

**Volume 2 Issue 11, October 2014**

**International Journal of Inventive**

**Engineering and Sciences**

**ISSN : 2319-9598**

**website: [www.ijies.org](http://www.ijies.org)**



**Blue Eyes Intelligence Engineering & Sciences Publication Pvt. Ltd.**  
**Exploring Innovation: A Key for Dedicated Services**

**Address:**

# 22, First Floor, ShivLoka Phase-IV,  
Khajuri Kala, BHEL-Piplani, Bhopal (M.P.)-462021, India

**Website:** [www.blueeyesintelligence.org](http://www.blueeyesintelligence.org)

**Email:** [director@blueeyesintelligence.org](mailto:director@blueeyesintelligence.org), [blueeyes@gmail.com](mailto:blueeyes@gmail.com)

**Cell #:** +91-9669981618, **WhatsApp #:** +91-9669981618, **Viber #:** +91-9669981618

**Skype #:** beiesp, **Twitter #:** beiesp

## **Editor In Chief**

### **Dr. Shiv K Sahu**

Ph.D. (CSE), M.Tech. (IT, Honors), B.Tech. (IT)

Director, Blue Eyes Intelligence Engineering & Sciences Publication Pvt. Ltd., Bhopal(M.P.), India

### **Dr. Shachi Sahu**

Ph.D. (Chemistry), M.Sc. (Organic Chemistry)

Additional Director, Blue Eyes Intelligence Engineering & Sciences Publication Pvt. Ltd., Bhopal(M.P.), India

## **Vice Editor In Chief**

### **Dr. Himani Sharma**

Professor & Dean, Department of Electronics & Communication Engineering, MLR Institute of Technology, Laxman Reddy Avenue, Dundigal, Hyderabad, India

### **Prof.(Dr.) Anuranjan Misra**

Professor & Head, Computer Science & Engineering and Information Technology & Engineering, Noida International University, Noida (U.P.), India

## **Chief Advisory Board**

### **Prof. (Dr.) Hamid Saremi**

Vice Chancellor of Islamic Azad University of Iran, Quchan Branch, Quchan-Iran

### **Dr. Uma Shanker**

Professor & Head, Department of Mathematics, CEC, Bilaspur(C.G.), India

### **Dr. Rama Shanker**

Professor & Head, Department of Statistics, Eritrea Institute of Technology, Asmara, Eritrea

### **Dr. Vinita Kumari**

Blue Eyes Intelligence Engineering & Sciences Publication Pvt. Ltd., India

### **Dr. Kapil Kumar Bansal**

Head (Research and Publication), SRM University, Gaziabad (U.P.), India

### **Dr. Deepak Garg**

Professor, Department of Computer Science and Engineering, Thapar University, Patiala (Punjab), India, Senior Member of IEEE, Secretary of IEEE Computer Society (Delhi Section), Life Member of Computer Society of India (CSI), Indian Society of Technical Education (ISTE), Indian Science Congress Association Kolkata.

### **Dr. Vijay Anant Athavale**

Director of SVS Group of Institutions, Mawana, Meerut (U.P.) India/ U.P. Technical University, India

### **Dr. T.C. Manjunath**

Principal & Professor, HKBK College of Engg, Nagawara, Arabic College Road, Bengaluru-560045, Karnataka, India

### **Dr. Kosta Yogeshwar Prasad**

Director, Technical Campus, Marwadi Education Foundation's Group of Institutions, Rajkot-Morbi Highway, Gauridad, Rajkot, Gujarat, India

### **Dr. Dinesh Varshney**

Director of College Development Counseling, Devi Ahilya University, Indore (M.P.), Professor, School of Physics, Devi Ahilya University, Indore (M.P.), and Regional Director, Madhya Pradesh Bhoj (Open) University, Indore (M.P.), India

### **Dr. P. Dananjayan**

Professor, Department of Department of ECE, Pondicherry Engineering College, Pondicherry, India

### **Dr. Sadhana Vishwakarma**

Associate Professor, Department of Engineering Chemistry, Technocrat Institute of Technology, Bhopal(M.P.), India

### **Dr. Kamal Mehta**

Associate Professor, Deptment of Computer Engineering, Institute of Technology, NIRMA University, Ahmedabad (Gujarat), India

### **Dr. CheeFai Tan**

Faculty of Mechanical Engineering, University Technical, Malaysia Melaka, Malaysia

### **Dr. Suresh Babu Perli**

Professor & Head, Department of Electrical and Electronic Engineering, Narasaraopeta Engineering College, Guntur, A.P., INDIA



**Dr. Binod Kumar**

Associate Professor, School of Engineering and Computer Technology, Faculty of Integrative Sciences and Technology, Quest International University, Ipoh, Perak, Malaysia

**Dr. Chiladze George**

Professor, Faculty of Law, Akhaltsikhe State University, Tbilisi University, Georgia

**Dr. Kavita Khare**

Professor, Department of Electronics & Communication Engineering., MANIT, Bhopal (M.P.), INDIA

**Dr. C. Saravanan**

Associate Professor (System Manager) & Head, Computer Center, NIT, Durgapur, W.B. India

**Dr. S. Saravanan**

Professor, Department of Electrical and Electronics Engineering, Muthayamal Engineering College, Resipuram, Tamilnadu, India

**Dr. Amit Kumar Garg**

Professor & Head, Department of Electronics and Communication Engineering, Maharishi Markandeshwar University, Mullana, Ambala (Haryana), India

**Dr. T.C.Manjunath**

Principal & Professor, HKBK College of Engg, Nagawara, Arabic College Road, Bengaluru-560045, Karnataka, India

**Dr. P. Dananjayan**

Professor, Department of Department of ECE, Pondicherry Engineering College, Pondicherry, India

**Dr. Kamal K Mehta**

Associate Professor, Department of Computer Engineering, Institute of Technology, NIRMA University, Ahmedabad (Gujarat), India

**Dr. Rajiv Srivastava**

Director, Department of Computer Science & Engineering, Sagar Institute of Research & Technology, Bhopal (M.P.), India

**Dr. Chakunta Venkata Guru Rao**

Professor, Department of Computer Science & Engineering, SR Engineering College, Ananthasagar, Warangal, Andhra Pradesh, India

**Dr. Anuranjan Misra**

Professor, Department of Computer Science & Engineering, Bhagwant Institute of Technology, NH-24, Jindal Nagar, Ghaziabad, India

**Dr. Robert Brian Smith**

International Development Assistance Consultant, Department of AEC Consultants Pty Ltd, AEC Consultants Pty Ltd, Macquarie Centre, North Ryde, New South Wales, Australia

**Dr. Saber Mohamed Abd-Allah**

Associate Professor, Department of Biochemistry, Shanghai Institute of Biochemistry and Cell Biology, Yue Yang Road, Shanghai, China

**Dr. Himani Sharma**

Professor & Dean, Department of Electronics & Communication Engineering, MLR Institute of Technology, Laxman Reddy Avenue, Dundigal, Hyderabad, India

**Dr. Sahab Singh**

Associate Professor, Department of Management Studies, Dronacharya Group of Institutions, Knowledge Park-III, Greater Noida, India

**Dr. Umesh Kumar**

Principal: Govt Women Poly, Ranchi, India

**Dr. Syed Zaheer Hasan**

Scientist-G Petroleum Research Wing, Gujarat Energy Research and Management Institute, Energy Building, Pandit Deendayal Petroleum University Campus, Raisan, Gandhinagar-382007, Gujarat, India.

**Dr. Jaswant Singh Bhomrah**

Director, Department of Profit Oriented Technique, 1 – B Crystal Gold, Vijalpore Road, Navsari 396445, Gujarat. India

## Technical Advisory Board

### Dr. Mohd. Husain

Director, MG Institute of Management & Technology, Banthara, Lucknow (U.P.), India

### Dr. T. Jayanthi

Principal, Panimalar Institute of Technology, Chennai (TN), India

### Dr. Umesh A.S.

Director, Technocrats Institute of Technology & Science, Bhopal(M.P.), India

### Dr. B. Kanagasabapathi

Infosys Labs, Infosys Limited, Center for Advance Modeling and Simulation, Infosys Labs, Infosys Limited, Electronics City, Bangalore, India

### Dr. C.B. Gupta

Professor, Department of Mathematics, Birla Institute of Technology & Sciences, Pilani (Rajasthan), India

### Dr. Sunandan Bhunia

Associate Professor & Head,, Dept. of Electronics & Communication Engineering, Haldia Institute of Technology, Haldia, West Bengal, India

### Dr. Jaydeb Bhaumik

Associate Professor, Dept. of Electronics & Communication Engineering, Haldia Institute of Technology, Haldia, West Bengal, India

### Dr. Rajesh Das

Associate Professor, School of Applied Sciences, Haldia Institute of Technology, Haldia, West Bengal, India

### Dr. Mrutyunjaya Panda

Professor & Head, Department of EEE, Gandhi Institute for Technological Development, Bhubaneswar, Odisha, India

### Dr. Mohd. Nazri Ismail

Associate Professor, Department of System and Networking, University of Kuala (UniKL), Kuala Lumpur, Malaysia

### Dr. Haw Su Cheng

Faculty of Information Technology, Multimedia University (MMU), Jalan Multimedia, 63100 Cyberjaya

### Dr. Hossein Rajabalipour Cheshmehgaz

Industrial Modeling and Computing Department, Faculty of Computer Science and Information Systems, Universiti Teknologi Malaysia (UTM) 81310, Skudai, Malaysia

### Dr. Sudhinder Singh Chowhan

Associate Professor, Institute of Management and Computer Science, NIMS University, Jaipur (Rajasthan), India

### Dr. Neeta Sharma

Professor & Head, Department of Communication Skills, Technocrat Institute of Technology, Bhopal(M.P.), India

### Dr. Ashish Rastogi

Associate Professor, Department of CSIT, Guru Ghansi Das University, Bilaspur (C.G.), India

### Dr. Santosh Kumar Nanda

Professor, Department of Computer Science and Engineering, Eastern Academy of Science and Technology (EAST), Khurda (Orisa), India

### Dr. Hai Shanker Hota

Associate Professor, Department of CSIT, Guru Ghansi Das University, Bilaspur (C.G.), India

### Dr. Sunil Kumar Singla

Professor, Department of Electrical and Instrumentation Engineering, Thapar University, Patiala (Punjab), India

### Dr. A. K. Verma

Professor, Department of Computer Science and Engineering, Thapar University, Patiala (Punjab), India

### Dr. Durgesh Mishra

Chairman, IEEE Computer Society Chapter Bombay Section, Chairman IEEE MP Subsection, Professor & Dean (R&D), Acropolis Institute of Technology, Indore (M.P.), India

### Dr. Xiaoguang Yue

Associate Professor, College of Computer and Information, Southwest Forestry University, Kunming (Yunnan), China

**Dr. Veronica Mc Gowan**

Associate Professor, Department of Computer and Business Information Systems, Delaware Valley College, Doylestown, PA, Allman China

**Dr. Mohd. Ali Hussain**

Professor, Department of Computer Science and Engineering, Sri Sai Madhavi Institute of Science & Technology, Rajahmundry (A.P.), India

**Dr. Mohd. Nazri Ismail**

Professor, System and Networking Department, Jalan Sultan Ismail, Kaula Lumpur, MALAYSIA

**Dr. Sunil Mishra**

Associate Professor, Department of Communication Skills (English), Dronacharya College of Engineering, Farrukhnagar, Gurgaon (Haryana), India

**Dr. Labib Francis Gergis Rofaiel**

Associate Professor, Department of Digital Communications and Electronics, Misr Academy for Engineering and Technology, Mansoura City, Egypt

**Dr. Pavol Tanuska**

Associate Professor, Department of Applied Informatics, Automation, and Mathematics, Trnava, Slovakia

**Dr. VS Giridhar Akula**

Professor, Avanthi's Research & Technological Academy, Gunthapally, Hyderabad, Andhra Pradesh, India

**Dr. S. Satyanarayana**

Associate Professor, Department of Computer Science and Engineering, KL University, Guntur, Andhra Pradesh, India

**Dr. Bhupendra Kumar Sharma**

Associate Professor, Department of Mathematics, KL University, BITS, Pilani, India

**Dr. Praveen Agarwal**

Associate Professor & Head, Department of Mathematics, Anand International College of Engineering, Jaipur (Rajasthan), India

**Dr. Manoj Kumar**

Professor, Department of Mathematics, Rashtriya Kishan Post Graduate Degree, College, Shamli, Prabudh Nagar, (U.P.), India

**Dr. Shaikh Abdul Hannan**

Associate Professor, Department of Computer Science, Vivekanand Arts Sardar Dalipsing Arts and Science College, Aurangabad (Maharashtra), India

**Dr. K.M. Pandey**

Professor, Department of Mechanical Engineering, National Institute of Technology, Silchar, India

**Prof. Pranav Parashar**

Technical Advisor, International Journal of Soft Computing and Engineering (IJSCE), Bhopal (M.P.), India

**Dr. Biswajit Chakraborty**

MECON Limited, Research and Development Division (A Govt. of India Enterprise), Ranchi-834002, Jharkhand, India

**Dr. D.V. Ashoka**

Professor & Head, Department of Information Science & Engineering, SJB Institute of Technology, Kengeri, Bangalore, India

**Dr. Sasidhar Babu Suvanam**

Professor & Academic Coordinator, Department of Computer Science & Engineering, Sree Narayana Gurukulam College of Engineering, Kadayiuruppu, Kolenchery, Kerala, India

**Dr. C. Venkatesh**

Professor & Dean, Faculty of Engineering, EBET Group of Institutions, Kangayam, Erode, Caimbatore (Tamil Nadu), India

**Dr. Nilay Khare**

Assoc. Professor & Head, Department of Computer Science, MANIT, Bhopal (M.P.), India

**Dr. Sandra De Iaco**

Professor, Dip.to Di Scienze Dell'Economia-Sez. Matematico-Statistica, Italy

**Dr. Yaduvir Singh**

Associate Professor, Department of Computer Science & Engineering, Ideal Institute of Technology, Govindpuram Ghaziabad, Lucknow (U.P.), India

**Dr. Angela Amphawan**

Head of Optical Technology, School of Computing, School Of Computing, Universiti Utara Malaysia, 06010 Sintok, Kedah, Malaysia

**Dr. Ashwini Kumar Arya**

Associate Professor, Department of Electronics & Communication Engineering, Faculty of Engineering and Technology, Graphic Era University, Dehradun (U.K.), India

**Dr. Yash Pal Singh**

Professor, Department of Electronics & Communication Engg, Director, KLS Institute Of Engg.& Technology, Director, KLSIET, Chandok, Bijnor, (U.P.), India

**Dr. Ashish Jain**

Associate Professor, Department of Computer Science & Engineering, Accurate Institute of Management & Technology, Gr. Noida (U.P.), India

**Dr. Abhay Saxena**

Associate Professor&Head, Department. of Computer Science, Dev Sanskriti University, Haridwar, Utrakhnad, India

**Dr. Judy. M.V**

Associate Professor, Head of the Department CS &IT, Amrita School of Arts and Sciences, Amrita Vishwa Vidyapeetham, Brahmasthanam, Edapally, Cochin, Kerala, India

**Dr. Sangkyun Kim**

Professor, Department of Industrial Engineering, Kangwon National University, Hyoja 2 dong, Chunche0nsi, Gangwondo, Korea

**Dr. Sanjay M. Gulhane**

Professor, Department of Electronics & Telecommunication Engineering, Jawaharlal Darda Institute of Engineering & Technology, Yavatmal, Maharastra, India

**Dr. K.K. Thyagarajan**

Principal & Professor, Department of Informational Technology, RMK College of Engineering & Technology, RSM Nagar, Thiruyallur, Tamil Nadu, India

**Dr. P. Subashini**

Assoc. Professor, Department of Computer Science, Coimbatore, India

**Dr. G. Srinivasrao**

Professor, Department of Mechanical Engineering, RVR & JC, College of Engineering, Chowdavaram, Guntur, India

**Dr. Rajesh Verma**

Professor, Department of Computer Science & Engg. and Deptt. of Information Technology, Kurukshetra Institute of Technology & Management, Bhor Sadian, Pehowa, Kurukshetra (Haryana), India

**Dr. Pawan Kumar Shukla**

Associate Professor, Satya College of Engineering & Technology, Haryana, India

**Dr. U C Srivastava**

Associate Professor, Department of Applied Physics, Amity Institute of Applied Sciences, Amity University, Noida, India

**Dr. Reena Dadhich**

Prof. & Head, Department of Computer Science and Informatics, MBS MArg, Near Kabir Circle, University of Kota, Rajasthan, India

**Dr. Aashis. S. Roy**

Department of Materials Engineering, Indian Institute of Science, Bangalore Karnataka, India

**Dr. Sudhir Nigam**

Professor Department of Civil Engineering, Principal, Lakshmi Narain College of Technology and Science, Raisen, Road, Bhopal, (M.P.), India

**Dr. S. Senthil Kumar**

Doctorate, Department of Center for Advanced Image and Information Technology, Division of Computer Science and Engineering, Graduate School of Electronics and Information Engineering, Chon Buk National University Deok Jin-Dong, Jeonju, Chon Buk, 561-756, South Korea Tamilnadu, India

**Dr. Gufran Ahmad Ansari**

Associate Professor, Department of Information Technology, College of Computer, Qassim University, Al-Qassim, Kingdom of Saudi Arabia (KSA)



**Dr. R. Navaneetha krishnan**

Associate Professor, Department of MCA, Bharathiyar College of Engg & Tech, Karaikal Puducherry, India

**Dr. Hossein Rajabalipour Cheshmejjaz**

Industrial Modeling and Computing Department, Faculty of Computer Science and Information Systems, Universiti Teknologi Skudai, Malaysia

**Dr. Veronica McGowan**

Associate Professor, Department of Computer and Business Information Systems, Delaware Valley College, Doylestown, PA, Allman China

**Dr. Sanjay Sharma**

Associate Professor, Department of Mathematics, Bhilai Institute of Technology, Durg, Chhattisgarh, India

**Dr. Taghreed Hashim Al-Noor**

Professor, Department of Chemistry, Ibn-Al-Haitham Education for pure Science College, University of Baghdad, Iraq

**Dr. Madhumita Dash**

Professor, Department of Electronics & Telecommunication, Orissa Engineering College, Bhubaneswar, Odisha, India

**Dr. Anita Sagadevan Ethiraj**

Associate Professor, Department of Centre for Nanotechnology Research (CNR), School of Electronics Engineering (Sense), Vellore Institute of Technology (VIT) University, Tamilnadu, India

**Dr. Sibasis Acharya**

Project Consultant, Department of Metallurgy & Mineral Processing, Midas Tech International, 30 Mukin Street, Jindalee-4074, Queensland, Australia

**Dr. Neelam Ruhil**

Professor, Department of Electronics & Computer Engineering, Dronacharya College of Engineering, Gurgaon, Haryana, India

**Dr. Faizullah Mahar**

Professor, Department of Electrical Engineering, Balochistan University of Engineering and Technology, Pakistan

**Dr. K. Selvaraju**

Head, PG & Research, Department of Physics, Kandaswami Kandars College (Govt. Aided), Velur (PO), Namakkal DT. Tamil Nadu, India

**Dr. M. K. Bhanarkar**

Associate Professor, Department of Electronics, Shivaji University, Kolhapur, Maharashtra, India

**Dr. Sanjay Hari Sawant**

Professor, Department of Mechanical Engineering, Dr. J. J. Magdum College of Engineering, Jaysingpur, India

**Dr. Arindam Ghosal**

Professor, Department of Mechanical Engineering, Dronacharya Group of Institutions, B-27, Part-III, Knowledge Park, Greater Noida, India

**Dr. M. Chithirai Pon Selvan**

Associate Professor, Department of Mechanical Engineering, School of Engineering & Information Technology Manipal University, Dubai, UAE

**Dr. S. Sambhu Prasad**

Professor & Principal, Department of Mechanical Engineering, Pragati College of Engineering, Andhra Pradesh, India.

**Dr. Muhammad Attique Khan Shahid**

Professor of Physics & Chairman, Department of Physics, Advisor (SAAP) at Government Post Graduate College of Science, Faisalabad.

**Dr. Kuldeep Pareta**

Professor & Head, Department of Remote Sensing/GIS & NRM, B-30 Kailash Colony, New Delhi 110 048, India

**Dr. Th. Kiranbala Devi**

Associate Professor, Department of Civil Engineering, Manipur Institute of Technology, Takyelpat, Imphal, Manipur, India

**Dr. Nirmala Mungamuru**

Associate Professor, Department of Computing, School of Engineering, Adama Science and Technology University, Ethiopia

**Dr. Srilalitha Girija Kumari Sagi**

Associate Professor, Department of Management, Gandhi Institute of Technology and Management, India

**Dr. Vishnu Narayan Mishra**

Associate Professor, Department of Mathematics, Sardar Vallabhbhai National Institute of Technology, Ichchhanath Mahadev Dumas Road, Surat (Gujarat), India

**Dr. Yash Pal Singh**

Director/Principal, Somany (P.G.) Institute of Technology & Management, Garhi Bolni Road, Rewari Haryana, India.

**Dr. Sripada Rama Sree**

Vice Principal, Associate Professor, Department of Computer Science and Engineering, Aditya Engineering College, Surampalem, Andhra Pradesh. India.

**Dr. Rustom Mamlook**

Associate Professor, Department of Electrical and Computer Engineering, Dhofar University, Salalah, Oman. Middle East.

**Managing Editor**

**Mr. Jitendra Kumar Sen**

International Journal of Advanced Engineering and Nano Technology (IJAENT)

**Editorial Board**

**Dr. Vikas Maheshwari**

Associate Professor, Department of Electrical Communication Engineering, Amity University Madhya-Pradesh Gwalior, M.P., India

**Dr. Sudhakara A**

Associate Professor, Department of Chemistry, Jain Institute of Technology Davanagere, Karnataka, India

**Dr. Jammi Ashok**

Associate Professor, Department of Electrical and Computer Engineering, Hawassa University, Hawassa.(East Africa)

**Dr. Mohamed Ashabrawy**

Associate Professor, Department of Computer Science, Salman bin Abdulaziz University Kingdom, Saudi Arabia

**Dr. Omer Muhammad Ayoub**

Associate Professor, Department of Computer Science, Punjab University Affected Center Abdullah Sulayman Road, Al-Fayyaz, Jeddah, KSA Saudi Arabia

**Dr. M. Seenivasan**

Associate Professor, Department of Mathematics, Annamalai University Annamalainagar, Tamil Nadu, India

**Dr. S.V.G.V.A. Prasad**

Associate Professor, Department of Physics, Ideal College of Arts & Sciences, Kakinada, A.P, India.

**Dr. S. Omkumar**

Associate Professor, Department of Electronics and Communication Engineering, SCSVMV University, Enathur, Kanchipuram – 631 561. Tamilnadu, India.

**Dr. Yousef FARHAOUI**

Associate Professor, Department of Computer Science, Faculty of Sciences and Technic, Moulay Ismail University, B.P 509, Boutalamine, Errachidia, Morocco.

**Dr. Gutta Sridevi**

Associate Professor, Department of Computer Science & Engineering, K L University, Vaddeswaram, Guntur (DT) Andhra Pradesh. India.

**Dr. Debmalya Bhattacharya**

Associate Professor, Department of Electronics & Communication Engineering, University of Technology & Management, Bawri Mansion, Dhankheti, Shillong-793003, Meghalaya, India.

**Dr. K. Harinadha Reddy**

Associate Professor, Department of Electrical and Electronics Engineering, L B R College of Engineering, Mylavaram, Krishna District, Andhra Pradesh State - 5 21 230, India.

**Dr. C. Gajendran**

Associate Professor, Department of Civil Engineering, School of Civil Engineering, Karunya Nagar, Karunya University, Coimbatore – 641114, Tamil Nadu, India.



**Dr. Dibya Prakash Rai**

Assistant Professor, Department of Physics, College of Aizawl, Pachhunga University, Mizoram, India.

**Dr. Sreenivasa Reddy**

Associate Professor, Department of Chemistry, Sri Krishnadevaraya University, Anantapur-515003, A.P., India.

**Dr. P. K. Dhal**

Associate Professor, Department of Electrical and Electronics Engineering, Vel Tech, Dr. RR & Dr. SR Technical University, Chennai, India.

**Dr. M. A. Ashabrawy**

Associate Professor, Department of Computer Science, Atomic Energy Authority, Salman bin Abdulaziz University, Al Kharj Saudi Arabia.

**Dr. K. Meenakshi Sundaram**

Professor & Head, Department of Computer Science, Agnel Institute of Technology and Design, Assagao - Bardez, Goa. India.

**Dr. Persis Voola**

Associate Professor, Department of Computer Science and Engineering, Adikavi Nannaya University, Rajah Narendra Nagar, Rajahmundry-533296 Andhra Pradesh, India.

**Dr. Abhijit Banerjee**

Associate Professor, Department of Electronics and Instrumentation Engineering, Academy of Technology, Hooghly, Grand Trunk Rd, Adisaptagram, Aedconagar, West Bengal, India.

**Dr. D. Amaranatha Reddy**

Associate Professor, Department of Chemistry, Pusan National University, Busan, South Korea.

**Dr. A. Heidari**

Associate Professor, Department of Chemistry, Postdoctoral Research Fellow, California South University (CSU), Irvine, California, USA

**Dr. Ashwani Kumar Aggarwal**

Assistant Professor, Department of Electrical and Instrumentation Engineering, Sant Longowal Institute of Engineering and Technology, Longowal, Punjab, India.

**Dr. P. Srinivas**

Assistant Professor, Department of Electrical Engineering, University College of Engineering Osmania University, Hyderabad-500007, Telangana, India.

**Dr. Sandeep Chettri**

DST-SERB, Young Scientist, Department of Physics, Mizoram University, Tanhril, Aizawl, Mizoram 796004, India.

**Dr. Elsanosy M. Elamin**

Assistant Professor, Department of Electrical and Electronic Engineering, Faculty of Engineering, University of Kordofan B.O.Box: 160 Elobeid, (Sudan). North Africa.

**Dr. Porag Kalita**

Professor & Head, Department of Automobile Engineering, Jorhat, Assam, India.

**Dr. T. A. Ashok Kumar**

Associate Professor, Department of Computer Science, Christ University, Bengaluru, Karnataka, India.

**Dr. Malini M Patil**

Associate Professor, Department of Information Science and Engineering, JSS Academy of Technical Education, JSS Campus, Bangalore-560060, Karnataka, India.

**Dr. V. Selvan**

Associate Professor, Department of Civil Engineering, Sri Ramakrishna Engineering College, Vattamalaipalayam, Coimbatore, Tamil Nadu, India.

**Dr. Syed Umar**

Associate Professor, Department of Computer Science and Engineering, Koneru Lakshmaiah University, Vaddeswaram, Guntur, Andhra Pradesh, India.

S. No	Volume-2 Issue-11, October 2014, ISSN: 2319-9598 (Online) Published By: Blue Eyes Intelligence Engineering & Sciences Publication Pvt. Ltd.		Page No.
1.	Authors:	Chetan S. Deshpande, N. V. Deshpande	
	Paper Title:	Experimental and Analytical Investigation of Ferro Cement Silo for Various H/D Ratios and Wall Thickness	
	<b>Abstract:</b> Ferrocement being a versatile construction material, its applicability in case of silos which can be used for food grain storage creates an area of research. Its cracking or tensile strength and corresponding strains are the key parameters of ferrocement silo designing. In this paper an attempt has been made to investigate tensile strength and strains of ferrocement flats of particular thickness, reinforced with single layer of square welded wire mesh and to calculate, predict and compare the hoop tensions for different silo wall thicknesses and H/D ratios using the equations developed graphically which are based on analytically developed parameters derived from the test results.		
	<b>Keywords:</b> Ferrocement, Hoop tension, Silo, Tensile strength.		
	References:		
		1. ACI 549R – 97, State – of – the – Art Report on Ferrocement 2. Azad A. Mohammed and Dunyazad K. Assi, Tensile Stress – Strain Relationship For Ferrocement Structures, Al – Rafidain Engineering, Volume 20, No. 2, March 2012, pp 27 – 40. 3. Gangadharappa B. M., Prakash K. E., Suresh G. S. and Shesha Prakash M. N. “Studies of Light Weight Ferrocement Subjected to Axial Tension”, International Journal of Emerging Technologies in Computational and Applied Sciences, 2013, pp 239 – 245. 4. Sayyed Shoheb Navid, Swayambhu S. Bhalsing and Pankaj B. Autad “Tensile Strength of Ferrocement with Respect to Specific Surface”, International Journal of Engineering and Advanced Technology, December 2013, Volume - 3, Issue – 2, pp 473 – 475. 5. “A report on Ferrocement: Applications in Developing Countries”, National Academy of Sciences. 6. Chetan S. Deshpande, Dr. N. V. Deshpande, “Study of Ferrocement Silo used for Bulk Material Storage”, International Journal of Application or Innovation in Engineering & Management”, Special Issue for National Conference on Recent Advances in Technology and Management for Integrated Growth 2013. 7. I.S. 4995 (I) – 1974, “Criteria for Design of Reinforced Concrete Bins for the Storage of Granular & Powdery Materials, General Requirements and Assessment of Bin Loads”. 8. I.S. 4995 (II) – 1974, “Criteria for Design of Reinforced Concrete Bins for the Storage of Granular & Powdery Materials, Design Criteria”.	
2.	Authors:	S. Arun, N. Yashwanth, R. Adharsh	
	Paper Title:	Experimental and Comparison Studies on Drying Characteristics of Tomatoes in a Solar Tunnel Greenhouse Dryer Coupled with and without Biomass Backup Heater	
	<b>Abstract:</b> A natural convection solar tunnel greenhouse dryer coupled with biomass heater was designed and developed in Nallampalli region of Pollachi, Tamil Nadu (India) and also a natural convection solar tunnel greenhouse dryer without biomass heater was designed and developed in Negamam region of Pollachi, Tamil Nadu (India) for carrying out the experimental and comparison studies of drying characteristics of tomatoes during the month of May, 2014. About 50kgs of fresh and good quality tomatoes were loaded into those two respective dryers and it was repeated for three trails. The mass of fuel added to the biomass heater was about 7.5kg/hr. The biomass heater was ignited when there is a fall in sunshine (after 5PM) in order to maintain the temperature inside the dryer. The solar tunnel dryer coupled with the biomass heater dried the tomatoes which has an initial moisture content of 90% (w.b.) to a final moisture content of 9.5% (w.b.) over a time period of 24 hours whereas the solar tunnel greenhouse dryer without the biomass heater took 49 hours for reducing the moisture content of the tomatoes to the same level. The reduced drying time in the solar tunnel greenhouse dryer coupled with the biomass heater than that of the dryer without the biomass heater is due to the effect of biomass heater that is responsible for the steady increase in temperature inside the dryer by supplying sufficient heat during the night time (after 5PM) where there would be a drop in sunshine. Also the quality of the tomatoes obtained from the solar tunnel greenhouse dryer coupled with biomass heater was found to be superior to that of the tomatoes obtained from the solar tunnel greenhouse dryer without the biomass heater which is due to the high temperature and low relative humidity prevailed all the time inside the dryer irrespective of fall in sunshine.		
	<b>Keywords:</b> Biomass heater, drying time, moisture content, open sun drying, quality, solar tunnel greenhouse dryer, sunshine, temperature.		
	References:		
		1. H. A. Ensminger, E. M. Ensminger, E. J. Kolande, and K. R. Robson, (1994). Florida, USA: CRC Press. vol.2, 2nd ed. pp.2111-2114 2. P.N. Sarsavadia, R. L. Sawhney, D.R. Pangavhane, and S.P. Singh, “Drying behaviour of brined onion slices”, Journal of food Engineering, 1999, vol.40, pp. 219-226. 3. I. Doymaz, “Air-drying characteristics of tomatoes”, Journal of Food Engineering, 2007, vol. 78(4), pp. 1291-1297. 4. B. Zanolini, C. Peri, R. Nani and V. Iavelli, “Oxidative damage of tomato halves as Effected by drying”, Food Research International, 1999, vol.31 (5), pp. 359-401. 5. A. Heredia, C. Barrera, and A. Andres, “Drying of cherry tomato by a Combination of different Comparison kinetics and other related properties”, Journal of Food Engineering, 2006. 6. A. Midilli, and H. Kucuk., “Mathematical modeling of thin layer drying of pistachio by using solar energy”, Energy Conversion and Management, 2003, vol. 44(7), pp. 1111-1122. 7. E. K. Akpinar, Y. Bicer, and C. Yildiz, “Thin layer drying of red pepper”, Journal of Food Engineering, 2003, vol. 59(1), pp. 99-104. 8. E. K. Akpinar, “Drying of mint leaves in a solar dryer and under open sun: Modelling, performance analyses”, Energy Conversion and Management, 2010, vol. 51(12), pp. 2407-2418. 9. M. Aghbashlo, M. H. Kianmehr, and A. Arabhosseini, “Modeling of thin-layer drying of potato slices in length of continuous band dryer”, Energy Conversion and Management, 2009, vol. 50(5), pp.1348-1355. 10. T. Y. Tunde-Akintunde, “Mathematical modeling of sun and solar drying of chilli pepper”, Renewable Energy, 2011, vol. 36(8), pp. 2139-2145.	

3.	<b>Authors:</b>	<b>S. Arun, N. Yashwanth, R. Adharsh</b>	13-16
	<b>Paper Title:</b>	<b>Experimental and Comparison Studies on Drying Characteristics of Red Chillies in a Solar Tunnel Greenhouse Dryer and in the Open Sun Drying Method</b>	
	<p><b>Abstract:</b> A natural convection solar tunnel dryer was designed and developed for carrying out the experimental and comparison studies of drying characteristics of red chillies during the month of April, 2014 in Negamam region of Pollachi, Tamil Nadu (India). About 50 kgs of red chillies were loaded into the dryer and is repeated for three trails. The drying parameters such as drying time and product quality were taken into account to find out the best drying method for red chillies. The red chillies which has an initial moisture content of 72.98% (w.b.) was reduced to a final moisture content of 7.5% (w.b.) over a time period of 56 hours in the solar tunnel greenhouse dryer whereas the open sun drying method took 122 hours for reducing the moisture content of red chillies to the same level. Also, the quality of red chillies produced from the solar tunnel greenhouse dryer was found to be superior to that of the open sun drying method.</p> <p><b>Keywords:</b> Drying time, moisture content, open sun drying, product quality, red chillies, solar tunnel greenhouse dryer.</p> <p><b>References:</b></p> <ol style="list-style-type: none"><li>1. S. Desai, V. Palled, and M. Anantachar, "Performance evaluation of farm solar dryer for chilly drying", Karnataka Journal of Agricultural Sciences, 2009, vol. 22(2), pp. 382–384.</li><li>2. S. Mangaraj, A. Singh, D. V. K. Samuel, O. P. Singhal, "Comparative performance evaluation of different drying methods for Chillies". Journal of Food Science and Technology, 2001, vol. 38 (3), 296–299.</li><li>3. M. A. Hossain, J. L. Woods, B. K. Bala, "Thin layer drying of Thai red chilli", ADC 333-335.</li><li>4. B. K. Bala, M. R. A. Mondol, B. K. Biswas, B. L. Das Chowdury, &amp; S. Janjai, "Solar drying of pineapple using solar tunnel drier", Renewable Energy, 2003, vol. 28, pp.183-190.</li><li>5. T. Y. Tunde-Akintunde, "Mathematical modeling of sun and solar drying of chilli pepper", Renewable Energy, 2011, vol. 36 (8), pp. 2139–2145.</li><li>6. J. Kaewkiew, S. Nabneaan, and S. Janjai, "Experimental investigation of the performance of a large-scale greenhouse type solar dryer for drying chilli in Thailand", Procedia Engineering, 2012, vol. 32, pp. 433–439.</li><li>7. M. A. Hossain and B. K. Bala, "Drying of hot chilli using solar tunnel drier", 2007, Solar Energy, vol. 81 (1), pp. 85-92.</li><li>8. A. O. Dissa, J. Bathiebo, S. Kam, P. W. Savadogo, H. Desmorieux, and J. Koulidiati, "Modelling and experimental validation of thin layer indirect solar drying of mango slices", Renewable Energy, 2009, vol. 34(4), pp. 1000–1008.</li><li>9. M. Aktas, I. Ceylan, and S. Yilmaz, "Determination of drying characteristics of apples in a heat pump and solar dryer", Desalination, 2009, vol. 238, pp. 266–275.</li><li>10. R. P. F. Guiné, D. M. S. Ferreira, M. J. Barroca, and F. M. Gonçalves, "Study of the drying kinetics of solar-dried pears", Biosystems Engineering, 2007, vol. 98(4), pp. 422–429.</li></ol>		
<b>Authors:</b>	<b>Kirandeep Kaur, Vinay Chopra</b>		
	<b>Paper Title:</b>	<b>Review of Automatic Test Case Generation from UML Diagram using Evolutionary Algorithm</b>	17-20
4.	<p><b>Abstract:</b> Software testing plays a vital role in software development life cycle. An approach of testing which takes place at design phase can remove errors in the system and improvise the developed project. Automatic test case generation can be used for testing software or real time applications. Many evolutionary algorithms are used for generating test case automatically. This paper represent review of approach of automatic test case generation by analyzing the dynamic behaviour of UML diagram which takes place at design phase of SWDLc by using evolutionary algorithm multi objective genetic algorithm. Single objective genetic algorithm has been already used for automatic testing.</p> <p><b>Keywords:</b> UML diagram, Test cases, MOGA, DFS, Tree structure.</p> <p><b>References:</b></p> <ol style="list-style-type: none"><li>1. A. Balieiro, P. Yoshioka, K. Dias, C. Cordeiro and D. Cavalcanti," Adaptive spectrum sensing for cognitive radio based on multi-objective genetic optimisation", ELECTRONICS LETTERS ,Vol. 49 No. 17, 2013.</li><li>2. Alessandra Cavarra, Thierry Jeron, Alan Hartman "Using UML for Automatic Test Generation", ISSTA,2002.</li><li>3. Ashalatha Nayak and Debasis Samanta "Automatic Test Data Synthesis Using UML Sequence Diagram", Journal of Object Technology, vol. 09, no. 2, March-April, pp. 75-104, 2010.</li><li>4. A.V.K Shanthi and G. Mohan Kumar "A Heuristic Technique for Automated Test Cases Generation for UML Activity Diagram", JCSA, vol. 4, no. 2, pp. 75-86, 2012.</li><li>5. A.V.K Shanthi and Dr. G. Mohan Kumar, "A Novel Approach for Generating Test Cases Using Tabu Search Algorithm", UNIASCIT, vol. 2, no. 2, pp. 222-224, 2012.</li><li>6. A.V.K.Shanthi and G. Mohan. Kumar, "Automated Test Cases Generation from UML Sequence Diagram", IJSCA, vol. 41, Singapore, pp. 83-89, 2012.</li><li>7. A.V.K.Shanthi and Dr. G. Mohan Kumar "Automated Test Cases Generation For Object Oriented Software", Indian Journal of Computer Science and Engineering, vol. 2, no. 4, Aug-Sep, pp. 543-546, 2011.</li><li>8. A.V.K.Shanthi and G. Mohan Kumar, "A Heuristic Approach for Automated Test Cases Generation for Sequence Diagram Using Tabu Search Algorithm", European Journal of Scientific Research, vol. 85, no. 54, September, pp. 534-540, 2012.</li><li>9. Aysh Alhroob, Keshav Dahal, Alamgir Hossain," Automatic Test Cases Generation from Software Specification", ISE Journal, vol. 4, issue 1, pp. 109-121, 2010.</li><li>10. Deb, K. "Multi-Objective Optimization Using Evolutionary Algorithms". Reading, John Wiley &amp; Sons, Ltd, Reprinted April 2002.</li><li>11. Fonseca C M, Fleming P J, "Multi-objective optimization and multiple constraints handling with evolutionary algorithms-Part I: a unified formulation", IEEE Transactions on systems, Man and cybernetics, vol. 28, pp. 26-37, 1998.</li><li>12. Gu Lei, Yu-geng Xi, "A Parellel Multi-Objective Genetic Local Search Algorithm ", Control Engineering of China, Shenyang, vol. 16, pp. 738- 742, Nov. 2009</li><li>13. Heidi A. Taboada, Jose F. Espiritu, and David W. Coit," MOMS-GA: A Multi-Objective Multi-State Genetic Algorithm for System Reliability Optimization Design Problems", IEEE TRANSACTIONS ON RELIABILITY, VOL. 57, NO. 1, MARCH 2008.</li><li>14. Hitesh Tahbilda and Bichitra Kalita, "Automated Software Test Data Generation: Direction of Research", IJCSSE Survey, vol. 2, no. 1, Feb, PP. 99- 120, 2011.</li><li>15. Huang Wei, Fengli, He Zijun, Cui Junzhao, Zhang Li," Transmission Network Planning With N-1 Security Criterion Based On Improved Multi-objective Genetic Algorithm", IEEE( 978-1-4577-0365-2) , pp-1250-1254,2011.</li></ol>		



	<div>16. L.C.Braind, Y.Labiche, She, "Automating Regression Test Selection Based on UML designs", Information and Software Technology, vol. 51, issue 1, January, pp. 16-30, 2009.</div> <div>17. M. Prassana and K.R. Chandran ,“Automatic Test Cases Generation for UML Object Diagrams Using Genetic Algorithm”, Int.J.Advance.Soft Comput. Appl., vol. 1. No. 1, July, pp. 19-32, 2009.</div> <div>18. Manoj Kumar, Dr. Mohammad, Gyanendra K.Gupta, Amarjeet Singh ,“An Efficient Algorithm for Evaluation of Object Oriented Models”, IJCA, vol. 24, no. 8, June, pp. 11-15, 2011.</div> <div>19. Mr. Kashif Waqas1 Dr. Rauf Baig1and Dr. Shahid Ali2,” Feature Subset Selection Using Multi-Objective Genetic Algorithms”, IEEE, ISSN- 978-1-4244-4873-9,2009.</div> <div>20. Pakinam N.Boghdady, Nagwa L.Badr, Mohamed Hashen and Mohnamed F.Tolba,“Test Case Generation and Test Extraction Techniques”, IJECS, vol. 11, no. 3, June, pp. 87-94, 2011.</div> <div>21. Puneet Patel and Nitin N. Patil ,“Test Case Formation Using UML Activity Diagram”, World Journal of Science and Technology, vol. 2, no. 3, April, pp. 57-62, 2012.</div> <div>22. Rakesh Kumar, Surjeet Singh, Girdhar Gopal,” Automatic Test Case Generation Using Genetic Algorithm”,IJSCR, Volume 4, Issue 6, June, pp-1135-1141, 2013.</div> <div>23. Ranjit Swain, Vikas Panthi, Prafulla Kumar Behera and Durga Prasad Mohapatra , “ Automatic Test Case Generation from UML Sate Chart Diagram”, IJCA, vol. 42, no. 7, March, pp. 26-36, 2012.</div> <div>24. Ranjit Swain, Vikas Panthi, Prafulla Kumar Behera and Durga Prasad Mohapatra,“Test Case Generation Based on State Machine Diagram”, IJCIS, vol. 4, no. 2, Feb, pp. 99-110, 2012.</div> <div>25. Swati, Thilian, Pallavi Pandit, “A Survey of UML Based Approaches to Testing”, International Journal of Computational Engineering Research, vol. 2, issue 5, September, pp. 1396-1401, 2012.</div> <div>26. Santosh Kumar Swain, Durga Prasad Mohapatra and Rajib Mall ,“Test Case Generation Based on State and Activity Diagram”, Journal of Object Technology, vol. 9, no. 5, pp. 1-27, 2010.</div> <div>27. Santosh Kumar Swain and Durga Prasad Mohapatra “Test Case Generation from Behavioral UML Models”, International Journal of Computer Applications, vol. 6, no. 8, September, pp. 5-11, 2010.</div> <div>28. Sangeeta Sabharwal, Ritu Sibal and Chayanika Sharma,“Applying Genetic Algorithm for Prioritization of Test Cases Scenarios Derived from UML Diagrams”, International Journal of Computer Science Issue,Vol. 8, issue 3, No. 2, , pp. 433-444, 2011.</div> <div>29. Srinivas N, Deb K, “Multiobjective optimization using nondominated sorting in genetic algorithms”, Evolutionary Computation, vol. 2, pp. 221-248, 1994.</div> <div>30. V. Chankong and Y. Haimes, “Multi-objective decision making theory and methodology”. New York: North-Holland, 1983.</div> <div>31. Vikas Panthi, Durga Prasad Mahapatra,” Automatic Test Case Generation using Sequence Diagram”, Proceeding of ICADC, AISC 174, pp.277-284, 2013.</div> <div>32. V. Mary Sumalatha, G.S.V. P.Raju,” Object Oriented Test Case Generation Technique Using Genetic Using Genetic Algorithms”, International Journal of Computer Application(0975-8887), Volume61-No.20,January 2013.</div>					
	<table><tr><td><b>Authors:</b></td><td><b>Ribata Najoua, Aknin Noura, El Kadiri Kamal Eddine</b></td></tr><tr><td><b>Paper Title:</b></td><td><b>Raise Performance in Mobile Cloud-Based Learning</b></td></tr></table>	<b>Authors:</b>	<b>Ribata Najoua, Aknin Noura, El Kadiri Kamal Eddine</b>	<b>Paper Title:</b>	<b>Raise Performance in Mobile Cloud-Based Learning</b>	
<b>Authors:</b>	<b>Ribata Najoua, Aknin Noura, El Kadiri Kamal Eddine</b>					
<b>Paper Title:</b>	<b>Raise Performance in Mobile Cloud-Based Learning</b>					
	<p><b>Abstract:</b> This paper will describe the research method used for the design of the Collaborative as a Service (CaaS). Which is to provide a novel approach to raise performance in mobile Cloud-Based Learning, by a constructive approach of task allocation in mobile cloud-based learning, using Kolb’s Learning Style (KLS) to accurately allocate responsible tasks to each learner in order to raise collaborative learning performance? We employ a Genetic Algorithm (GA) to facilitate the task allocation.</p> <p><b>Keywords:</b> Collaborative as a Service, Genetic Algorithm, Kolb’s Learning Style, Mobile Cloud-Based Learning, Task allocation problem.</p> <p><b>References:</b></p> <div>1. Mell, P &amp; Grance, T 2009, ‘Draft NIST Working Definition of Cloud Computing. National Institute of Standards and Technology’.</div> <div>2. Vouk, M. A 2008, ‘Cloud computing — issues, research and implementations’, Journal of Computing and Information Technology, vol. 16, no. 4, pp. 235-246.</div> <div>3. Rimal, B. P, Choi, E &amp; Lumb, I 2009, ‘A taxonomy and survey of cloud computing systems’, 5th International Joint Conference on INC, IMS and IDC, Seoul, Korea, August 2009.</div> <div>4. Dagon, D, Martin, T &amp; Starner, T 2004, ‘Mobile phones as computing devices: the viruses are coming’, IEEE Transaction on Pervasive Computing, vol. 3, no. 4, pp. 11-15.</div> <div>5. Rao, N. M 2010, ‘Cloud Computing Through Mobile-Learning’, International Journal of Advanced Computer Science and Applications, vol. 1, no. 6, pp. 42-47.</div> <div>6. Ribata, N, Arif, A. ; Aknin, N, El Kadiri, K. E 2013, ‘Mobile Cloud-Based Learning: A Comprehensive Survey, Research Issues and Future Directions’, MAROC’2013 : Workshop on Models and Algorithms for Reliable and Open Computing, Tetouan/Morocco, December 16, 2013.</div> <div>7. Sharples, M, Arnedillo-Sanchez, I, Milrad, M &amp; Vavoula, G 2009, ‘Mobile learning: small devices, big issues’, Technology-Enhanced Learning, Springer, pp. 233-249.</div> <div>8. Sharma, S. K &amp; Kitchens, F. L 2004, ‘Web Services Architecture for M- Learning’, Electronic Journal on e-Learning, vol. 2, no. 1, pp. 203-216.</div> <div>9. Kim, S.H, Mims, C &amp; Holmes, K.P 2006, ‘An introduction to current trends and benefits of mobile wireless technology use in higher education’, Association for the Advancement of Computing in Education Journal, vol.14, no.1, pp. 77-100.</div> <div>10. Vanska, R 2004, ‘Mobile learning in Europe: A multidisciplinary approach’, Proceedings of the 12th European Conference and Specialist Trade Fair for Educational and Information Technology, Karlsruhe, Germany, 2004.</div> <div>11. Koole, M, McQuilkin, J. L &amp; Ally, M 2010, ‘Mobile Learning in Distance Education: Utility or Futility’, The Journal of Distance Education, vol. 24, no. 2, pp. 59-82.</div> <div>12. Ting, R. Y. L 2005, ‘Mobile learning: current trend and future challenges’, 5th IEEE International Conference on Advanced Learning Technologies (ICALT), Kaohsiung, Taiwan, July 2005.</div> <div>13. Zawacki-Richter, O, Brown, T &amp; Delport, R 2009, ‘Mobile learning: from single project status into the mainstream’, European Journal of Open, Distance and E- Learning, vol. 2009, no. 22.</div> <div>14. Sultan, N 2010, ‘Cloud computing for education: A new dawn?’ International Journal of Information Management, vol. 30, no. 2, pp. 109-116.</div> <div>15. Liao, J &amp; Wang, M 2011, ‘A collaborative learning system based on cloud and e-commerce’, 8th IEEE International Conference on e-Business Engineering, Beijing, China, October 2011.</div> <div>16. Chua, F. F &amp; Tay, E. S 2012, ‘Developing virtual learning environment 2.0 using web services approach’, 12th IEEE International Conference on Advanced Learning Technologies, Rome, Italy, July 2012.</div> <div>17. Schwabe, G, Goth, C &amp; Frohberg, D 2005, ‘Does team size matter in mobile learning’, International Conference on Mobile Business (ICMB), July 2005.</div> <div>18. Feldmann, B 2006 ‘Group Types in E-Learning Environments-Study Team, Working Team and Learning Team’, 7th International Conference on Information Technology Based Higher Education and Training (ITHET). Ultimo, Australia. July 2006.</div>					
5.		21-26				

	<ol style="list-style-type: none"> <li>19. Wu, T, Liu, D &amp; Bi, X 2010, 'Team learning orientation and conflicts influence team performance in different task difficulties', IEEE International Conference on Advanced Management Science (ICAMS), Chengdu, China, July 2010.</li> <li>20. Koh, E &amp; Lim, J 2012, 'Too Early, Too Bad: Uncovering and Understanding the Initial Participation Paradox in Technology-Mediated Learning Teams', IEEE Transactions on Professional Communication, vol. 55, no. 1, pp. 55-84.</li> <li>21. Kolb, A. Y &amp; Kolb, D, A 2005 'Learning styles and learning spaces: enhancing experiential learning in higher education', Academy of Management Learning and Education, vol. 4, no. 2, pp.193-212.</li> <li>22. Kolb, A.Y &amp; Kolb, D. A 2005, Bibliography of research on experiential learning theory and the Learning Style Inventory, Department of Organizational Behavior, Weatherhead School of Management, Case Western Reserve University, Cleveland, OH.</li> <li>23. Kolb, D. A 1984, Experiential learning: experience as a source of learning and development. Upper Saddle River, NJ:Prentice Hall.</li> <li>24. Kolb, D. A 1999, Learning Style Inventory, Hay/Mcber Training Resource Group, Boston, USA.</li> <li>25. Belbin, R 1993, Team Roles at Work, Butterworth Heinemann.</li> <li>26. Loo, R 2004, 'Kolb's learning styles and learning preferences: is there a linkage', Educational Psychology, vol. 24, no. 1, pp. 99-108.</li> <li>27. Raschick, M, Maypole, D. E &amp; Day, P. A 1998, 'Improving field education through Kolb's learning theory', Journal of Social Work Education, vol. 34, no. 1 pp. 34-42.</li> <li>28. Jones, C, Reichard, C &amp; Mokhtar, K 2003, 'Are students' learning styles discipline specific?', Community College Journal of Research and Practice, vol. 27, no. 5, pp. 363-375.</li> <li>29. Thiele, J. E 2003, 'Learning patterns of online students', Journal of Nursing Education, vol. 42, no. 8, pp. 364-367.</li> <li>30. Terrell, S. R &amp; Dringus, L 2000, 'An investigation of the effecti of learning style on student success in an online learning environment', Journal of Educational Technology Systems, vol. 28, no. 3 pp. 231-238.</li> <li>31. Richmond, A. S &amp; Cummings, R 2005, 'Implementing Kolb's learning styles into online distance education', International Journal of Technology in Teaching and Learning, vol. 1, no. 1, pp. 45-54.</li> <li>32. Vidyarthi, D. P, Tripathi, A. K, Sarker, B. K and Rani, K 2003 'Comparative study of two GA based task allocation models in distributed computing system', The 4th International Conference on Parallel and Distributed Computing, Applications and Technologies (PDCAT).</li> <li>33. Page, A. J, Keane, T. M and Naughton, T. J 2010, 'Multi-heuristic dynamic task allocation using genetic algorithms in a heterogeneous distributed system', Journal of Parallel Distributed Computing, vol. 70, no. 7, pp. 758-766.</li> <li>34. Fernandez, J and Basavaraju 2012 'Task allocation model in globally distributed software projects', the 7th IEEE International Conference on Global Software Engineering, Rio Grande do Sul, Brazil, August 2012.</li> <li>35. Holland, J. H 1992 Adaptation in Natural and Artificial Systems, MIT Press, Cambridge, MA, USA.</li> <li>36. Andrew, J. P, Thomas, M. K &amp; Thomas, J. N 2010 'Multi-heuristic dynamic task allocation using genetic algorithms in a heterogeneous distributed system', Journal of Parallel Distributed Computing, vol. 70, pp. 758-766.</li> </ol>	
--	--	--