

# **2010 International Conference on Bioinformatics and Biomedical Technology**

**(ICBBT 2010)**

**Chengdu, China  
16 – 18 April 2010**



**IEEE Catalog Number: CFP1064J-PRT**  
**ISBN: 978-1-4244-6775-4**

# Contents

<i>Preface</i>	iii
<i>Organizing Committees</i>	xiii
<i>Reviewers</i>	xiv
Combining Molecular Simulation Techniques to Predict the Binding Modes of Oseltamivir, Anamivir and Natural herb Products with the Neuramindase of the H1N1 Influenza A Virus <i>Yeng-Tseng Wang and Chen-hsiung Chan</i>	1
Homology Based Multi-Instance Kernel Combination for Gram-negative Protein Subcellular Localization <i>Suyu Mei and Wang Fei</i>	5
Fabrication of Microcontroller Based Multipurpose Measuring System with Inbuilt Data Acquisition <i>Sneh Anand, Amit Sengupta, Ruhi Mahajan and S. K. Pahuja</i>	10
A Comprehensive Survey on Genome sequence Analysis <i>Hassan Mathkour and Muneer Ahmad</i>	14
Fuzzy Inference Systems in MR Image Processing-A Review <i>X. X. Yin, B. W.-H. Ng, D. Abbott, W. Jia, Yin, X. X. Yin and K. Ramamohanarao</i>	19
Phenoloxidase Activity of Phenol-Degrading Bacteria <i>Hong-jun Han, Fang Fang, Wen-cheng Ma, Chun-yan Xun, Wei Wang and Hui-qiang Li</i>	23
Whole Genome Identification of Target Genes of Transcription Factors <i>Haiyan Hu and Xiaoman Li</i>	27
Hierarchical Order of Gene Expression Levels <i>Haiyan Hu and Xiaoman Li</i>	31
2D Simulation and Visualization of Tumour Growth Based on Discrete Mathematical Models <i>Xuefeng Gao, Mark Tangney and Sabin Tabirca</i>	35
Interactive 3D Graphics for Cancer Experiment Data Visualisation <i>Yin Jie Chen, Mark Tangney and Sabin Tabirca</i>	42
The Iterative Next-neighbor Regridding (INNG) Algorithm Combined with TV Regularization Used for Reconstruction in Diffraction Tomography <i>Tingting Li, Qiegen Liu and Jianhuo Luo</i>	47
Continuous Cuffless Blood Pressure Monitoring Based on PTT <i>Revati Shriram, Asmita Wakankar, Nivedita Daimiwal and Dipali Ramdasi</i>	51

Wireless Transfusion Supervision and Analysis Using Embedded System <i>Nivedita Daimiwal, Dipali Ramdasi, Revathi Shriram and Asmita Wakankar</i>	56
Research of Data Warehouse Established Methods Based on Civil Aviation Medicine Certification Management Information System <i>Yuan Cao, Qianfeng Liu, Zheng Zheng and Hong Su</i>	61
Polyimide-Based Single-walled Carbon Nanonets (SWCNNs) Flexible Strain Sensor for Bone <i>Ya-Ting Huang, Shyh-Chour Huang, Chih-Chao Hsu and Ru-Min Chao</i>	65
Reliability Modeling for Wireless Ultra Wideband Biomedical Radar Sensing Network <i>Xubo Wang, Anh Dinh and Daniel Teng</i>	69
The Segmentation Algorithm of Dental CT Images based on Fuzzy Maximum Entropy and Region Growing <i>Shan Dong-ri and Gao Fu-yuan</i>	74
Investigation of Differences on Cortical Connectivity Between Patients With Major Depressive Disorder and Normal Subjects Using MR Diffusion Tensor Imaging <i>Chia-Feng Lu, Shin Teng, Yu-Te Wu, Po-Shan Wang, Tze-Chen Yeh, Tung-Ping Su and Jen-Chuen Hsieh</i>	79
Removal of Cd(II), Pb(II), Hg(II) and Zn(II) Ions from Wastewater Using Synthesized Poly (p-bromoaniline) <i>Abdunnaser .Etorki, Abuein, Mohammed and El-Hajami Ali</i>	84
Co-occurrence of Core of Binding Sites for Transcription Factors in Intronic Region of <i>Saccharomyces Cerevisiae</i> Ribosomal Protein Genes <i>Hu Jun and Zhang Jing</i>	88
Linking Corpus Characteristics to Performance of Semantic Annotation Systems for Biosystematic Descriptions <i>Hong Cui</i>	92
Bioinformatics: Trends in Gene Expression Analysis <i>Shital A. Raut, S. R. Sathe and Adarsh Raut</i>	97
Implementation of a Wearable Real-Time System for Physical Activity Recognition based on Naive Bayes Classifier <i>Xiuxin Yang, Anh Dinh and Li Chen</i>	101
A Neuronal Fiber Tracking Study for Major Depressive Disorder Using MR Diffusion Tensor Imaging With Fiber Tractography <i>Chia-Feng Lu, Shin Teng, Yu-Te Wu, Po-Shan Wang, Tze-Chen Yeh, Tung-Ping Su and Jen-Chuen Hsieh</i>	106
Polysaccharides Extraction from Submerged-Cultured Mycelium of <i>Grifola Fruondosa</i> <i>Gao-Qiang Liu, Wen-Jun Han, Huai-Yun Zhang and Xian-Chun Jin</i>	111

Investigation of Differences on Functional Connectivity in Major Depressive Disorder Using Functional Magnetic Resonance Imaging	115
<i>Shin Teng, Chia-Feng Lu, Yu-Te Wu, Po-Shan Wang, Tze-Chen Yeh, Tung-Ping Su and Jen-Chuen Hsieh</i>	
SVM Model for Amino Acid Composition Based Classification of HIV-1 Groups	120
<i>Anubha Dubey Bhasker Pant and Neeru Adlakha</i>	
Blood Velocity Estimation Feasibility Using High Resolution Time-resolved MR Sequences	124
<i>Ayham Darwich and François Langevin</i>	
Study on the Photovoltaic (PV) System's Application Possibility	129
<i>Jiang Wu, Jiehe Chen, Jianxing Ren, Weiguo Pan, Yanyan Zhang, Haiyan Sun, Keyi Li, Jianhua Hu, Rongrong Ai and Xueyuan Yu</i>	
A New Method for Automatic Detection and Diagnosis of Retinopathy Diseases in Colour Fundus Images Based on Morphology	134
<i>Mahsa Naser Langroudi and Hamed Sadjedi</i>	
Color Doppler Echocardiographic Image Analysis via Shape and Texture Features	139
<i>S. Nandagopalan, Dr. B. S. Adiga, C. Dhanalakshmi and N. Deepak</i>	
A Prototype Device and Control System of Implantable Blood Glucose Regulation System	144
<i>Zimei Wu, Shei Meng Loo, Chee Kong Chui, Geok Soon Hong and Stephen Chang</i>	
Screening of Oleaginous Microorganisms for Microbial Lipids Production and Optimization	149
<i>Gao-Qiang Liu, Du Li, Chao-Yang Zhu, Kuan Peng and Huai-Yun Zhang</i>	
Yeast Caspase 1, a Possible Antioxidant Enzyme Belonging to a Mitochondrial Originated Antioxidation Process	153
<i>Du Lin, Lu Yongjun and Zhou Shining</i>	
Embedded Programmable Web-based ECG Monitoring & Detection System Using a Fast Algorithm	156
<i>Md. Kafiul Islam, Md. Asaduzzaman Shoeb, Tanvir Ahammad and Tasnuva Faruk Nowrin</i>	
Bandage-Size Non-ECG Heart Rate Monitor Using ZigBee Wireless Link	160
<i>Anh Dinh and Tao Wang</i>	
Adaptation Method for BCI System on Subject	164
<i>Martin Hosna and Pavel Mautner</i>	
Antioxidative and Cardioprotective Activities of Total Flavonoids from Moldavian Balm ( <i>Dracocephalum Moldavica</i> L.)	168
<i>Yuan Xuan, FuWei, Zheng Qiusheng, Ju Bao, Xu Bo and Zheng Qiusheng</i>	

Isoliquiritigen Enhances Antitumour Activity of Cyclophosphamid <i>Xuan Yuan, Defang Li, Hongmei Chen, Chao Sun, Na Chen, Xiaoyu Chen, Zhenhua Wang and Qiusheng Zheng</i>	172
Time Concurrent Hybrid Functional Petri Nets (TCHFPN), A New Approach for Modeling and Evaluation of Biological Pathways <i>Mohammad Farid Bayat and M. B. Ghaznavi-Ghouschi</i>	176
A New Medical Image Mosaic Algorithm Based on Fuzzy Sets Recognition Method <i>Xu Jing, Yang Xiao Hong and Shao Xiang Xin</i>	180
The Study of Cueing Devices by Using Visual, Auditory and Somatosensory Stimuli for Improving Gait in Parkinson Patients <i>Chatkaew Pongmala, Areerat Suputtitada and Mana Sriyuthsak</i>	185
Fitting Four-Parameter Logistic Model Using Mixed-Effects Modeling Approach <i>Lichun Jiang</i>	190
Expression Analysis of MicroRNA Cluster Based on IsomiRs from High Throughput DNA Sequencing Data <i>Li Guo and Zuhong Lu</i>	195
Automatic Extraction of Three Dimensional Lung Texture Tree from HRCT Images <i>Tong Tong, Yufeng Huang, Xingjia Wang, Huanqing Feng and Chuanfu Li</i>	198
The Cloning and Characterization of Genomic DNA Encoding for the RPB5-mediating Protein (RMP) <i>Junxia Gu, Xiaohua Wang, Wenzhuo Zhuang, Jingcheng Miao and Wenxiang Wei</i>	203
Microsatellite Analysis of Genetic Diversity and Population Genetic Structure of the Sporophytes of <i>Undaria Pinnatifida</i> (Phaeophyceae) in Dalian of China <i>Ruipeng Wang, Zeyu Zhang, Xiuli Wang and Hongyue Wang</i>	207
Protein Function Prediction based on k-cores of Interaction Networks <i>Norihiko Kamakura, Hiroki Takahashi, Kensuke Nakamura, Shigehiko Kanaya and Md. Altaf-Ul-Amin</i>	211
A Protein Structure Prediction and Function Identification Study on CNV P20 <i>Rui Mao and Kuan Wu</i>	216
Registration-Based Auto-Detection of the Optimal Cross Sections in 3D Echocardiographic Images <i>Xiaoping Liu, Xin Yang, Lanping Wu and Xiao Tan</i>	221
Predict protein subnuclear location with Ensemble Adaboost Classifier <i>Rong Wei and Tongliang Zhang</i>	226
Simultaneous Expression of SMYD3 and EGFP in NIH3T3 Cells <i>Xue-Gang Luo, Shu Guo, Zhi-Peng Liu, Tong-Cun Zhang and Tao Xi</i>	231

Construction of SMYD3 Liver-specific Expression Transgene for the Establishment of Transgenic Mice	235
<i>Xue-Gang Luo, Ting-Ting Qin, Zhong-Shuai Xin, Dao-Zhu Huangfu and Tao Xi</i>	
Design and Preliminary Evaluation of An Air-alternating Wheelchair Seating System for Pressure Ulcer Prevention	239
<i>Yuxiang Yang, Jian Wang, Zonghai Gao and Yi Zhou</i>	
Unrestricted Identification of Post Translational Modifications from Tandem Mass Spectra Datasets	244
<i>Chiyong Kang, Dong-Joo Kim, Young-Rae Kim and Gwan-Su Yi</i>	
Open-Short-Load Compensation for A Bipolar Bioimpedance Spectrometer	248
<i>Ke-ning Wang, Xiong-xing Zhan and Wei Wang</i>	
Accuracy Improvement by A Three-Reference Calibration Algorithm for A Bioimpedance Spectrometer	253
<i>Yuxiang Yang, Jian Wang, Zonghai Gao and Yali Liu</i>	
Computational Prediction of Small Non-coding RNA within Distal 3' region of 16SrRNA Gene of Bacillus sp. Strain SJ-101	257
<i>Braj R. Singh, Abdulaziz A. Al-Khedhairi, Saud A. Alarifi and Javed Musarrat</i>	
Missing Value Estimation for DNA Microarray Gene Expression Data with Principal Curves	262
<i>Jinlong Shi and Zhigang Luo</i>	
Life Prediction Equation for Human Beings	266
<i>A. A. Bhosale and K. K. Sundaram</i>	
Skull-Based Registration of Intra-subject CT Images: The Effects of Different Resolutions and Partial Contents	269
<i>Yuan-Lin Liao, Yung-Nien Sun, Chieh-Tsai Wu, Shih-Tseng Lee, Chia-Feng Lu, Yu-Te Wu and Jiann-Der Lee</i>	
Biomedical & Clinical Engineering in Arabic Countries between Concepts, Reality, Challenges & Expectations	273
<i>M. S. Tuleimat</i>	
Simple Derivation for Parameter Formula of RLC Series Connection Sinusoidal Current Circuit	276
<i>Guilin Lu, ShaoHong Wang, YongBo Yu and Zhi Jun Ren</i>	
Simulation on 2D Microwave Imaging of Finger Joint with a Newton Iterative Method	279
<i>Yong-zhong Hu and Zheng-ou Zhou</i>	
Limiting Search Space in Bayesian Network using GGM	283
<i>Qing Zhang, Samuel SM Sun, Yong Cao and Dianjing Guo</i>	

Isolation and Characterization of Pathogeny from Cultured Banded Grouper <i>Ying-xue Qin and Qing-pi Yan</i>	288
The Antigenicity of the Flagellin, Outer Membrane Proteins and Lipopolysaccharide of <i>Vibrio Harveyi</i> <i>Ying-xue Qin and Qing-pi Yan</i>	292
Survival and Physiological Responses of <i>Vibrio Parahaemolyticus</i> to Starvation in Warm Seawater <i>Qing-pi Yan and Ying-xue Qin</i>	296
Mechanism of Asymmetrical Peak in Chromatography <i>ZHANG Dali, KE Jiajun and LU Lizhu</i>	301
Combined Multiple Clusterings on Flow Cytometry Data to Automatically Identify Chronic Lymphocytic Leukemia <i>You-Wen Qian, William Cukierski, Mona Osman and Lauri Goodell</i>	305
Predicting Breast Cancer Recurrence Using Data Mining Techniques <i>Qi Fan, Chang-jie Zhu and Liu Yin</i>	310
Novel 3D Reconstruction and Visualization Contribute to Clinical Therapy for Complex Extremity Fractures <i>Xing Ma, Yaoping Wu, Xiaoming Wu, Jian Liu and Long Sun</i>	312
Biomeasurement of Heavy Metal in Source Separation BMW Composting <i>Feng Lei and Li Run-dong</i>	317
The Biostatics of BMW Source Separation in China Shenyang <i>Feng Lei and Li Run-dong</i>	320
Development of an Ambulatory Multi-parameter Monitoring System for Physiological Stress Related Parameters <i>Ke. Ma, Joshua C. T. Khoo and Thomas I. H. Brown</i>	324
Study on Activity of Soluble Catechol-O-Methyltransferase in Rat Liver Using High Performance Liquid Chromatography <i>Lina Yang and Yulin Deng</i>	329
A Prosthetic Hand System Based on Neural Network Theory <i>Bai Heyuan, Wang Dahu, Hu Zhiguo and Zhang Jiaolong</i>	332
Feature Extraction Values for Breast Cancer Mammography Images <i>Hala Al-Shamlan and Ali El-Zaart</i>	335
Cloning and Sequence Analysis of a Partial L-Lactate Dehydrogenase Gene of <i>Bacillus Coagulans</i> TL-4v A Partial <i>ldh</i> gene of <i>B. coagulans</i> TL4 <i>Binzhe Wang, Qiang Gao, Bing Liu, Kunyu Jiang and Zhe Su</i>	341

True Intestinal Digestibility of Amino Acids of Forage and Browse Legumes in Cattle <i>Joseph Jimu Baloyi and Humphrey Hamudikuwanda</i>	345
A Novel Blind Source Extration Method For Biomedical Signals <i>Yongjian Zhao and Boqiang Liu</i>	348
Comparison of Tn1546 Element of Vancomycin Resistant Staphylococcus Aureus Isolated from Burned Patients in Sulaimani Hospital <i>Dlnya Asad Mohammed</i>	353
The Electrosurgery: — A Story of Controversies and Discrepancies <i>M. S. Tuleimat</i>	356
Study of Preparation of DNA Molecular Weight Standards <i>Yuqian Qin and Zongsheng Sheng</i>	360
Fusion Expression of Antibacterial Peptide Salmine from Genetically Engineered Bacteria <i>Chengchu Liu, Chunxiao Wang, Jianzhang Lu, Jingjing Liu and Yi-Cheng Su</i>	363
Effects of Cold Storage and Thermal Treatment on Growth and Survival of Pathogenic Vibrio Parahaemolyticus <i>Xiaosheng Shen, Wenwei Liu and Chengchu Liu</i>	371
The Protective Effects of Flavonoids from Astragalus Complanatus on Carbon Tetrachloride Induced Hepatic Fibrosis in Mice <i>Li-Bing Sun, Zhen-Lun Gu, Ci-Yi Kwok and Wei-Ping Wang</i>	374
Agriculture! A Veritable Tool for Reducing the Rate of Unemployment in Nigeria <i>S. O. W. Toluwase</i>	378
Expression of Amyloid- $\beta$ Peptide 42 in Retinal Ganglion Cells of Postnatal Rats is Light-Exposure-Dependent <i>Chunfang Zhu, Yirong Xu, Peipei Zhang, MinChen Wang, Jun Liu and Kaiyun Wu</i>	382
A New Model of Intelligent Hybrid Network Intrusion Detection System <i>Xuedou Yu</i>	386
Studies on Discrimination and Segmentation Method of Touching Milk Somatic Cell <i>Su Na and Xue Heru</i>	390
Applying the Dual-tree Complex DWT and Double Density DWT for Mass Spectrometry Feature Extraction and Classification <i>Phuong Pham, Li Yu and Minh Nguyen</i>	394
An Improved Method for Digital Time Series Signal Generation from Scanned ECG Records <i>Prashanth Swamy, Srinivasan Jayaraman and M. Girish Chandra</i>	400



Driver Fatigue Detection Through Pupil Detection and Yawing Analysis <i>Weiwei Liu, Haixin Sun and Weijie Shen</i>	404
Multi-meteorological Factors-based Neural Network Model for Broiler Growth Performance Prediction <i>Peijie Huang, Meiyang Xiao, Piyuan Lin and Shangwei Yan</i>	408
Software Simulation of Quenched Boolean Genetic Regulatory Network <i>Orce Simov</i>	413
A Storage & Search Efficient Representation of Medical Data <i>Razan Paul and Abu Sayed Md. Latiful Hoque</i>	418
Fisheries and Aquaculture Development in Nigeria: An Appraisal <i>Adejoke Abeni Adewumi and Oyedapo Adewale Fagbenro</i>	423
To Study the Metal Composition of Edible Portion of Farmed Hybrid Fish (Catla Catla and x Labeo Rohita) in Relation to Body Size and Condition Factor from Multan, Pakistan <i>Muhammad Naeem, Abdus Salam, Razia Allah Yar and Yunas Khokhar</i>	427
Study of Genetic Diversity of Dashtiari and Khazak Breeds using Microsatellite Markers <i>Masoud Alipanah, Fatemeh Rabbani and Adam Torkamanzehi</i>	432
Growth, Radiation Use Efficiency and Yield Parameters of Wheat Affected by Different Levels of Irrigation and Nitrogen <i>Muhammad Asif, Amjed Ali, Muhammad Maqsood and Shahbaz Ahmad</i>	434
Nutritional Composition in Leaves of Some Mulberry Varieties: A Comparative Study <i>Venkatesh Kumar R, Seema Chauhan, Dhiraj Kumar and Nandkishor More</i>	438