

2010 International Conference on Systems in Medicine and Biology

(ICSMB 2010)

**Kharagpur, India
16 - 18 December 2010**



IEEE Catalog Number: CFP1017N-PRT
ISBN: 978-1-61284-039-0

TABLE OF CONTENTS

Color-image Processing: An Introduction with Some Medical Application-examples	1
<i>Ramesh R. Galigekere</i>	
Lipidomics as a Diagnostic and Research Tool	2
<i>Aaron Z. Fernandis, Markus Wenk</i>	
Inorganic Nanoparticles As Antioxidants.....	4
<i>Sudipta Seal</i>	
Neural Rehabilitation – The Role of Technology in Medicine	5
<i>Ratnesh Kumar</i>	
Genetic Basis of HPV Mediated Cervical Cancer in Indian Women	6
<i>Mausumi Bharadwaj, Showket Hussain, Nisha thakur</i>	
Effect Of Sodium Channel Parameters On Reentrant Arrhythmia: A Computational Study.....	7
<i>M. Ramasubba Reddy</i>	
Raman Spectroscopy For Less Invasive And Online Medical Applications	9
<i>C. Murali Krishna</i>	
Real-Time Detection of Pre-Atherosclerotic Lesions in New Zealand White Rabbits	10
<i>Lisong Ai, Fei Yu, Tzung K. Hsiao</i>	
Recent Studies On Optical Coherence Tomography Imaging Of Biological Tissues	16
<i>K. Divakar Rao</i>	
Active Roles Of Glial Cells In Neurodegenerative Disease	18
<i>Koji Yamanaka</i>	
Mystery of Potentised Substances: Some Significant Attempts to Unveil It	20
<i>M. Sadhukhan, A. Sutradhar, P. Syam, C. R. Mahata, R. Chattopadhyay</i>	
Simulation of Three Electrode Device for Bioimpedance Study using COMSOL Multiphysics.....	24
<i>Rangadhar Pradhan, Analava Mitra, Soumen Das</i>	
Multicategory Cancer Classification from Gene Expression Data by Multiclass NPPC Ensemble.....	28
<i>Santanu Ghorai, Anirban Mukherjee, Sanghamitra Sengupta, Pranab K. Dutta</i>	
Automated Cell Nucleus Segmentation and Acute Leukemia Detection in Blood Microscopic Images	34
<i>Subrajeev Mohapatra, Dipti Patra</i>	
ECG Feature Extraction and Classification of Anteroseptal Myocardial Infarction and Normal Subjects using Discrete Wavelet Transform.....	40
<i>Swati Banerjee, Madhuchanda Mitra</i>	
Regional Sub-block Matrices based Multiple Regularization and Biomedical Image Reconstruction	46
<i>Samir Kumar Biswas, K. Rajan, R. M. Vasu</i>	
C-shaped Embedded Polymer Waveguide for Evanescent Field Absorption based Lab on a Chip Biosensor	52
<i>Amit Prabhakara, Soumyo Mukherjia</i>	
Determination and Study of a Dominant Genetic Network Responsible for the Growth of a Fungus Using the Concepts of Bayesian Algorithm	56
<i>Sayan Dey, Goutam Saha</i>	
Laser Reflectance Microscopy 2-D Tissue Imaging System	66
<i>Harshit Popat, Tanuj Poshwal, Megha Singh</i>	
Potential of Dendrimeric Architecture in Surface Plasmon Resonance Biosensor	71
<i>Jitendra Satija, Gauri M. Shukla, S. Mukherji</i>	
A Comparison of Bioclustering Algorithms	75
<i>Nishchal K. Verma, Sheela Meena, Shruti Bajpai, Amarjot Singh, Aditya Nagrare, Yan Cui</i>	
Correlating Liver Stiffness and Splenic Stiffness Values in Patients with Chronic Liver Diseases Using Magnetic Resonance Elastography	83
<i>Shyam Thangaraju, Manjunatha Mahadevappa, Sudhakar K Venkatesh</i>	
Visual Importance Pooling for Image Quality Assessment of Despeckle Filters in Optical Coherence Tomography	87
<i>Debroot Sheet, Santanu Pal, Arindam Chakraborty, Jyotirmoy Chatterjee, Ajoy K. Ray</i>	
Sub Region Identification in Gait Cycle for Real Time Implementation	93
<i>Gurjeet Singh, Deepak Joshi, Sneh Anand, Piyush Swami</i>	
A New Technique for Removal of Ocular Artifacts from EEG Signals Using S-Transform.....	98
<i>Kedarnath Senapati, Sibsambhu Kar, Aurobinda Routray</i>	

Reduction In Buckling of Deposited Thin Film On PDMS Elastomer By Engineering The Substrate Topology	102
<i>Puneet Manocha, Debashis Maji, Soumen Das</i>	
Macroporous Silicon as an Interdigitated Electrode-less Platform for Impedance Based Bacteria Detection.....	106
<i>R. Dev Das, C. RoyChaudhuri, S. Das</i>	
Performance Analysis of LDA, QDA and KNN Algorithms in Left-Right Limb Movement Classification from EEG Data	111
<i>Saugat Bhattacharyya, Anwesha Khasnobish, Somsirsa Chatterjee, Amit Konar, D. N. Tibarewala</i>	
Frequency Domain Hammerstein Model of Glucose-Insulin Process in IDDM Patient.....	117
<i>Arpita Bhattacharjee, Ashoke Sutradhar</i>	
Knee Joint Cartilage Visualization and Quantification in Normal and Osteoarthritis.....	123
<i>M. S. Mallikarjuna Swamy, M. S. Holi</i>	
Development of Echo Control Strategy for AK Prosthesis: an Embedded System Approach.....	128
<i>Deepak Joshi, Ramandeep Singh, Rahul Ribeiro, Sakti Srivastava, U. Singh, Sneh Anand</i>	
Simple Cytosensor Based Electrical Characterization of Keratinocytes and Fibroblasts with Prime Molecular Expressions towards Skin Tissue Engineering Applications	133
<i>A. Barui, R. K. Das, S. Dhara, J. Chatterjee, R. Dev Das, A. K. Ray, C. Roy Chaudhuri</i>	
Experimental Study and Characterization of Chitosan-HAP Composite as Orthopedic Implant Material	139
<i>S. Chatterjee, A. Chanda, K. Pal</i>	
Synthesis and Characterization of Nano-grained Hydroxyapatite through Slip Casting Technique	145
<i>Howa Begam, Abhijit Chanda, Biswanath Kundu</i>	
Evaluation of p63 Expression in Oral Sub-mucous Fibrosis.....	151
<i>Raunak Kumar Das, Vikram Venkatraghavan, Mousumi Pal, Ranjan Rashmi Paul</i>	
A Urine ^1H NMR based Metabonomic Approach to Understand the Host Metabolic Response towards Plasmodium vivax Infection	157
<i>Arjun Sengupta, Soumita Ghosh, Haripalsingh M. Sonawat, Angika Basant, Shobhana Sharma, N. A. Kshirsagar, N. Gogtay</i>	
Technique of Topographical Mapping of FDI Muscle Response after Single Pulse TMS Stimulation: A method to Study Inter Hemispheric Symmetry and Plasticity of Human Motor Cortex	162
<i>Bikas K Arya , Manjunatha M. Asha Kishore, Balu Velayudhan</i>	
Effect of Load Distribution of the Backpack- A Design Study.....	168
<i>Sonal Atreya, Sneh Anand, U. Singh, Ashok Jaryal, Rahul Ribeiro, Sakti Srivastava</i>	
Efficacy of Reflexology in Managing Chronic Pain and Difficulty in Lower Limb Movement Involving Intractable Epilepsy.....	172
<i>Krishna Dalal, V. Bharathi Maran, D. Elanchezhiyan, Anurag Srivastava, A.B. Dey, Manjari Tripathi</i>	
A Novel Approach to Data Driven Preventive Maintenance Scheduling of Medical Instruments.....	178
<i>Justin Joseph, S. Madhukumar</i>	
Detrimental Effects of Oxidative Stress on Sperm Membrane and DNA Integrity in Normozoospermic Infertile Men	183
<i>Elavarasan Subramani, Koel Chaudhury</i>	
Nanocapsulated Flavonoid: Effect on Cerebral Ischemia-reperfusion Induced Mitochondrial Oxidative Damage In Rat Brain	188
<i>Swarupa Ghosha, Sibani Sarkar, Nirmalendu Das</i>	
Correlating Optical Biopsy with Histopathology of Wounds under Topical Intervention with Honey.....	194
<i>A. Barui, P. Banerjee, R. K. Das, S. Dhara, J. Chatterjee</i>	
Criticality of Electrical Safety for Medical Devices	197
<i>Ashoke Chakrabarty, Rajanikant Panda</i>	
Baseline Wander And Power Line Interference Elimination From Cardiac Signals Using Error Nonlinearity LMS Algorithm	202
<i>Mohammad Zia Ur Rahman, Rafi Ahamed Shaik, D. V. Rama Koti Reddy</i>	
GOGA: GO-driven Genetic Algorithm-based Fuzzy Clustering of Gene Expression Data	206
<i>Anirban Mukhopadhyay, Ujjwal Maulik, Sanghamitra Bandyopadhyay, Benedikt Brors</i>	
A Low Cost Short-term Sperm Preservation Procedure for Double IUI in Controlled Ovarian Hyperstimulation Cycles	212
<i>Ratna Chattopadhyay, Saikat K. Jana, Gunja Bose, Baidyanath Chakravarty, Koel Chaudhury</i>	
Distinguishing Phyllodes from Fibroadenoma by Immunohistochemical and Swept Source-Optical Coherence Tomography Studies.....	216
<i>P. P. Maity, A. K. Maity, S. Mukhopadhyay, A. Sadhu, D. J. Moulik, S. Chatterjee, A.Ghosh, P. Banerjee, S. Dhara, J. Chatterjee</i>	

Design of An Insole Embedded Foot Pressure Sensor Controlled FES System For Foot Drop in Stroke Patients	222
<i>Sukanta Kumar Sabut, Ratnesh Kumar, Manjunatha Mahadevappa</i>	
Invariant Moment based Feature Analysis for Abnormal Erythrocyte Recognition.....	227
<i>Devkumar Das, Madhumala Ghosh, Chandan Chakraborty, Mallika Pal, Ashok K. Maiti</i>	
Multiple Tuned Model Approach for the Analysis of Nonlinear Dynamics of the Long Term Blood Pressure Regulation.....	233
<i>M. Shahi, S. Maka</i>	
Signal Analysis by using FIR Filter Banks in Cochlear Implant Prostheses	238
<i>P. Mahalakshmi, M. R. Reddy</i>	
Evaluation of Osteoporosis Using Radiographic Hip Geometry, Compared with Dual Energy X-ray absorptiometry (DXA) as the Standard	244
<i>N. Shankar, V. Sapthagirivasan, A. Vijay, K. Kirthika, M. Anburajan</i>	
Phase Synchronization based Weighted Networks for Classifying Levels of Fatigue and Sleepiness	250
<i>A. Acharya, S. Kar, A. Routray</i>	
Introduction About Traditional Tongue Diagnosis With Scientific Value Addition.....	254
<i>Debasis Bakshi, Sujata Pal</i>	
Analyzing Important Ground Water Parameters in West Bengal with a Fuzzy Approach in the Context of Arsenic Pollution.....	258
<i>Snigdha Pal Chaudhury, Debjani Chakraborty, Arindam Mukhopadhyay, Debasree Guha, Jyotirmoy Chatterjee</i>	
A Multifrequency Constant Current Source Suitable for Electrical Impedance Tomography (EIT).....	263
<i>Tushar Kanti Bera, Nagaraju Jampa</i>	
On the Suitability of a Two-Pulse Synthesis Model for Photoplethysmograph Signal Analysis in Public Cardiac Care Program.....	269
<i>Dharitri Goswami, Koel Chaudhuri, Jayanta Mukherjee</i>	
Screening of Pseudomonas Aeruginosa Strain for Enhanced Synthesis of Azurin Induced by Copper Sulphate and Potassium Nitrate and its Characterization	275
<i>R. Sankar, Mahitosh Mandal</i>	
A New Algorithm for Automatic Assessment of the Degree of TB-infection Using Images of ZN-stained Sputum Smear	279
<i>Rohit Nayak, Vishnu Prasad Shenoy, Ramesh R. Galigekere</i>	
A User Interactive Method for Measuring Lateral Ventricle Width in Neonates	285
<i>P. Mondal, J. Mukhopadhyay, S. Suraly, A. K. Majumdar, A. Biswas, A. Singh, S. Mukherjee</i>	
Characterization of Oil-in-water Gelatin Emulsion Gels: Effect of Homogenization Time	290
<i>Goutam Thakur, Analava Mitra, Amit Basak, Dérick Rousseau, Kunal Pal</i>	
Development Of Moxibustion Based Novel Technique Using Himalayan Herbs For Fast Relief As Well As Prevention Of Certain Human Ailments	294
<i>Sujata Pal, Chandana Mitra, Debasis Bakshi</i>	
Implementation of Katsevich Algorithm for Helical Cone-Beam Computed Tomography using CORDIC.....	298
<i>Pradyut Biswal, Swapna Banerjee</i>	
An Experimental Study for Analyzing Static Stability Using Two Load Cell Methods.....	303
<i>Prasanna Lenka, D. N. Tiberwala</i>	
Screening Of Pseudomonas Aeruginosa Strain For Enhanced Synthesis Of Azurin Induced By Copper Sulphate And Potassium Nitrate And Its Characterization	307
<i>R. Sankar, Mahitosh Mandal</i>	
Round-The-Clock Urine Sugar Monitoring System for Diabetic Patients.....	311
<i>Pramit Ghosh, Debotosh Bhattacharjee, Mita Nasipuri, Dipak Kumar Basu</i>	
Automatic Grading of Diabetic Maculopathy Severity Levels.....	316
<i>P. C. Siddalingaswamy, K. Gopalakrishna Prabhu</i>	
UV Photodiode Based Portable Fiber Optic Biosensor	320
<i>Arvind Dhawangale, Reshma Bharadwaj, Soumyo Mukherji, Tapanendu Kundu</i>	
Deposition And Characterization Of Nichrome Thin Film Over PDMS Elastomer	324
<i>Debashis Maji, Puneet Manocha, Soumen Das</i>	
Mining Association Rules from HIV-Human Protein Interactions	329
<i>Anirban Mukhopadhyay, Ujjwal Maulik, Sanghamitra Bandyopadhyay, Roland Eils</i>	
Geometry & Hemodynamics of Arterial Stenosis : A Clinical and Computational Study	334
<i>Krittika Dasgupta, Abhijit Chanda, Abhirup Roy Choudhury, Debabrata Nag</i>	
A Comparative Study Of Microstructure and Mechanical Properties of Human Cortical Bone	340
<i>S. Biswas, P. C. Pramanik, P. Dasgupta, A. Chanda</i>	
Synthesis and Characterization of Polyvinyl Alcohol Hydrogel	345
<i>Sumit Kumar Rai, Piyali Basak</i>	

Blood Glucose Regulation in IDDM Patient by H_∞ Control: An LMI Approach.....	350
<i>Sharmistha Mandal, Ashoke Sutradhar</i>	
Effect of Electrode Geometry on Voltage Reduction in EWOD Based Devices	356
<i>Debanjan Das, Soumen Das, Karabi Biswas</i>	
Design and Development of a Cost-efficient Air Sterilization System.....	361
<i>Debasish Panda, Nibedit Dey, Deepak Samantaray</i>	
Efficacy of Low Cost Liquid Based Cytology for Cervical Smears in Automated Segmentation of Cells and Nuclei.....	366
<i>Lopamudra Das, Richa Malviya, M. Manjunatha, Ajoy K. Ray, Jyotirmoy Chatterjee, P. K. Dutta</i>	
Static Foot Pressure Image Analysis for Variation in Men and Women while Standing Foot Pressure Image Analysis.....	371
<i>R. Periyasamy, Sneh Anand, Ashutosh Mishra, A. C. Ammini</i>	
Comparison of ANN Models to Predict LDL Level in Diabetes Mellitus Type 2	377
<i>Monisha Chakraborty, Bipan Tudu</i>	
Clinical Biomarker For Predicting Preeclampsia In Women With Abnormal Lipid Profile: Statistical Pattern Classification Approach	382
<i>Rashmi Mukherjee, Chaitali D. Ray, Chandan Chakraborty, Swagata Dasgupta, Koel Chaudhury</i>	
Does Oral Antioxidant Administration Improve Semen Parameters In Infertile Men?.....	387
<i>Saikat Kumar Jana, Baidyanath Chakravarty, Koel Chaudhury</i>	
Classification of EEG Signal Using Wavelet Transform and Support Vector Machine for Epileptic Seizure Detection	390
<i>R. Panda, P. S. Khobragade, P. D. Jambhule, S. N. Jengthe, P. R. Pal, T. K. Gandhi</i>	
Entropy Based Divergence For Leukocyte Image Segmentation.....	394
<i>Madhumala Ghosh, Devkumar Das, Chandan Chakraborty</i>	
Efficacy of Low Cost Liquid Based Cytology for Cervical Smears in Automated Segmentation of Cells and Nuclei.....	399
<i>Lopamudra Das, Richa Malviya, M. Manjunatha, Ajoy K. Ray, Jyotirmoy Chatterjee, P. K. Dutta</i>	
On the Properties of a Piecewise Affine Model for Glucose Regulation.....	404
<i>Subhojit Ghosh, S. Maka</i>	
Application of Adaptive Filters in Noise Reduction in Mammography Images	408
<i>Hamidreza Ramezanpour, Navid Barati, Ghazaleh Darmani, Hosein Farrokhbakhsh</i>	
Aspergillus Niser For The Study Of In Vitro Drug Metabolism	412
<i>K. Pramanik, N. Panda, J. Satapathy, A. Biswas</i>	
Expression Of α_vβ₃ Integrin, Leukemia Inhibitory Factor And Pinopodes As Markers Of Endometrial Receptivity In Idiopathic Recurrent Spontaneous Miscarriage.....	417
<i>Priyanka Banerjee, Baidyanath Chakravarty, Koel Chaudhury</i>	
Molecular Characterization Of Selenoproteins Based On Decreased Glutathione Peroxidase Activity In Preeclampsia.....	422
<i>Sourav Roy Choudhury, Rashmi Mukherjee, Koel Chaudhury</i>	
Alpha-amylase Activity of Tannin Isolated from Terminalia chebula	428
<i>Sutapa Mukherjee, Analava Mitra, Satyahari Dey, Goutam Thakur</i>	
Study of Self Medication of Allopathic Medicine among College Students in West Bengal	431
<i>Debasish Dewanjee, Analava Mitra, Jyotirmoy Chatterjee</i>	
Author Index	