voet, Bueche, and Scarisbrick and the actual contribution of reflection, absorption, transmission loss to the total EMI shielding was done with Power balance. The present work is a facile and cost-effective method to fabricate lightweight and materials with high EMI shielding properties for mobile phones.

KEYWORDS
blend nanocomposite, DC conductivity, dielectric studies, EMI shielding, morphology

1 | INTRODUCTION

Electromagnetic interference (EMI) shielding materials have enormous importance in this electronic era. The research in this area is vital considering the difficulties due to the electromagnetic waves from the devices to human beings and other electronic equipment. Electromagnetic waves harmfully affect the functioning of the mother device as well as the surrounding electronic instruments. The metal-based EMI shielding materials were the primary target of the researchers. The metal-based EMI shielding materials suffer the severe disadvantage of high cost, undergoes corrosion, heaviness and difficulty in processing. Polymer-based shielding materials were and still are preferred to metals because of the possibility of reduction in weight and enhanced flexibility.

Efficacy of a Closed Water Depuration System with Charcoal filter on the Bacteriological quality of *Villorita cyprinoides* var. *cochinensis* (Hanley, 1866)

Ally C. Antony[1] Reshma Silvester[3] P. A. Aneesa[2] Bini Francis[2], Mohamed Hatha Abdulla[2]*

[1] *MES College, Marampally, Aluva, Ernakulam - 683 107, India*

[2] *School of Marine Sciences, Cochin University of Science and Technology, Lakeside Campus, Cochin - 682 016, India*

[3] *School of Industrial Fisheries, Cochin University of Science and Technology, Lakeside Campus, Cochin - 682 016, India*

Abstract

Bivalves are good bio-indicators of the sanitary quality of the aquatic bodies in which they survive. The sanitary quality of the shellfish harvesting areas is assessed based on the faecal coliforms/*E. coli* levels of the harvesting water/shellfish tissue; on exceeding the regulatory limits depuration suggested. In the present study, the efficacy of a closed water depuration system attached with a charcoal filter to depurate Indian black clams (*Villorita cyprinoides* var. *cochinensis* (Hanley, 1866) was evaluated. The depuration system consisted of a closed water holding glass tank, with a wall-hung immersion water pump which re-circulated (18 l min^{-1}) the seawater [salinity – 10 ppt, pH -7.3, ambient temperature (29-30°C)] through a coconut shell based activated carbon (charcoal) filter. Clams were sampled at time intervals of 0, 6, 12, 24, 72, and 96 h to assess the reduction of total coliforms (TC), faecal coliforms (FC) and faecal streptococci (FS). Initial TC, FC, FS and *Salmonella* loads were assessed using standard microbiological methods. *Salmonella* was not detected in any of the clam samples. Complete removal of both FC and FS whose initial loads were 4.6 x 104 MPN 100 g^{-1} and 1.1 × 105 MPN 100 g^{-1} respectively was observed within 48 h. Maximum rate of depuration of TC, FC as well as FS were observed during the initial first 6 h. However, TC could not be fully depurated even after 96 h of depuration. The differences in the depuration rates significant ($p<0.05$). The FC load of the black clams selected for the study conformed only to the class C shellfish growing area of EU which could be reduced to acceptable regulatory limits of <230MPN 100 g^{-1} of depurated shellfish; which proved the system used is efficient. The system uses simple, cost-effective, easily available, natural, and renewable water treating agent such as coconut shell-based activated carbon and is suitable for household purposes. In India, black clams do not have much export value and is also not preferred to be eaten raw. Hence less stringent, cost-effective, and simple depuration measures as mentioned above may be sufficient enough to meet the required sanitary quality as it is consumed only after proper cooking.

Keywords: Shellfish; *Villorita cyprinoides*; Depuration; Faecal coliforms; Activated carbon; Cochin estuary

Introduction

Shellfish associated disease outbreaks have been reported worldwide and food safety is the major concern associated with bivalve consumption (Costa, 2013; Odeyemi, 2016). It is one of the delicacies preferred to be eaten raw by people in many parts of the world. Most of the shellfish growing areas are situated in shallow, nutrient rich, near-shore waters which often receive sewage discharges and being filter feeders bivalves accumulate all sorts of contaminants including pathogens in the surround-

Survival Kinetics of *Vibrio* Species in a Tropical Estuary along the Southwest coast of India - as a function of selected Environmental Factors

Reshma Silvester[1*], Ally C. Antony[1#], Jesmi Yousuf[2], Ajin Madhavan[1], P.M. Sooria[1$], Aswin Kokkat[3], M. Harikrishnan[1], Mohamed Hatha[1]

[1] *Cochin University of Science and Technology, Cochin - 682 016, India*

[2] *Mahatma Gandhi University, P.O. Priyadarsini Hills, Kottayam - 686 560, India*

[3] *CSIR - National Geophysical Research Institute, Uppal, Hyderabad - 500 007, India*

Abstract

Vibrio species, autochthonous to aquatic environments worldwide, comprises of various species causing serious infections in humans and aquatic animals. Studying the survival ability of pathogenic *Vibrio* spp. in the aquatic environments is significant to identify the risk posed by them to aquatic animals as well as the recreational users of the system. However, in spite of their public health significance, the removal kinetics of this organism are not studied in detail from Cochin estuary, a highly productive estuarine system along the south-west coast of India. Here we aim to study the survival kinetics of deleterious effect on the survival of these organisms. Thus, our overall findings reveal that the estuarine system has a self-purifying capacity to control the pathogens such as *Vibrio*. However, entry of high load of pathogens into the system through pollution and anthropogenic activities may disrupt this balance.

Keywords: Survival ability; *Vibrio*; Environmental factors; Sunlight; Sediment; Cochin estuary

Introduction

Vibrios are Gram-negative halophilic bacteria that inhabits estuaries, marine environments and aquac-

A Wavelet-based hybrid multi-step Wind Speed Forecasting model using LSTM and SVR

Jaseena K U and Binsu C Kovoor View all authors and affiliations

Volume 45, Issue 5 | https://doi.org/10.1177/0309524X20964762

Abstract

Wind energy, one of the greatest progressing renewable energy sources, becomes more significant for sustainable development and environmental protection. Its intermittent nature makes accurate and reliable predictions very challenging. Currently, hybrid models are extensively employed for wind speed forecasting and have been established to perform superior to traditional single forecast models. Hence, in this paper, a hybrid multi-step wind speed forecasting framework that combines the features of Wavelet Transform (WT), Long Short Term Memory (LSTM), and Support Vector Regression (SVR) is proposed. The prediction accuracy of the model is enhanced by denoising the dataset using wavelet transforms, which decomposes the data into low and high-frequency sub-series. The low-frequency sub-series is forecasted using LSTM network, and the high-frequency sub-series using SVR. Each forecasting outcomes are summed up to get the final forecasting results. The simulation results reveal that the forecast accuracy has significantly improved for

A HYBRID OUTLIER DETECTION APPROACH WITH MULTI DIMENSIONAL FEATURES TO PREVENT BLACK HOLE ATTACK IN MANET

INFORMATION TECHNOLOGY IN INDUSTRY

Mar 5, 2021

Ibrahim Salim M., Dr. T. Abdul Razak, Dr. Murugan R.

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Abstract

An increase in the technological upgrades in the mobile communication technology has led to the tremendous increase in the usage of mobile networks. Mobile Adhoc Network is an instantaneous network where the requirement of the infrastructure is not mandatory. This feature has raised a lot of issues in the security aspects of the MANET. The mobility

Topics from this Paper

Black Hole Attack

Black Hole Attack In MANET

Shrimp lectin–conjugated copper sulfide nanoparticles enhance immune response and gene expression in *Etroplus suratensis* infected with *Aeromonas hydrophila*

Published: 19 March 2021

Volume 29, pages 1103–1120, (2021) Cite this article

Preetham Elumalai ✉, Abdul Salam Rubeena, Sreeja Lakshmi, Veerappan Anbazhagan, Jesu Arockiaraj, Mani Divya, Sekar Vijayakumar & Baskaralingam Vaseeharan

Faecal contamination and prevalence of pathogenic *E. coli* in shellfish growing areas along south-west coast of India

Ally C. Antony [b a] ✉, Reshma Silvester [c], Divya P.S. [a], Aneesa P.A. [a], Bini Francis [a], Ajith Joseph C. [a], Midhun Shah Hussain [a], Umesh B.T. [b], Joy George [d], Mohamed Hatha Abdulla [a] ✉

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Abstract

Seasonal prevalence of faecal coliforms in Indian black clam (*Villorita cyprinoides*), sediment and harvesting waters from shellfish harvesting areas along Cochin

Protein Expression and Purification
Volume 182, June 2021, 105834

Characterisation and comparative analysis of hydrophobin isolated from *Pleurotus floridanus* (PfH)

C.M. Rafeeq, A.B. Vaishnav, P.P. Manzur Ali

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Abstract

Hydrophobins are a class of small cysteine rich surface active proteins produced

Ceramics International
Volume 47, Issue 9, 1 May 2021, Pages 12375-12380

Mycosynthesis of zinc oxide nanoparticles using *Pleurotus floridanus* and optimization of process parameters

C.M. Rafeeq, Elizabeth Paul, E. Vidya Saagar, P.P. Manzur Ali

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https://doi.org/10.1016/j.ceramint.2021.01.091 Get rights and content

Abstract

Zinc nanoparticles are ideal candidates for biomedical applications due to their exceptional properties and biocompatible nature. The conventional methods are

Decomposition-based hybrid wind speed forecasting model using deep bidirectional LSTM networks

K.U. Jaseena [a b 1], Binsu C. Kovoor [a 2]

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Abstract

The goal of sustainable development can be attained by the efficient management of renewable energy resources. Wind energy is attracting attention worldwide due to its renewable and sustainable nature. Accurate wind speed prediction is essential for the stable functioning of wind turbines to generate wind power. However, the flexible and intermittent nature of wind speed makes accurate wind speed forecasting a challenging task. The

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Performance Analysis of Convolutional Network System for Heart Disease Prediction

Julie M. David[1*], Sarika S.[2]

[1,2]Department of Computer Applications MES College Marampally, India

*Corresponding Author: julieeldhosem@yahoo.com, Tel.: +91 9447104152

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Abstract - Heart is one of the major parts of human body, which maintains life line. It pumps the blood and supplies to all parts of the body. Heart disease prediction is significant work. Here we propose a Heart disease prediction model and is a hybrid intelligent system developed using classifier such as deep learning, feature extraction tools, and normalization methods. This intelligent system shows the high accuracy than the other datamining classifier. In this paper, the proposed model will help the medical field to reduces the cost and work load, and also ensures the accuracy of result. This System is very efficient and effective.

Keywords - Heart disease, Deep learning, Classification

I. INTRODUCTION

Data mining is used for finding patterns and regularities from a huge data by using the techniques such as data analysis and software techniques. Nowadays, data mining and by their experience but these leads to a number of difficulties such as less accurate results, less experience, time dependent performance etc listed in following figure [10]. To improve the prediction accuracy and to reduce the prediction time, neural networks are used. Neural networks

Composites Part B: Engineering
Volume 194, 1 August 2020, 108045

Organic modifier induced interfacial transformation, morphology and physico-mechanical properties of PP/NR based blend nanocomposites

N. Chandran [a], C. Sarathchandran [b], S. Jose [c], S. Thankappan [a], S. Thomas [a d]

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Abstract

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SECRECY ENHANCEMENT IN COOPERATIVE NETWORKS VIA RELAY SELECTION AND POWER ALLOCATION

P.M. Shemi[1] and M.A. Ali[2]

[1]*Department of Electronics, MES College Marampally, India*

[2]*Department of Computer Applications, Government Engineering College, Thrissur, India*

Abstract

A performance comparison of relay selection based on the path probability selection of Ant Colony Optimization algorithm (ACO), among dual-hop amplify-and-forward and decode-and-forward relay networks is formulated in this paper. An adaptive power allocation strategy based on Brent's method has been proposed. The secrecy performance is evaluated in traditional, fading and path loss wireless models. Traditional best relay selection, exhaustive search optimization algorithm and equal power allocation strategy have been derived as schemes for comparison. The effect of number of relays on secrecy is also evaluated. Simulation results reveal the merits of the proposed relay selection and optimization schemes as compared to conventional schemes.

Keywords:

Brent's Method, Optimal Power Allocation, Ant Colony Optimization, Secrecy Rate

1. INTRODUCTION

Physical layer security (PLS) based on cooperative and AF relays in dual-hop cooperative relay system is derived. ACO based RS that employs equal power allocation (EPA) strategy for AF cooperative network is investigated in [8] and that for DF network is studied in [9].

Unlike the traditional RS schemes, where selection of relay is possible only in a specific wireless model, it could be done in three wireless scenarios in the ACO based RS schemes [8, 9]. Here, the coefficients of fading (h) and gain of the channel (G) defining a wireless channel are considered separately so as to apply the RS algorithm. The paper considers a practical scenario, where direct links exist between source and destination and between source and eavesdropper, with relays randomly distributed between the transmitting and receiving nodes. By considering the behavior of G and h together or by taking G or h alone, the secrecy performance is analyzed in the following cases: (i) in a traditional model characterized by both G and h (ii) in a fading model defined by only h and (iii) in a path loss model defined by only G. A performance comparison among AF and DF cooperative relays is then formulated in this work. Secrecy performance can be enhanced if proper power allocation is done

Truncated circular microstrip ultra wideband antenna exhibiting wideband circular polarization

KU Sam, P Abdulla

Progress In Electromagnetics Research C, 2020 · jpier.org

Abstract

Circular polarization is manifested by means of truncations on basic circular radiating patch with precisely designed asymmetric feed. The proposed truncated circular microstrip antenna (TCMA) yields impedance bandwidth (IBW) of 7.6 GHz, almost covering the FCC approved ultra wideband (UWB) frequency and 3-dB axial ratio bandwidth (ARBW) of 5.05 GHz spreading over two bands, enabling the antenna to be used for multiple applications in ultra wideband frequency range. A peak gain of 5.73 dBi is documented at 5 GHz which is within the circular polarization (CP) band. This single feed antenna is very simple to design and compact in size.

IET Microwaves, Antennas & Propagation

Research Article

Dual split resonator lowpass filter with ultra-wide stopband and sharp roll-off rate

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Thevaruparambil Abdulnazer Nisamol[1] ✉, *Parambil Abdulla*[1], *Paruthikkal M. Raphika*[2]

[1]*Division of Electronics, School of Engineering, Cochin University of Science and Technology, Cochin 682022, India*

[2]*Department of Electronics, MES College Marampally, Kerala, India*

✉ *E-mail: nisamolshiyas2018@cusat.ac.in*

Abstract: A novel microstrip lowpass filter design using rectangular split-ring resonators with dual splits are designed, analysed, and fabricated with exceptional performance such as ultra-wide stopband and sharp roll-off rate along with its compactness. The symmetrical suppressing cells are also employed to reject higher-order harmonics from the stopband without affecting selectivity. The expression for transmission zero of dual split resonator-1 is extracted from the equivalent circuit analysis and observed the significance of coupling. A sharp roll-off performance of 224 dB/GHz and relative stopband width of 161% are achieved with a cut-off frequency of 2.9 GHz.

1 Introduction

Modern research studies are now searching for novel approaches in the field of filters, as these are the important component for all the circuits which are (narrow or a wide band) frequency-dependent. Split ring resonator (SRR) structures are commonly created with past years [13, 14], however, those structures suffer from the lack of selectivity. The highly selective filter structure using stepped impedance resonator [15] also shows rejection of a lesser number of harmonics even the defective ground structure is utilised. Using number of resonators cascaded along with interdigital technology

Shrimp lectin (Md-*Lec*) conjugated copper sulfide nanoparticles enhance the elimination of aquatic pathogens in infected Nile tilapia (*Oreochromis niloticus*)†

Abdul Salam Rubeena,[a] Sreeja Lakshmi,[a] Digi George,[a] Siva Bala Subramaniyan,[b] Anbazhagan Veerappan *[b] and Elumalai Preetham *[ac]

Author affiliations

Abstract

Lectins are known for their ability to bind to cell surface glycans, and are useful to develop a glycan-targeted drug delivery system. This study aimed to evaluate the capacity of pectin capped copper sulfide nanoparticles (pCuS NPs) to modulate the antibacterial activity of a lectin, Md-*Lec*, purified from the shrimp, *Metapenaeus dobsoni*. Fluorescence spectroscopy revealed that Md-*Lec* has the ability to form a complex with pCuS NPs. Haemagglutination assay showed that the carbohydrate binding site of the lectin was preserved even after complexing with pCuS. The minimum inhibitory concentrations (MICs) obtained for Md-*Lec*

Axial Ratio Bandwidth Enhancement of Asymmetrically Fed Microstrip Antenna

Kollannore U. Sam* and Parambil Abdulla

Abstract—Wide axial ratio bandwidth is imparted by placing rigorously designed radial slits on an asymmetrically fed circular radiating patch antenna with parallel bilateral truncations. A partial ground plane with beveling on both the upper corners and a double stepped notch embedded on it makes the antenna suitable for ultra-wideband and X-band applications. The antenna exhibits a −10 dB impedance bandwidth of 8.6 GHz from 3.4 GHz to 12 GHz (111.6%) and a 3 dB axial ratio bandwidth of 8.7 GHz from 3.3 GHz to 12 GHz (113.7%) thereby contributing an effective operating bandwidth of 8.6 GHz (111.6%). The prototype manifests an exceptional far-field radiation pattern and fair gain throughout the passband.

1. INTRODUCTION

Reliable wireless communication seldom depends on circularly polarized antennas. As they are insensitive to antenna orientations and have the capability to avoid multipath fading, circularly polarized antennas have been extensively used over linearly polarized antennas [1]. Even after around two decades of the official declaration of 3.1 GHz–10.6 GHz frequency range for ultra-wideband (UWB) by Federal Communication Commission, the increasing demand of the said band attracts the researchers to extend their work on UWB antennas. The X-band is widely used for satellite and terrestrial communication. Antennas exhibiting circular polarization (CP) in those bands is a real breakthrough in implementing novel technologies in wireless communication. The portability of these wireless communication gadgets greatly depends on the antenna profile. Microstrip patch antennas making use of thin planar substrates can be used in transmitter and receiver modules for miniaturization. Individual antennas providing wideband CP avoids the task of fabricating multiple antennas for each specific applications. Single

Circularly Polarized Single-Feed Hemispherical Dielectric Resonator Antenna for Wi-MAX Applications

By Arunodayam Anu, Parambil Abdulla, Puthenveetil Muhammed Jasmine, Thulaseedharan Rekha

Progress In Electromagnetics Research M, Vol. 92, 21-30, 2020

doi:10.2528/PIERM20022401

Abstract

Concentric circular slots coupled hemispherical dielectric resonator antenna fed by a modified microstrip line for circular polarization is investigated. By adjusting the position of the hemispherical dielectric resonator antenna and the slot properly, the resonance of the slot and the antenna is merged to obtain wider axial ratio bandwidth. Parametric studies have been done on the effect of changing the DRA position on impedance band and axial ratio band. The circular polarization achieved by the antenna offers a very good 10 dB impedance bandwidth of 27.379% and a 3 dB axial ratio bandwidth of 640 MHz. The maximum gain in the operational band is 7.3 dBi. The antenna is suitable for Wi-Max applications.

Dual split resonator lowpass filter with ultra-wide stopband and sharp roll-off rate

Author(s): Thevaruparambil Abdulnazer Nisamol [1] ; Parambil Abdulla [1] ; Paruthikkal M. Raphika [2]

View affiliations

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« Previous Article | Table of contents | Next Article »

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Article | References (28) | Cited By (0) | Supplementary material (0) | Keywords | Related Content

A novel microstrip lowpass filter design using rectangular split-ring resonators with dual splits are designed, analysed, and fabricated with exceptional performance such as ultra-wide stopband and sharp roll-off rate along with its compactness. The symmetrical suppressing cells are also employed to reject higher-order harmonics from the stopband without affecting selectivity.

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DIP: 18.01.296/20200802, DOI: 10.25215/0802.296
http://www.ijip.in

The International Journal of INDIAN PSYCHOLOGY

Research Paper

Dark triad personality and media dependency among children of single parent and both parents

Meenakshi S[1]*, Dr. Susan Varghese[2]

ABSTRACT

Family is the core of one's personality. The foundation of what the person becomes in the society is laid in the home in the initial stages. In today's fast moving society, we could identify divergent groups of family. One among them is single parent family. Also, the popularity of social media is rising day by day. It comes with many positive and negative effects. The positive effects include leisure, seek pleasure, and maintain relationships etc and negative effects can be clubbed as over dependence on these media that would affect one's daily routine. Thus, the present investigation aims to study media dependency and dark triad among 100 college students from single parent family and both parent family respectively. Short Dark Triad Scale for personality and the Social Networking Status Scale –Student Form (SMAS – SF) for media dependency were used. It was found that dark triad personality traits and media dependency were positively correlated among both the study groups. Also children from single parent family were found to be more psychopaths. Male children were found to be more psychopathic and media dependent than female children. Males from single

Fishery Technology 57 (2020) : 1 - 10

Prevalence of Plasmid-mediated Quinolone Resistance (PMQR) Genes and Beta-lactamase Genes among *Salmonella, Vibrio parahaemolyticus* and *Escherichia coli* from Shellfish

Sukumaran P. Divya[1], Athira Chandradasan[2], P. K. Pranav[3], Ally, C. Antony[4], and A. A. Mohamed Hatha[1]*

[1]*School of Marine Sciences, Cochin University of Science and Technology, Lakeside campus, Cochin - 682 016, India*
[2]*Indian Institute of Science Education and Research, Mohanpur, Nadia - 741 246, Kolkata, India*
[3]*Bharathidasan University, Tiruchirappalli - 620 024, India*
[4]*Department of Biosciences, MES College, Marampally - 683 107, India*

Abstract

The objectives of the present study were to investigate the prevalence of plasmid-mediated quinolone-resistance (PMQR) genes and beta-lactamase genes in *Salmonella, Vibrio parahaemolyticus,* and *Escherichia coli* from shellfish. A total of 35 *Salmonella,* 22 *Vibrio parahaemolyticus,* and 58 *Escherichia coli* of shellfish origin were used in this study. Antibiotic susceptibility testing of *Salmonella, V. parahaemolyticus,* and *E. coli* against different antibiotics was determined by disc diffusion method. The minimum inhibitory concentration (MIC) of nalidixic acid and ciprofloxacin were analyzed by microdilution method for all nalidixic acid/ciprofloxacin-resistant strains. All the isolates were most prevalent PMQR and beta-lactamase genes were *qnrS* and bla_{TEM}, respectively. The co-occurrence of PMQR and beta-lactamase genes in *V. parahaemolyticus* and *Salmonella,* from shellfish, poses a public health concern.

Keywords: *Salmonella; Vibrio; Escherichia coli;* shellfish

Introduction

Salmonella, Vibrio parahaemolyticus and *Escherichia coli* are the most important causes of food-borne infections (WHO, 2017). *Salmonella* spp. are found in the intestinal tract of various warm and even cold-blooded animals and humans (Sterzenbach et al., 2013). *Vibrio parahaemolyticus* is a native of marine

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ISSN : 0975-7945

VERTICAL HOUSING IN KERALA

Dr.Rafeeka Mol C A, Assistant Professor, MES College Marampally, Aluva

Abstract

Vertical Housing introduces a new concept to urban living that adapts to the evolving lifestyle of 21st Century contemporary India. Considering the increasing demand for land in the city, the transformation of single family dwelling typologies becomes a must, where tenants should be able to enjoy privacy as well as benefit from vertical solution amenities and prime location. Housing is, probably, one of the key issues that normally forefront the scene when considering challenges of urbanization and urban growth. This is not only because of being a basic human need, or because of having strong links with other life aspects, but also due to the complexity and multifaceted nature of this subject which makes it the centre of attention of a multiplicity of actors and disciplines. Despite this, several pieces of evidence have manifested significant failures in dealing with the challenge of housing particularly in the case of developing countries Real estate development corporations are concerned about housing quality and customer satisfaction. Customer satisfaction studies can help companies determine the key factors which influence user satisfaction. These studies' results can be used enhance the quality of housing and its environment, promote the housing market, improve the quality of life and promote suggestions to policy makers. Residential satisfaction after house purchase is an important managerial and theoretical issue for scholars in marketing and economic psychology (Muter et al. 2014). and it is equally surprising that there are hardly few investigations involving a house purchase in apartment sector in Indian context (Tan,2014), This study gives an insights into the residential satisfaction in vertical housing sector.

Keywords :Vertical Housing, Housing apartments, Residential satisfaction.

1. Introduction &Background

Shelter is considered as one of the important thing for well and happy living. In India housing is not only a shelter but also an asset of self satisfaction and superiority in the society. In last two decades factors like growing economy, high salary, and easy bank loans and social pressure encourage housing. These factors also had given a considerable boost to the housing sector. This boosts not only increasing the housing sector but also persuade the home buyers' priority towards home.Housing industry has progressed from its early inception from a basic shelter towards providing a portrayal of personal success and which include the aspects of safety, love, peace and freedom (Marcussen,2000). NHB (2013) of India emphasis that housing should provide residents with safety security, comfort, health, privacy and other services.

Housing being one of the three basic needs of life always remains in the top priorities of any person, society and economy. As a human being, an individual needs has own space and privacy, which can be provided by ownership of house. Thus housing deserves significant attention in the context of developing policies and strategies for human development. Kerala one of the smaller state has to accommodate about 2542 persons in a square kilometer in urban area. Migration from rural as well as from other states add fuel to this problem. Unavailability of land, Sky rocketing of existing land price, increasing construction, material and labour cost makes the urban housing scenario more worse. Now the urban kerala is experiencing a rapid shift from housing units to apartments.(M. Aslam, Rafeekamol, (2017)

The residential demand is the core of the Indian real estate sector, the major demands drives for the residential market includes increasing disposable income levels, increases in the number of nuclear families /households, tax savings on home mortgaged properties as well as real estate being considered as a necessity investment. In Kerala people are considering land as an asset for life time. The numbers of genuine buyers are more in the state compared to other states n India. Kerala people are having a peculiar housing culture. They are very fond of constructing or buying houses immediately after marriage since they prefer nuclear family systems. Hence the demand for houses are more in Kerala rather than any other states in India.

AIP Publishing Journal of Renewable and Sustainable Energy

RESEARCH ARTICLE | APRIL 22 2020

A hybrid wind speed forecasting model using stacked autoencoder and LSTM

K. U. Jaseena; Binsu C. Kovoor

J. Renewable Sustainable Energy 12, 023302 (2020)

https://doi.org/10.1063/1.5139689 Article history

Fossil fuels cause environmental and ecosystem problems. Hence, fossil fuels are replaced by nonpolluting, renewable, and clean energy sources such as wind energy. The stochastic and intermittent nature of wind speed makes it challenging to obtain accurate predictions. Long short term memory (LSTM) networks are proved to be reliable models for time series forecasting. Hence, an improved deep learning-based hybrid framework to forecast wind speed is proposed in this paper. The new framework employs a stacked autoencoder (SAE) and a stacked LSTM network. The stacked autoencoder extracts more profound and abstract features from the original wind speed dataset. Empirical tests are conducted to identify an optimal stacked LSTM network. The extracted features from the SAE are then transferred to the optimal stacked LSTM network for predicting wind speed. The efficiency of the proposed hybrid model is compared with machine learning models such

A new class of non-canonical conformal attractors for multi-field inflation

Tony Pinhero[1] and Supratik Pal[1]

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Journal of Cosmology and Astroparticle Physics, Volume 2020, March 2020

Citation Tony Pinhero and Supratik Pal JCAP03(2020)022

DOI 10.1088/1475-7516/2020/03/022

Article PDF

+ Article and author information

Abstract

We propose a new broad class of multi-field non-canonical inflationary models as an extension of multi-field conformal cosmological attractors. This also generalizes the recently discovered class of non-canonical conformal attractors for single field inflation. Kinetic terms of this class of models are

International Journal of Recent Technology and Engineering (IJRTE)
ISSN: 2277-3878 (Online), Volume-8 Issue-6, March 2020

A Semi-Fragile Watermarking Scheme for Integrity Checking of Relational Databases

Murugan R., John T. Abraham, Ibrahim Salim

Abstract: Extensive use of the Internet coupled with tremendous growth in database applications have created a huge demand for database security. The concepts of e-governance, e-commerce, e-business, e-learning, and digital libraries are already in place and evolving across poles. This raises various concomitant threats such as illegal copying, illegal redistribution, tampering, forgery and authentication of copyrighted digital assets. Digital Watermarking is an effective technique which can be introduced for solving the above mentioned threats. Based on the detection of the Watermark, the ownership and the integrity of the data can be asserted. Database Watermarking techniques are generally classified into two: i.e., Robust or Fragile. Robust watermarking techniques are designed for copyright protection and fragile watermarking techniques are for authentication or integrity checking of data. Watermarking schemes for relational databases authentication are almost fragile in nature. These algorithms do not allow any legitimate modification of the data. In most of the cases, innocent distortions such as tuple and/or attribute sorting may be considered as tampering. In this paper, watermark combines the advantages of both robust and fragile watermarking techniques together.

Algorithms for semi-fragile watermarking technique for Relational Database authentication focus on the ability of the detection of tamper attacks carried out on the marked data. Because the semi-fragile watermark has a certain degree of fragility, the algorithm can envisage the data authentication according to whether the marked data is tampered with or not. When the protected data suffers some kind of attacks, the information used for watermarking purpose will make a corresponding change as well. However, for authorized or innocent attacks, the semi-fragile watermark has a certain degree of robustness, so that the authorized and the malicious tampering or operations can be distinguished.

In this paper, a semi-fragile watermarking method has proposed for authentication or verification of Relational Databases. The proposed scheme has the following features:

- Robustness:

Deterministic weather forecasting models based on intelligent predictors: A survey

K.U. Jaseena, Binsu C. Kovoor

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https://doi.org/10.1016/j.jksuci.2020.09.009

Abstract

Weather forecasting is the practice of predicting the state of the atmosphere for a given location based on different weather parameters. Weather forecasts are made by gathering data about the current state of the atmosphere. Accurate weather forecasting has proven to be a challenging task for meteorologists and researchers. Weather information is essential in

Characterization of bioactive compound produced by microfouling actinobacteria (*Micrococcus Luteus*) isolated from the ship hull in Arabian Sea, Cochin. Kerala

P. Nisha [a], Nayomi John [b c d], C. Mamatha [b c d], Manuel Thomas [b c d]

Show more

https://doi.org/10.1016/j.matpr.2020.01.362

Abstract

Ocean is the source of precious natural resources of the Earth.Marine system provides us with many novel products that having antimicrobial properties.

2019

Antimicrobial properties and phenoloxidase activation of the lectin isolated from kadal shrimp (Metapenaeus dobsoni)

Abdul Salam Rubeena [1], Elumalai Preetham [2]

Affiliations + expand

PMID: 31054358 DOI: 10.1016/j.fsi.2019.04.305

Abstract

The present study reveals purification and characterization of the lectin from the haemolymph of Metapenaeus dobsoni. The Md-Lec was purified by affinity chromatography with mannose coupled sepharose CL-4B column and it exhibits single band with a molecular weight of 68 kDa in SDS-PAGE. Furthermore, the molecular mass was confirmed by MALDI-TOF and functional groups present were analysed by FTIR. The surface morphology of purified Md-Lec displays the homogeneous nature of protein. The X-ray diffraction (XRD) analysis expresses three peaks at 10.7716°, 21.6258° and 31.7523°which indicate the crystalline nature of the protein and the retention time of 3.068 min evident

Anti-biofilm properties and immunological response of an immune molecule lectin isolated from shrimp *Metapenaeus monoceros*

Elumalai Preetham [a b], Abdul Salam Rubeena [b], Baskaralingam Vaseeharan [c], Mukesh Kumar Chaurasia [a], Jesu Arockiaraj [d], Rolf Erik Olsen [e]

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https://doi.org/10.1016/j.fsi.2019.09.032 Get rights and content

Abstract

The study is carried out to understand the antimicrobial and immunological response of a potential immune molecule lectin, *Mm*Lec isolated from

International Journal of Recent Technology and Engineering (IJRTE)
ISSN: 2277-3878, Volume-8 Issue-3, September 2019

Feature Selection With Centre of Gravity Method using Ant Colony Optimization

Leena C Sekhar, R Vijayakumar, M K Sabu

Abstract: The high dimensional dataset with irrelevant, redundant and noisy features has much influence on the performance of machine learning problems. In this work, an existing Ant Colony Optimization (ACO) based feature selection algorithm is modified by attaching a dimensionality reduction method as a data pre-processing step. This is achieved by introducing the concept of Centre of Gravity (CoG) of a set of points. After reducing the dimension, the ACO algorithm is used to generate the optimal subset of features. The performance of the proposed algorithm is evaluated using Artificial Neural Network (ANN) classifier. The performance comparison using various dataset shows that the proposed method outperforms the existing ACO based feature selection methods.

Keywords: Ant Colony Optimization, Centre of Gravity, dimensionality reduction, feature selection

I. INTRODUCTION

The process of selecting relevant feature subset from a dataset for building strong learning models is known as the feature selection (FS) technique. In data pre-processing, FS is used as a method for reducing the dimension of the dataset. The high dimension of the dataset greatly affects the dataset, ACO algorithm is used and artificial neural network (ANN) classifier is used to measure the significance of selected features. To compare the efficiency of the proposed method, from the original dataset features are selected using the same ACO algorithm. The selected features are then evaluated with the help of ANN classifier used in the proposed method. The experimental result show that the dataset modification has a significant effect in selecting the features efficiently. The experiment is performed on six different datasets from UCI machine learning repository. The remaining sections of the paper is organized as follows. In section 2, a review of the feature selection procedure is given. Section 3 briefly overview the dimensionality reduction based on CoG. Feature Selection using Ant Colony Optimization is outlined in section 4. Section 5 illustrates the proposed work. Experimental results and Analysis is given in section 6. Discussion is given in section 7 followed by a conclusion.

II. REVIEW OF LITERATURE

Feature selection problem is closely related to 'the curse of dimensionality'. Before performing any datamining task,

Compact microstrip lowpass filter with high harmonics suppression using defected structures

Thulaseedharan K. Rekha [a], Parambil Abdulla [a], Puthenveetil M. Jasmine [b], Arunodayam R. Anu [a]

Show more

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https://doi.org/10.1016/j.aeue.2019.153032 Get rights and content

Abstract

A compact microstrip lowpass filter with sharp selectivity and wide stopband designed on the basis of dual-plane, is presented. Initially, a basic one pole defected ground structure (DGS) filter is modified so as to achieve sharp selectivity as well as compact size. The modified DGS reduces the circuit size of the filter by 68.8%. To suppress the higher order harmonics, mirrored symmetrical uniform

[PDF] A robust watermarking technique for copyright protection for relational databases

R Murugan, JT Abraham, I Salim

IJRTE, 2019 · academia.edu

Abstract

Internet based digitization has been of rapid increase in the usage of database applications at an enormous rate in recent times. It is very difficult to secure the ownership of digital assets because all the data on the internet are available everywhere almost free of cost and anybody can access such data and claim their ownership. In current digital scenario not only images, videos, and audio are in digital form. Databases are also digitized in different models and used as a service in database applications, including areas such as finance, multimedia, personnel, etc. A huge amount of confidential and sensitive data which are available publically facing a variety of threats like illegal copying, illegal redistribution, tampering, forgery and authentication. Authenticity, integrity, confidentiality and copyright protection are most important security issues to be addressed with most importance. Copyright management is a serious issue in database applications because it is much easier for others to download and manipulate copyrighted databases from the Internet and later re-use without any control. In this paper we proposed a robust watermarking scheme for copyright protection for relational databases, which protects the copy right information of the database even if the attacker tampers the data by changing the attribute values or reordering the tuples of the database. The proposed watermarking technique is robust since the watermark will not be lost even though the attacker tampers the data. The experiments show that the new method is efficient as well as effective for maintaining copy right information there by ensuring right protection to relational databases.

A Varactor-Tuned Aperture Coupled Dual Band Cylindrical Dielectric Resonator Antenna for C-Band Application

Arunodayam R. Anu[1, *], Parambil Abdulla[1],
Puthenveetil M. Jasmine[2], and Thulaseedharan K. Rekha[1]

Abstract—A novel technique for designing a dual-band reconfigurable aperture coupled cylindrical dielectric resonator antenna is introduced here. The design is based on loading an aperture coupled cylindrical dielectric resonator antenna with a varactor diode located along the lines of the feed network. Loading the antenna with the varactor shifts the first and second resonant frequencies of the antenna. The resonant frequency can be continuously shifted from 4.75 GHz to 4.96 GHz in the lower band, and the resonant frequency of the higher band is shifted from 6.31 GHz to 6.40 GHz as the varactor diode bias voltage is increased from 1 V to 5 V. The proposed antenna offers a stable broadside radiation pattern at both bands and across the entire tunable frequency range for different bias voltages. The parametric analysis on the slot position is done to control the first and second resonant frequencies of the dual-band antenna. The proposed antenna plays a vital role in C-band (4 GHz–8 GHz) applications.

1. INTRODUCTION

In the latest communication technologies, high-performance antenna is regarded as one of the important devices to be used. In 1983, DRA started its expedition as a substitute to patch antennas. Though DRAs and microstrip patch antennas have their own merit and potential, DRAs appear to be a possible replacement for the microstrip patch antenna, especially at millimeter-wave frequencies. A number of DRAs have been used because of their advantages such as small size, high radiation efficiency, ease of excitation, and low-temperature coefficient. There are many reconfigurable microstrip patch antennas [1–8], but only a few reconfigurable DRAs have been reported in the literature. So more attention has been paid to frequency adjustable DRAs such as using multiple parasitic strips [9], shifting the spiral position along the DRA surface [10], and loading cap [11]. Frequency tunable designs using a parasitic slot have been studied theoretically and experimentally [12], but they are used for the design

International Journal of
COMMUNICATION systems

RESEARCH ARTICLE

Nelder-Mead–based power optimization for secrecy enhancement in amplify-and-forward cooperative relay networks

P.M. Shemi ✉, M.G. Jibukumar, M.A. Ali

First published: 02 May 2019 | https://doi.org/10.1002/dac.3965 | Citations: 2

Summary

Cooperative communication based on relaying nodes has been considered as a promising technique to increase the physical layer security (PLS) performance in wireless communications. In this paper, an optimal power allocation (OPA) scheme based on

The Role of Lectins in Finfish: A Review

Preetham Elumalai, Abdul Salam Rubeena, Jesu Arockiaraj, Ratree Wongpanya, Matteo Cammarata, E

...show all

Pages 152-169 | Published online: 14 Jan 2019

Cite this article https://doi.org/10.1080/23308249.2018.1520191 Check for updates

Abstract

The immune system of vertebrates involves both innate and acquired immune responses. The innate immunity is more generalized with robust response whereas the other has a highly specific response to infectious pathogens. Because of the lack of specialized lymphatic organs, innate immunity is an important mode of defense in fishes. The less specific innate immune system acts mainly through complement pathway which depends on pattern-based recognition of "self" and "non-self" targets by host lectins and associated proteins. This ultimately results in the clearance of target cells. Lectins are glycoproteins which possess at least one carbohydrate recognition domain (CRD) that specifically and reversibly binds to a carbohydrate which is widely distributed in bacteria, fungi and

2018

International Journal of Applied Engineering Research ISSN 0973-4562 Volume 13, Number 3 (2018) Spl.

Feature selection using Ant Colony Optimization- A review on Heuristic Information Measurement

Leena C Sekhar
Research Scholar
School of Computer Sciences
M G University, Kottayam
Kerala

R Vijayakumar
Professor
School of Computer Sciences
M G University, Kottayam

M K Sabu
Associate Professor
Department of Computer Applications
CUSAT, Cochin

Abstract— **Performance of Machine learning problems are greatly affected by the high dimensionality of the data set. To reduce the dimension, feature selection is used. Feature selection simplifies and enhances the quality of a data set by selecting salient features and reduces the complexity of the overall**

As a result a number of outcomes can be expected such as speeding up mining algorithms, improving mining performance and comprehensibility [1].

Various strategies for feature selection method includes

RESEARCH ARTICLE

A novel relay selection algorithm using ant colony optimization with artificial noise for secrecy enhancement in cooperative networks

P.M. Shemi ✉, M.G. Jibukumar, M.K. Sabu

First published: 19 July 2018 | https://doi.org/10.1002/dac.3739 | Citations: 8

Summary

Cooperative communication is one of the fastest growing research areas of today. It can efficiently mitigate the effect of shadowing and fading with the help of relays and proper relay selection technique. In this paper, a novel relay selection scheme combined with artificial noise (AN) is devised to enhance the secrecy of cooperative networks with amplify-and-forward scheme, over Rayleigh fading channels in the presence of a passive eavesdropper. The probability of path selection of ant colony optimization algorithm is used for selecting the best relay with high end-to-end signal-to-noise ratio. The probability of choosing a path depends on the significance of channel gain (G) and fading coefficients (h). The proposed algorithm finds the best relay in the following wireless

Improved Frequency Response of Microstrip Lowpass Filter Using Defected Ground Structures

Thulaseedharan K. Rekha[1, *], Parambil Abdulla[1],
Puthenveetil M. Jasmine[2], and Paruthikkal M. Raphika[2]

Abstract—The frequency response characteristics of a basic microstrip lowpass filter improved using H-shaped defected ground structures are presented. The proposed defected ground structures behave as a resonant element at high frequency and thus eliminate the stopband frequencies to achieve wide stopband rejection. The 3 dB cutoff frequency of the filter is 1.935 GHz. Due to the defects etched in the ground plane of the basic structure, the harmonic rejection is improved from 5th to 10th order along with low insertion loss and voltage standing wave ratio together with good selectivity. The compact filter has a size of $0.0338\lambda_g^2$, with $\lambda_g = 85.18$ mm being the guided wavelength at the cutoff frequency. The characteristics of the lowpass filter are verified through simulation and measurement. Consistent and stable results are obtained.

1. INTRODUCTION

Lowpass filters are vital components in microwave and wireless communication devices. Compactness, unity voltage standing wave ratio, low insertion loss, high degree of harmonic rejection and good selectivity are the most desirable parameters in the design of lowpass filters. Conventional microstrip lowpass filter designs using stepped impedance resonators and uniform impedance stubs have only limited harmonic rejection in the stopband [1, 2]. To extend the stopband bandwidth, additional attenuation poles have to be added, which will increase the size of the filter [3]. In [4], wide stopband suppression level and improved impedance matching are achieved by the introduction of symmetrically loaded resonant patches, open stubs and a stair-shaped high impedance stub. A compact lowpass filter with sharp roll-off is achieved using a coupled line hairpin unit in [5]. Recently, defected ground structures (DGSs) realized by etching a few defects in the ground plane have been a subject of increasing interest in analyzing the microstrip line characteristics, and the size, shape and orientation of the slot

Functional Characterization of a New Cold-Adapted β-Galactosidase from an Arctic Fjord Sediment Bacteria *Enterobacter ludwigii* MCC 3423

Aneesa P. Alikunju[1] · Susan Joy[1] · Jaseetha Abdul Salam[1] · Reshma Silvester[1] · Ally C. Antony[2] · K. M. Mujeeb Rahiman[3] · K. P. Krishnan[4] · A. A. Mohamed Hatha[1]

Received: 5 May 2018 / Accepted: 24 July 2018 / Published online: 30 July 2018

Abstract

In the present study, a new cold-adapted β-galactosidase, BgalEL isolated from the fjord sediment bacteria, *Enterobacter ludwigii* MCC 3423, was purified and characterized. The phylogenetic analysis of partial sequence of *bgalEL* gene revealed 99% relatedness of the enzyme to *Enterobacter cloacae* β-galactosidase. BgalEL is a homotetramer with molecular weight 465 kDa composed of ~ 116.42 kDa subunits. The optimal pH range and temperature for maximum hydrolytic activity on ONPG were 7.0–8.0 and 45 °C respectively. BgalEL was stable at pH ranges 6.0–8.0. The *K*m and *V*max for BgalEL were recorded as 2.03 mM and 49.3 U mg^{-1} respectively. The product formation by BgalEL was modelled with various degradation kinetic models and zeroth was found as model was best-fitted model. The kinetic half-life period of ONPG was noted as 9.0×10^{-4}. The presence of K^+, Mg^{2+} and Mn^{2+} at 10 mM concentrations stimulated BgalEL activity by 31 ± 3.9, 34 ± 1.2 and 42 ± 1.9% respectively. It was interesting to see that BgalEL was least affected by the hydrolytic products, glucose and galactose. Noteworthy, effect of Ca^{2+} ions on BgalEL activity was negligible at concentrations of 10 mM. BgalEL hydrolyzed lactose in milk at refrigerated temperature and also displayed transglycosylation potential in the presence of substantial concentrations of lactose at 40 °C. Finally, this is the first report with such a detailed characterization of β-galactosidase enzyme from a gram-negative bacterium isolated from the Arctic region. In light of the above mentioned properties, we thus recommend the enzyme BgalEL for the large scale production lactose free milk for the safe consumption in lactose-intolerance and the prebiotic galactooligosaccharides as supplement for infant food formulas.

Graphical Abstract

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First page : (109) Last page : (114)
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Article DOI : 10.5958/2319-1198.2018.00015.5

Bioprocessing of Prawn Shell Powder for Chitinase Production from *Kurthia Gibsonii* Mb 126 by Solid Substrate Fermentation

Paul Mini K.[1,*], Mini K.D.[1], Mathew Jyothis[1]
[1]Assistant Professor, Department of Biosciences, MES College, Aluva, Kerala, India

*Email id: minikpaul2016@gmail.com

Abstract

Development of a successful bacterial SSF system for chitinase production is laborious as there are many factors critically influencing such a system. These factors are to be accurately optimised. Chitinase was produced from *Kurthia gibsonii* Mb126 isolated from marine environments of Kochi, Kerala, by solid substrate fermentation utilising prawn shell powder as the substrate. No additional carbon and nitrogen sources were required. Various conditions for the production were optimised. Maximum chitinase activity (426 U/gds) was obtained with moisture content 75%, the pH of the moistening solution 8 and temperature of incubation 40°C and by using 0.6 mm size prawn shell powder. The optimum inoculum size was $3'10^5$ CFU/mL. The presence of certain surfactants increased the yield. As a result of optimising the yield of chitinase from *K. gibsonii* Mb126 could be increased approximately 5.5 fold from 78.56 to 426 U/gds. This study reports an inexpensive method for chitinase production by utilising prawn shell waste.

Top

Keywords

Antimicrobial and biochemical characterization of a C-type lectin isolated from pearl spot (Etroplus suratensis)

Abdul Salam Rubeena [1], Mani Divya [2], Baskaralingam Vaseeharan [2], Sivashanmugam Karthikeyan [3], Einar Ringø [4], Elumalai Preetham [5]

Affiliations + expand

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Abstract

The present study reveals purification and characterization of a C-type lectin from the serum of pearl spot, Etroplus suratensis (Es-Lec). The Es-Lec was purified by affinity chromatography with mannose coupled sepharose CL-4B column and it exhibits single band with a molecular weight of 75 kDa in SDS-PAGE. The surface morphology of purified Es-Lec displays the homogeneous nature of protein. A distinct peak with a retention time of 2.958 min was appeared in high performance liquid chromatography (HPLC), X-ray diffraction (XRD) analysis expresses a single peak at 31.837° and MALDI-TOF peaks which shows the purity and crystalline nature of the protein respectively. Functional analysis of purified Es-Lec exhibits yeast agglutination activity against Saccharomyces cerevisiae and has the ability to agglutinate the human erythrocytes, which was observed by light microscopy and haemagglutination inhibition was also done. In addition, purified Es-Lec showed the broad spectrum

Comparative Evaluation of EMB Agar and Hicrome E. coli Agar for Differentiation of Green Metallic Sheen Producing Non E. coli and Typical E. coli Colonies from Food and Environmental Samples

Ally C. Antony[1,2]*, Mini K. Paul[2], Reshma Silvester[1], Aneesa P.A.[1], Suresh K.[1], Divya P.S.[1], Simmy Paul[3], Fathima P.A.[4] and Mohamed Hatha Abdulla[1]

[1]Department of Marine Biology, Microbiology and Biochemistry, School of Marine Sciences, Cochin University of Science and Technology, Lakeside Campus, Cochin – 682 016, India.

[2] M.E.S. College, Marampally, Ernakulam – 683 107, India.

[3]School of Medical Education, Mahatma Gandhi University, Kottayam, India.

[4]State Council of Educational Research and Training, Trivandrum, India.

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A Study of Digital Watermarking on Relational Databases for Ownership Proofing and Tamper Detection

Murugan R
Research Scholar, Research & Development Centre, Bharathiar University, Coimbatore, Tamilnadu, India and Associate Professor, MES College Marampally, Aluva, Kochi, India.

Orcid Id: 0000-0003-3137-8236

Dr. John T Abraham
Assistant Professor, Bharata Mata College, Thrikkakara, Kochi, India.

Aravind M J
School of Engineering, Cochin University of Science and Technology, Cochin, Kerala, India

Abstract: In recent years, everything is trending toward digitalization. With the rapid development of the Internet technologies and the wide usage of applications of databases, databases need to be transmitted conveniently over the network. Extensive use of the Internet coupled with the tremendous growth in database applications has created a huge demand for database security. Watermarking is one of the techniques for protecting databases from illegal copying and distribution, and copyright protection. Different types of watermarking technology is an effective solution to meet such challenges. A watermark is considered to be some kind of information or marks that is embedded into underlying digital data for tamper detection, ownership proof, traitor tracing etc.

Initially most of the work on digital watermarking was on watermarking text, images, videos, etc. [1][2], and in the last few years watermarking of database systems started to receive attention because of the increasing use of it in many real life

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Service Quality to Satisfaction with Service: A study in Banking sector

*Farzana S.Hussain

Assistant Professor, Department of Commerce M.E.S. College, Marampally, Aluva, Kerala (India)

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***Corresponding Author**
Email: farzana.shajeer [at]gmail.com

ABSTRACT

In today's highly competitive Indian banking sector, the delivery of excellent service quality to customers is a key to success and survival of banking business. This study examines the nature of relationship between service quality and satisfaction with service in a retail bank setting. The specific objectives of the study are to determine the nature of relationship between service quality dimensions as identified by Sureshchander, Rajendran and Anantharaman (2002) and satisfaction with service in the bank. That type of analysis will be helpful to identify and ascertain dimensions of service quality that has significant impact on service satisfaction level of customers. The findings from the study can provide with valuable insights in enhancing service quality to induce greater customer satisfaction and positive behavioural outcomes. Banks are facing ever-intensifying competition, and they have to be sensitive to the demands of well-informed and value-conscious customers. Measuring customer satisfaction offers an immediate, meaningful and objective feedback about clients preferences and expectations.41 item scale to measure bank service quality by Sureshchander, Rajendran and Anantharaman (2002) is used to study perceptions of service quality and Customer Satisfaction with Service Scale of Susskind, Kacmar & Borchgrevink (2003) is used to measure satisfaction among customers regarding the bank's service. In this way, the service quality dimensions may be evaluated in relation to service satisfaction and it will be an indication of the strong and the weak points of the bank. This paper intends to relate these two variables in selected public and private banks and to make a comparison of the data collected. The most significant contribution will be interms of the determination of the critical service dimensions. This will enable to gain competitive advantage by a thorough understanding of the critical factors.

1. Introduction

In a milieu which becomes increasingly competitive, service quality as a critical measure of organizational performance remains at the forefront of services marketing literature and practice

(Yavas and Yasin, 2001). There has been a flurry of research exploring interrelationships between service quality and satisfaction owing to the realisation that high service quality is a must for achieving customer satisfaction.

A number of organizations are focussing on ascertaining the customer perceptions of service quality and subsequently devising strategies for enhancing the same (Zeithaml et. al.,1996). Acording to Cronin and Taylor (1992) , delivery of high quality service was the tactic that was predominantly employed by service providers to carve a niche for them in the global market. Denove & Powers (2006) comments that over the true financial impact, there is

There is a growing awareness of importance of services in the world economy. The complex nature of services coupled with the growing province of the service sector has increased the need for better customer satisfaction. Banking and financial services are an important part of the service industry (Mishkin, 2001). There have been significant changes in the regulatory, structural, and technological factors in the banking environment throughout the world. The result is that such changes have reduced barriers to cross-border expansion, ending up in a a more integrated global banking market. Banks are being allowed a greater range of activities, enabling them to become more competitive with non-bank financial institutions. Currently, banking includes, in addition to normal banking functions, other financial services that were traditionally non-banking in character such as investment, insurance, mortgage, securitization, etc. According to Benston (1994), this move attempted to bridge the gap between banking and financial service providing institutions (as cited by Singh and Kaur, 2011).

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THE DYNAMICS OF M-CUSTOMER RELATIONSHIP MANAGEMENT ON CUSTOMER LOYALTY AND SATISFACTION-WITH SPECIAL REFERENCE TO LIC

Nizamole Abdul Kader
Assistant Professor, Department of Commerce
MES College, Marampally, Aluva, Ernakulam, dist. Kerala
E.Mail: **nisha.shiyas916@yahoo.com**
MOB:9747081999

ABSTRACT

The purpose of the study is to gain better understanding on the net benefit of mobile customer relationship management mCRM from the perspectives of customers in LIC. The spread of mobile communication which has become a global mega trend, has opened up fresh opportunities to get to know the customer attract new customer and cultivate customer relations. Approximately 50% of mobile network users already access mobile services today. After the advent of worldwide web (www) which brought an increase in customer data and intensified CRM discussions in its wake, we are now entering the age of computerized mobile communication with diverse possibilities to enlist the services of mobile people. The paper outlines the new and latest technological developments and the resultant capabilities of mobile CRM in LIC. The proportion of internet traffic coming from mobile devices grew 1% in 2009 to 15% in 2015, and it's still growing swiftly. CRM focuses specifically on the relationship with customers and mCRM focuses even further on the electronic relationship with customers. The implementation of mCRM will deliver the net benefit to organization .This means that marketers can deliver cheaper; faster and more flexible CRM. The objectives of the study are twofold, firstly to study the customer relationship management program of life insurance corporation of India, and to assess the effectiveness of mCRM in LIC .Results of the study are based on the opinion scores who are with LIC for more than last five years.

Keywords: mCRM, customer retention, customer loyalty, life time value, net benefits, intensified CRM, Internet traffic.

INTRODUCTION

Mobile customer relationship management (mobile CRM) is a type of customer relationship management application designed to be executed, operated and accessed through mobile platforms. Mobile CRM enables organizations to add, edit and manage their interaction and relationships with current or prospective customers through mobile applications on handheld mobile devices, PDAs and tablet PCs. A powerful M-CRM is a great tool for any business that values internet leads. Managing a segmented list of subscribers is essential to following up with leads in a timely manner, providing them with the service they are seeking and convincing them that your service is trustworthy. To develop strategies for customer relationship management further insight informed by research is required to address the step change brought about by the digitalized consumer environment. The central proposition is that the digital

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RISK MANAGEMENT - AN ANALYSIS OF ISSUES IN ISLAMIC BANKS

Ramla Beevi A.P.
Assistant Professor, Department of Commerce
M E S College Marampally, Ernakulam Dist.

ABSTRACT

Islamic Banking is the system of Banking, which is based on Islamic Economics or Financial System which is laid down in Qur'an and the Prophet's traditions. Islamic Finance and Banking are superior to the Conventional financial system and best suited to the modern global village. It is the most efficient banking system, which exists now in the world. It ensures the quality between all humans. The basement stone of this system is Zakath (i.e. Obligatory share of the poor in the wealth of rich). Islam speaks against Riba (Interest). The basis of Islamic Law or Shariah is wisdom and welfare of the people in this world as well as thereafter. In Islamic Banking system, sharing of profit or loss i.e., provider of capital and user of capital should equally share the risk of business adventure. But in conventional banking the pressure is on borrower. Interest, gambling, speculation etc., are prohibited in Islamic system. Money cannot sit and generate more and more money. It's a way for defining value of a thing, and money has any value itself i.e., Money is only a medium for exchange. For growing it must be invested in productive manner. This means that we can't make money from space (none). So Islamic finance is doing actual economic activity. Working of an Islamic Bank is quite simple, it is based on trade. Eg: in the case of home loan, usual conventional banks are giving money for buying home and seeking rate of interest. In the case of Islamic Banks, the bank is buying home and selling it to the customer. Risk arises when there is possibility of more than one outcome and the ultimate outcome is unknown. Risk can be defined as the variability or volatility of unexpected outcomes. It is usually measured by the standard deviation of historic outcomes. Though all businesses face uncertainty, financial institutions face some special kind of risks given their nature of activities. The objective of financial institutions is to maximize profit and shareholder value-added by providing different financial services mainly by managing risk.

Key words: risk, Shariah, Zakath, Riba, gambling, speculation

INTRODUCTION

Islamic Banking is the system of Banking, which is based on Islamic Economics or Financial System, which is laid down in Qur'an and the Prophet's traditions. Islamic Finance and Banking are superior to the Conventional financial system and best suited to the modern global village. It is the most efficient banking system, which exists now in the world. It ensures the quality between all humans. The basement stone of this system is Zakath (i.e. Obligatory share of the poor in the wealth of rich). Islam speaks against Riba (Interest).

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