

## Curriculum Vitae

1. **Full Name:** Dr. SUSMITA DAS
2. **Address for Correspondence:** Associate Professor,  
Dept. of Electrical Engineering,  
National Institute of Technology,  
Rourkela-769008, Orissa, India.  
Telephone No: +91-661-2462402 (O)  
+91-661-2472903 (R)  
+91-9438539606 (M)  
Fax: +91-661-246 2999

### 3. Membership/Fellowship:

- 1) Senior Member, IEEE, USA and member, IEEE Communication Society.
- 2) Fellow, Institution of Electronics and Telecom Engineers (IETE), India.
- 3) Life Member of Indian Society of Technical Education (ISTE), India.
- 4) Fellow, Institution of Engineers (IE), India.

### 4. Research Areas:

Wireless Communication (Advanced 4G & 5G Technologies, MIMO, OFDM, Co-operative Relaying, UWB Short Range Applications, Spectrum Sensing in Cognitive Radio, Heterogeneous Wireless Network), Digital and Adaptive Signal Processing, Application of Soft Computing Techniques, Development of Algorithms for Signal Processing and Communication Applications.

### 5. Courses Taught:

Communication System Principles, Digital Signal Processing, Signals & Systems, Digital Communication, Wireless Communication, Mobile Radio Channel, Adaptive Signal Processing.

### 6. Thesis Supervised (PhD):

Student Name	Title of Thesis
Kala Praveen Bagadi	On Development of Some Soft Computing Based Multiuser Detection Techniques for SDMA–OFDM Wireless Communication System

### 7. List of current PhD Research Scholars:

Student Name	Broad Area of Research
Kiran Kumar Gurrala	Power allocation for cooperative wireless networks
Deepak Kumar Rout	Wireless and Personal Communication in Body Area network
Deepa Das	Spectrum sensing and security issues in Cognitive Radio networks
Chaudhuri Manoj Kumar Swain	Cellular Design and optimization for QOS in Wireless Communication network (Wi-Max)
Subhankar Chakrabarti	Statistical Analysis, Network Design and Performance Evaluation of Ultra-Dense Heterogeneous Wireless Network
Manas Rakshit	Real-time medical signals analysis through wireless telemetry based on UWB-WBAN system

**8. M.Tech. (Res) Thesis Supervised:**

2010	
Bikramaditya Das	Performance Enhancement of Ultra Wideband WPAN using Narrowband Interference Mitigation Techniques.
Rudra Narayan Dash	Fault Diagnosis in Induction Motor Using Soft Computing Techniques.
2009	
Srabani Mohapatra	A New Approach for Performance Improvement of OFDM System using Pulse Shaping.

**9. Thesis Supervised (M.Tech.):**

2015	
Rati Dillip Kumar Jalan	Improved Receiver Design For WBAN Employing UWB Based MIMO Scheme
Tatha Divya	Performance Analysis of Hybrid Decode- Amplify-Forward (HDAF) Relaying for Improving Security in Cooperative Wireless Network
B. Prithviraj Kumar	Proposed Technique for Cooperative Spectrum Sensing Optimization through Maximizing the Network Utility and Minimizing the Error Probability
Bishnu Prasad Sahoo	Adaptive Mac Protocol Design For Energy Efficient And Reliable Wban Link
Jhasketan Naik	Analysis of spectrum sensing schemes through TMS320c6713DSK for Cognitive Radio networks
Lipsa Priyadarshini	Development of interference mitigation schemes in 4G using Smart Antennas
2014	
Tiwari, R	Performance study of routing protocols in a mobile patient monitoring network.
Tera, A D	PSO based power allocation for single and multirelay AF cooperative network.
Samal, C	Application of fractional frequency reuse technique for cancellation of interference in heterogeneous cellular network
S Shrivastava	Dynamic-double-threshold energy detection scheme for spectrum sensing under noise uncertainty in cognitive radio systems.
2013	
Pal , Ankit Jai Shankar	Performance Characteristics Evaluation for Cooperative Communication.
Chakrabarti, Subhankar	Study the Effect of Co-Channel Interference in STC MIMO-OFDM System and Mitigation of CCI using Beamforming Technique
Mahobe, Medhavi	UWB Radio Wireless Communication System Design for Railway Tunnels.
Nayak, Ashish Kumar	Performance Enhancement of DS-UWB Short Range Communication System Using Equalization Techniques.
2012	
Choudhury Sasmita Das	MB-Pulsed-OFDM System using Discrete Wavelet Packet Transform for Short Range Indoor Environment
Sridhar Kondabathini	Wireless Image Transmission over Space-Time Coded MIMO-OFDM System using Punctured Turbo Codes.
Narla Dileep	Localization for an UWB Radio Based Human Motion Tracking System.



Shafeeque I.	A DS UWB System for Wireless Telemedicine.
2011	
Naga Durga Rajesh Boyina	Channel estimation and comparison of fading channels in wireless OFDM based systems
Surykanth Tiwari	Co-Channel Interference Suppression using Adaptive Beam Forming Approach in MIMO-OFDM Systems.
M. V. Chandra Mouli	Narrow Band Interference Mitigation in Multiband OFDM UWB WPAN System Using Adaptive Notch Filter.
Vijaya Kumar Surasura	Performance comparison of Various Multiuser Detection Schemes in MIMO-OFDM Systems.
2010	
Brahmaji Tark	A study of channel estimation techniques in MIMO-OFDM systems in wireless applications.
Paramananda Sharma	Development of neural beamforming algorithms for adaptive antenna array.
Atul Kumar Gupta	Performance analysis of multiband ofdm in a uwb wpan system using IEEE 802.15.3a standard.
2009	
Manidipa Acharya	Parallel Interference Cancellation scheme in DS-SS receivers
A. Kabir Das	Performance analysis of turbo coded OFDM system in wireless communication
Srinivas Ollala	An efficient timing & Frequency synchronisation in OFDM based 802.11a WLAN System.
Sanjay Kumar Mohanty	ICI Power Reduction in OFDM System
2008	
Shankar Ram	A study of adaptive beam forming technique using smart antenna for mobile communication
Anil Ku. Pattanayak	Channel estimation in OFDM System
2007	
Smita Rani Parija	Multi-user detection in CDMA system using neural network approach
Prakash Ku. Ta	Blind channel estimation technique using radial basis function network
2006	
G. Arun kumar	An approach to equalization of digital communication channel using adaptive intelligent networks
2005	
Debajoti Mishra	A neural approach based on Fuzzy accelerated activation function to system identification

#### 10. Paper Published in SCI & Scopus indexed Journals:

- 1) Deepa Das and Susmita Das, "A survey on spectrum sensing for cognitive radio", *Wireless and Personal Communication*, Springer (Accepted).
- 2) Deepak Kumar Rout, Kiran Kumar Gurralla and Susmita Das, Performance of amplify forward and decode forward cooperative strategies for body surface communications in UWB Body Area Networks" *International Journal of Communication System*, Wiley.
- 3) Kiran Kumar Gurralla and Susmita Das, "Maximized Channel Capacity Based Power Allocation Technique for Multi Relay Hybrid Decode-Amplify-Forward Cooperative Network" *Wireless Personal Communication* (Springer) (Accepted with manuscript id WIRE-D-14-0137).



- 4) Deepak Kumar Rout and Susmita Das, "Narrowband Interference Mitigation in UWB BAN using Hermite Pulse", *International Journal of Electronics, Taylor and Francis* (Accepted manuscript id TETN-2014-0691.R2)
- 5) Kiran Kumar G, Susmita Das, "Hybrid Decode Amplify Forward Relaying in Distributed Alamouti Coded Cooperative Network", *International Journal of Electronics, Taylor and Francis*, 102(5), 725-741, 2015. DOI:10.1080/00207217.2014.938252
- 6) Deepak Kumar Rout and Susmita Das, "Interference Mitigation in Wireless Body Area Networks Using Modified and Modulated MHP" *Wireless and Personal Communication, Springer*, 77(2):1343-1361, 2014. DOI: 10.1007/s11277-013-1584-z.
- 7) Kala Praveen Bagadi and Susmita Das, "Multiuser Detection in SDMA-OFDM Wireless Communication System Using Complex Multilayer Perception Neural Network", *Wireless Personal Communication, Springer*, 77(1), 21-39, 2013. DOI: 10.1007/s11277-013-1492-2
- 8) Kala Praveen Bagadi and Susmita Das, "Minimum Symbol Error Rate Multiuser Detection Using an Effective Invasive Weed Optimization for MIMO/SDMA – OFDM System" *International Journal of Communication Systems, Wiley*, 27(12), 3837–3854, 2013. DOI: 10.1002/dac.2579
- 9) Kala Praveen Bagadi and Susmita Das, "Design of an Efficient Complex Radial Basis Function Model for Multiuser Detection in an SDMA – OFDM System", *IET Communications*, 7(13), 2013, DOI: 10.1049/iet-com.2012.0688.
- 10) Kala Praveen Bagadi and Susmita Das, "Neural network-based multiuser detection for SDMA–OFDM system over IEEE 802.11n indoor wireless local area network channel models" *International Journal of Electronics, Taylor and Francis Publications*, 100(10), 1332-1347, 2013 DOI: 10.1080/00207217.2012.743085.
- 11) Kala Praveen Bagadi and Susmita Das, "Neural Network Based Adaptive Multiuser Detection Schemes in SDMA-OFDM System for Wireless Application," *Journal of Neural Computing and Applications, Springer*, 23(3-4), 1071-1082, 2012 DOI: 10.1007/s00521-012-1033-z.
- 12) Susmita Das, "A novel concept of embedding orthogonal basis function expansion block in a neural equalizer structure for digital communication channel" *International Journal on Neural Computing & Applications, Springer*, 21(3), 1-8, 2010, DOI: 10/007/s00521-010-0464-7.
- 13) Susmita Das, "Performance of fuzzy logic-based slope tuning of neural equaliser for digital communication channel" *International Journal on Neural Computing & Applications, Springer*, pp. 1-10, 21 October 2010, DOI: 10/007/s00521-010-0462-9.
- 14) Deepa Das and Susmita Das, "Primary User Emulation Attack in Cognitive Radio Networks: A Survey", *International Journal of Computer Networks and Wireless Communications (IJCNWC)*, 3(3), 2013.
- 15) Bagadi K Praveen, Susmita Das and Sridhar K. "Image Transmission over Space Time Coded MIMO-OFDM System with Punctured Turbo Codes," *International Journal of Computer Applications(IJCA)*, 51(15), 1-6, 2012 DOI: 10.5120/8115-1734
- 16) Kala Praveen Bagadi and Susmita das, "Comparative Analysis of Multiuser Detection Techniques in SDMA-OFDM System over the Correlated MIMO Channel Model for IEEE 802.16n," *International Journal of Information Engineering (IJIE)*, 3(1), 18-24, 2013.
- 17) Kala Praveen Bagadi and Susmita Das, "Complex multi layered perceptron model based receiver design for multiuser detection in wireless SDMA-OFDM system", *Global Journal of Technology and Optimization, Malaysia*, ISSN: 1985-9406, 2013 DOI: 10.1063/1.4768992
- 18) Kiran Kumar Gurralla and Susmita Das, "Impact of Relay Location on the performance of Multi-Relay Cooperative Communication," *International Journal of Computer Networks and Wireless Communications (IJCNWC)*, 2(2), 226-231, 2012.
- 19) Susmita Das, "A Novel Transform Domain based Hybrid Recurrent Neural Equaliser for Digital Communication Channel", *Electronic Engineering and Computing Technology, Book Series: Lecture Notes in Electrical Engineering (LNEE)*, Springer, 60, 129-139, 2010.



- 20) Susmita Das, Kala Praveen Bagadi, and Srabani Mohapatra, "Performance Improvement of OFDM System by Peak to Average Power Reduction through Pulse Shaping Technique," *ICTACT Journal on Communication Technology*, 1(4), 202-206, 2010.
- 21) Susmita Das, "Development of Hybrid ANN Structure for Performance Enhancement of Adaptive Channel Equalisers in Communication Systems", *International Journal of Computing & Mathematical Applications (IJCMA)*, 2(1-2), 215-227, 2008.
- 22) Bikramaditya Das, Susmita Das, "Performance Analysis of Ultra wideband Receivers for high data rate Wireless Personal Area Network System", *International Journal on Applications of Graph Theory in Wireless Ad hoc Networks and Sensor Networks*, 2(1), 53-61, 2010.
- 23) Susmita Das, Bikramaditya Das, "Efficacy of Multiband OFDM Approach in Low to High Data Rate Ultra Wideband WPAN Physical Layer Standard using Realistic Channel Models", *International Journal of Computer Applications (IJCA)*, 2(2), 81-87, 2010.
- 24) Susmita Das, Kala Praveen Bagadi, "MIMO-OFDM Channel Estimation Using Pilot Carriers", *International Journal of Computer Applications (IJCA)*, 2(3), 81-88, 2010.
- 25) Susmita Das and Bikramaditya Das, "Multiple Narrowband and Wideband Interference Suppression in Transmitted Reference Wavelet based Pulse spectral shaping for UWB communication system", *International Journal of Computer Applications (IJCA)*, 2(2), 88-92, 2010.
- 26) Susmita Das, Bikramaditya Das, "A Comparison Study of Time domain Equalization Technique using Ultrawide band Receivers Performance for high data rate WPAN system", *International Journal of Computer Networks & Communications (IJCNC)*, 2(4), 2010
- 27) R.Dash, B.Subudhi, S.Das and A.Mishra, "Neural network and wavelet techniques for detection of interturn short circuit fault in stator winding of an induction motor," *International Journal on power system optimization and control*, 1(2), 57-63, 2009.
- 28) Susmita Das, "Development of Hybrid ANN Structure for Performance Enhancement of Adaptive Channel Equalizers in Communication Systems", *International Journal of Computing & Mathematical Applications*, 2(1-2), 215-227, 2008.

#### 11. Publication in International and National Conference Proceedings:

- 1) Chaudhuri Manoj Kumar Swain and Susmita Das, "Development of an empirical Pathloss models for a deployed 2.63 GHz wimax network in a rural environment", 2015 IEEE Power, Communication and Information technology conference (PCITC), Bhubanswar (Accepted).
- 2) Deepak Kumar Rout and Susmita Das, "Hybrid Relaying for Sensor to External Communication in Multi Relay Body Area Networks," in proceedings of 2015 IEEE International Conference on Signal Processing, Informatics, Communication and Energy Systems (IEEE SPICES), Kozhikode, 19-21 Feb 2015.
- 3) Rati Dilip Kumar Jalan, Deepak Kumar Rout and Susmita Das, "Performance Enhancement of MIMO/UWB based Wireless Body Area Network" 2015 IEEE conference Global conference on Communication Technologies (GCCT2015).
- 4) Bishnu Prasad Sahoo and Susmita Das, "Peer to peer topology based energy harvesting protocol for WBAN" 2015 IEEE conference Global conference on Communication Technologies (GCCT2015).
- 5) T Divya, K K Gurralla, and Susmita Das "Performance analysis of hybrid decode amplify forward relaying for improving security in cooperative wireless network", 2015 IEEE conference Global conference on Communication Technologies (GCCT2015).
- 6) B Prithviraj Kumar, Deepa Das, and Susmita Das, "Cooperative spectrum sensing optimization through maximizing the network utility and minimizing the error probability" 2015 IEEE conference Global conference on Communication Technologies (GCCT2015).
- 7) Deepak Kumar Rout and Susmita Das, "Hybrid Relaying for Sensor to External Communication in Multi Relay Body Area Networks," in proceedings of 2015 IEEE International Conference on Signal



- Processing, Informatics, Communication and Energy Systems (IEEE SPICES), Kozhikode, 19-21 Feb 2015
- 8) Deepa Das and Susmita, "Interference-aware power allocation in soft decision fusion (SDF) based cooperative spectrum sensing," in proceedings of 2014 Annual IEEE India Conference (INDICON), pp.1,6, 11-13 Dec. 2014
  - 9) Kiran Kumar Gurralla, Susmita Das, "Minimized SER based power allocation for multi HDAF relay cooperative network using Differential evolution algorithm", in proceedings of 2014 Annual IEEE India Conference (INDICON), Dec 2014.
  - 10) Deepak Kumar Rout and Susmita Das, "Multiple Narrowband Interference Mitigation in UWB Body Area Networks for Body Surface Communications," 2014 International Conference on Medical Imaging, m-Health and Emerging Communication Systems (MedCom), 182-188, Greater Noida, 7-8 Nov 2015
  - 11) Deepak Kumar Rout and Susmita Das, "Performance of MHP pulse based TH BPSK in presence of strong narrowband interference in UWB Body Area Networks," India Conference (INDICON), Annual IEEE , pp.1,6, 13-15 Dec. 2013.
  - 12) Deepa Das and Susmita Das, "A Cooperative Spectrum Sensing Scheme Using Multiobjective Hybrid IWO/PSO Algorithm in Cognitive Radio Networks," IEEE sponsored ICICT 2014, Ghaziabad, 7<sup>th</sup>-8<sup>th</sup> Feb, 2014.
  - 13) Deepa Das, Susmita Das, "Eigenvalue Detection Based Method to Mitigate PUEA in Cognitive Radio Networks", IEEE ANTS 2013, Chennai, India, 15<sup>th</sup>-18<sup>th</sup> Dec 2013.
  - 14) Kiran Kumar G, Susmita Das, "Study Channel Capacity for Hybrid Decode Amplify Forward relaying in Distributed Alamouti Coded Cooperative Networks", IEEE international conference on Control, Communication and Circuits (CCube), Dec 2013, Bangalore.
  - 15) Kiran Kumar Gurralla, and Susmita Das "Performance study of hybrid decode-amplify-forward (HDAF) scheme in distributed Alamouti coded cooperative network," *Advances in Computing, Communications and Informatics (ICACCI), International Conference on* , vol., no., pp.271,276, 22-25 Aug. 2013.
  - 16) Deepak Kumar Rout and Susmita Das, "MHP for Narrowband Interference Mitigation in High Data Rate UWB Body Area Networks", Proceedings of *IEEE Conference on Information and Communication Technologies (ICT 2013)* Kanyakumari, India, April, 2013
  - 17) Kala Praveen Bagadi and Susmita Das, "RBF Network Based Receiver Design for Multiuser Detection in SDMA-OFDM System" Proceedings of *Annual IEEE India Conference (INDICON)*, 7-9 December, 2012, Rajagiri School of Engineering & Technology, Kochi, Kerala, India.
  - 18) Susmita Das and Kala Praveen, "Complex Multi Layered Perceptron Model Based Receiver Design for Multiuser Detection in SDMA-OFDM System," Proceedings of *the sixth Global Conference on Power Control & Optimization*, Las Vegas, USA, 6-8, August 2012.
  - 19) Susmita Das, and Bikramaditya Das, "Suppression of Narrowband Interference in impulse radio based high data rate UWB WPAN communication system using NLOS Channel Model," Proceedings of *World Academy of Science, Engineering and Technology* (Print ISSN: 2010-376X, Electronic ISSN: 2010-3778), Issue 77, pp. 668-672, June 2011. Paris, France.
  - 20) Susmita Das, and Kala Praveen Bagadi, "Comparative Analysis of Various Multiuser Detection Techniques in SDMA-OFDM System Over the Correlated MIMO Channel Model for IEEE 802.16n," Proceedings of *World Academy of Science, Engineering and Technology* (Print ISSN: 2010-376X, Electronic ISSN: 2010-3778), Issue 77, pp. 663-667, June 2011, Paris, France.
  - 21) Susmita Das and Kala Praveen Bagadi, "Neural network based multiuser detection techniques in SDMA-OFDM system," Proceedings of *Annual IEEE India Conference (INDICON)*, pp. 01-04, December 16-18, 2011, BITS Pilani Campus, Hyderabad.
  - 22) Kala Praveen Bagadi, and Susmita Das, "Comparison of Neural based Multiuser Detection Techniques for SDMA based Wireless Communication System", Proceedings of *IEEE SCES 2012* MNNIT, Allahabad, India during March 16-18, 2012.
  - 23) Kala Praveen Bagadi, and Susmita Das, "Neural network based multiuser detection techniques in SDMA OFDM system," Proceeding of *Annual IEEE India Conference (INDICON)*, 2011 Print ISBN: 978-1 4577-1110-7 , pp. 01-04, Decem. 2011.
  - 24) Susmita Das, and Kala Praveen Bagadi, "Comparative Analysis of Various Multiuser Detection Techniques in SDMA-OFDM System Over the Correlated MIMO Channel Model for IEEE



- 802.16n,” Proceedings of *World Academy of Science, Engineering and Technology*, ISSN: 2010-3778), Issue 77, pp. 663-667, June 2011, Paris, France.
- 25) Susmita Das, and Bikramaditya Das, “Suppression of Narrowband Interference in impulse radio based high data rate UWB WPAN communication system using NLOS Channel Model,” Proceedings of *World Academy of Science, Engineering and Technology (Print ISSN: 2010 376X, Electronic ISSN: 2010-3778)*, Paris, June 2011, Issue 77, pp. 668-672.
  - 26) Susmita Das, and Kala Praveen Bagadi, “Low Complexity Near Optimal Multiuser Detection Scheme for SDMA-OFDM System,” Proceeding of *IEEE International Conference on Devices and Communications (ICDeCom)*, Print ISBN: 978-1-4244-9189-6, Meshra, Feb 2011, pp. 01 05.
  - 27) Susmita Das, Bikramaditya Das, and S. Tiwari “Performance Study of Discrete Wavelet Packet Based MB-OFDM System for Short Range Indoor Wireless Environment,” Proceeding of *IEEE International Conference on Devices and Communications (ICDeCom)*, Print ISBN: 978-1 4244-9189-6, Meshra, 24-25 Feb 2011, pp. 01–05.
  - 28) Susmita Das, and Kala Praveen Bagadi, “Channel Estimation and Multiuser Detection Techniques in SDMA-OFDM System,” Proceeding of *International Conference on Information, Signal and Communication (ICISC-2011)*, Ahmedabad, Feb. 2011.
  - 29) R.Dash, B.Subudhi, S.Das, “Induction motor stator inter-turn fault detection using wavelet transform technique,” Proceeding of *IEEE ICIIS 2010, N.I.T, Suratkal*, Aug. 2010.
  - 30) Susmita Das, Bikramaditya Das, “Performance Evaluation of MB-OFDM UWB WPAN System based on Channel Estimation Technique using Realistic Channel Models”, Proceeding of *International Conference On Contours of Computing Technology*, Mumbai, India, *SPRINGER*, pp.118-122, Mar.2010.
  - 31) Bagadi. K.Praveen, Susmita Das, “Training based channel estimation for SISO/MIMO OFDM systems”, Proceeding of *National Conference on Emerging Technological Trends (NCETT 2010)*, Bhopal, India, ISBN-978-81-89107-92-5, pp.293-297, Mar.2010.
  - 32) Susmita Das, Bikramaditya Das, “RAKE-MMSE time domain equalizer for high data rate UWB communication system,” Proceeding of *IEEE International conference on Control, Communication and Automation (INDICON-09)*,
  - 33) Susmita Das, Bikramaditya Das, " Time domain equalization technique using RAKE-MMSE receivers for high data rate UWB communication system," Proceeding of *IEEE International Conference on Networks & Communications (NETCOM-09)*, Chennai, India, ISBN:978-0 - 7695-3924-9/09, pp.349-353, Dec.2009.
  - 34) Susmita Das, Bikramaditya Das, " A Comparison Study of Receiver Performances on Ultra wideband Indoor Wireless Channel Model," Proceeding of *IEEE Second International Conference on Emerging Trends in Engineering & Technology*, Nagpur, India, ISBN: 978-0-7695-3884-6, pp.1184-1188, Dec.2009.
  - 35) Susmita Das, Bikramaditya Das, “Time domain equalization technique for high data rate UWB communication system”, Proceeding of *International conference on Communication Technologies and VLSI design*, VIT University, Vellore, Tamilnadu, India pp. 89-93, Oct. 2009.
  - 36) Srabani Mohapatra, Susmita das, “Performance Enhancement of OFDM System with ICI Reduction Technique,” Proceeding of *World Congress of Engineering (WCE-09)*, London, U.K, ISBN: 978-988-17012-5-1, vol.1, pp. 459-462, July 2009.S
  - 37) Susmita Das, “A Novel Cascaded Nonlinear Equalizer Configuration on Recurrent Neural Network Framework for Communication Channel”, Proceeding of *World Congress of Engineering WCE 2009*, London, U.K, ISBN: 978-988-17012-5-1, vol. I, pp371-375, July 2009.
  - 38) Srabani Mohapatra, Susmita Das, “Analysis of Pulse Shaping Techniques for Reducing Inter Carrier Interferences and Performance Enhancement in OFDM system”, Proceeding of *National Conference on Advances in Computational intelligence Applications in Power, Control, Signal Processing and telecommunications (NCACI-09)*, Electrical Dept, SIT Bhubaneswar, pp.90-94, Mar 2009.
  - 39) Satapathy, J.K., Panda, G.and Das, S., “Development of a novel digital communication channel equaliser using real time implementable multilayer neural structure”, Published in



- International Conference on Signal Processing Applications & Technology ( ICSPAT'96), Boston, USA, Oct.7-10, 1996*
- 40) Satapathy, J.K., Das, S. and Harris, C.J., “*A novel neural equaliser structure using an embedded self-breeding genetic concept in an orthonormal basis-function framework*”, Published in the *Second International Conference on Information, Communication & Signal Processing(ICICS)*, held at Singapore during 7-10 December 1999, pp.3E4.6
  - 41) Satapathy, J.K., Das, S. and Harris, C.J., “*Embedding discrete cosine transform in a neural network paradigm for performance enhancement of an adaptive channel equalizer*”, Published in *Second International Computer Science Convention on Neural Computation (NC'2000)* , held at Berlin, Germany during 23-26 May 2000
  - 42) Satapathy, J.K., Das, S. and Harris, C.J., “*Pseudo-Adaptive Fuzzy Controller for DC Motor Drive using Hybrid T-Operator Concept*”, Published as Poster paper in Second ICSC Symposium on Engineering of Intelligent Systems(EIS'2000)June27-30,2000 at the University of Paisley, Scotland
  - 43) Satapathy, J.K., Das, S., Harris, C.J. , “*Application of hierarchical knowledge in a neural network domain for designing a high performance adaptive digital channel equalizer*”, Published in the *International Conference on Signal Processing, Applications & Technology (ICSPAT'2000)* at Dallas, Texas, USA, October 16-19, 2000
  - 44) Satapathy, J.K., Das, S., Harris, C.J. and Misra, P., “*Indirect tuning of membership function in a fixed fuzzy structure for efficient control of a dc drive system*”, Published in the *IEEE International Conference on System, Man and Cybernetics (SMC)* held at Nashville, USA in 2000
  - 45) Satapathy, J.K and Das,S, “*Identification of Non Linear Systems Using Fuzzy-tuned Neural Network*”, Published in the Proceedings of All India Seminar on Application of Evolutionary Strategies to Power, Signal Processing and Control(AES 2002 )held at Institution of Engineers(India), Rourkela.
  - 46) S.Das and J.K.Satapathy, “*New Approaches for Performance Enhancement of Adaptive equalisers Based on Recurrent Neural Network Framework*”, Published in the Proceedings of National Conference on Recent Advances in Power, Signal Processing and Control held at Dept. of Electrical Engg., NIT, Rourkela.
  - 47) Jitendriya K Satapathy and Susmita Das , “*BER Performance Improvement of an FNN Based Equaliser Using Fuzzy Tuned Sigmoidal Activation Function*”, Published in IEEEExplore & Proceedings of *International Conference on Signal Processing and Communications (SPCOM 2004)* organised by Indian Institute of Science, Bangalore and *IEEE Signal Processing Society, Bangalore Chapter*.
  - 48) Susmita Das, “*Performance Enhancement of Conventional Recurrent Neural Network Equalisers in Digital Communication Channel Based on fuzzy logic approach*”, Published in the Proceedings of *First International Conference on Frontier Technologies- Need for the Industry, Business and Education*, 6-8 september 2006, Organised by ISTE Chapter, Adhityamaan Engineering College, Hosur, Tamilnadu
  - 49) Susmita Das, Shankar Ram, Anil Kumar Pattanayak, “*A Comparative Study of Adaptive Beamforming Techniques Used by Smart Antennas in Mobile communication*”, Published in the Proceedings of *National conference on Smart communication Technologies and Industrial Informatics*,3-4 February 2007, organised by National Institute of Technology, Rourkela, Orissa
  - 50) Susmita Das, “*Development of Hybrid ANN Structures for Performance Enhancement of Adaptive Channel Equalisers*”, Published in IEEEExplore & Proceedings of IEEE CS Press, ICCIMA' 07, 13-15 December 2007, Mepco Schlenk Engineering College, Sivakasi, Tamilnadu, India
  - 51) Susmita Das, “*Design of Adaptive Channel Equaliser on Neural Framework Using Fuzzy Logic Based Multilevel Sigmoid Slope Adaptation*”, Proceedings of IEEE Xplore & Proceedings of *International Conference on Signal Processing, Communications and Networking (ICSCN 2008)*, 4 - 6 January 2008, Madras Institute of Technology Chennai, India



- 52) Srabani Mohapatra, Sanjay Mohanty and Susmita Das, “*Performance Analysis of Channel Estimation methods in Wireless OFDM Systems Based on Pilot Subcarrier Arrangement*”, Published in the Proceedings of CICCRA-2008, March 10-11, NIT, Rourkela
- 53) Susmita Das, “*Smart Antenna Design for Wireless Communication using Adaptive Beam forming Approach*”, Proceedings IEEE TENCON 2008, IEEE Region 10 Conference, 19-21 Nov. 2008, Page(s):1 - 5 , University of Hyderabad
- 54) Sanjay Mohanty and Susmita Das, “*A Comparative Study of Pulse Shaping Functions for ICI Power Reduction in OFDM System*”, Proceedings of Annual IEEE India Conference, INDICON 2008, Volume 2, Page(s):312 – 316 , 11-13 Dec. 2008, IIT Kanpur
- 55) Susmita Das, “*A novel concept of embedding orthogonal basis function expansion in a feedforward neural equalizer*”, Proceedings of Annual, Volume 2, 11-13 Dec. 2008 Page(s): 519 - 524 , Indian Institute of Technology, Kanpur.
- 56) Srabani Mohapatra and Susmita Das, “*Performance Analysis of Turbo Coded OFDM System in Wireless Communication beyond 3G*”, Published in the Proceedings of National Conference on Advancement in Wireless Technologies and its Applications(AWTA-2008), ISBN: 978-81 907196-9-8, Pg. 90-95, December 18-19, 08, Organised by Electronics Engg. Dept., SVNIT, Surat.
- 57) Srabani Mohapatra, Susmita Das “*A Study on OFDM System and its Performance Analysis*” Proceedings of the National conferences on National Conference on Emerging Trends in Computing and Communication (ETCC-08), page 81-84, Dec 30-31, 2008, organized by NIT Hamirpur.
- 58) Srabani Mohapatra, Susmita Das “*Analysis of pulse shaping techniques of reducing iner-carrier interface performance enhancement in OFDM system*” accepted for publication of the National conferences on NCACI-2009.,organized by Silicon Institute of Technology, Bhubaneswar, Orissa.

## 12. Papers Presented at International and National Conferences:

- 1) Susmita Das and Kala Praveen, “*Complex Multi Layered Perceptron Model Based Reciever Design for Multiuser Detection in SDMA-OFDM System,*” Proceedings of the sixth Global Conference on Power Control & Optimization, Las Vegas, USA, 6-8, August 2012
- 2) Susmita Das, and Bikramaditya Das, “*Suppression of Narrowband Interference in impulse radio based high data rate UWB WPAN communication system using NLOS Channel Model,*” Proceedings of World Academy of Science Engineering and Technology (Print ISSN: 2010-376X, Electronic ISSN: 2010-3778), Issue 77, pp. 668-672, June 2011. Paris, France.
- 3) Susmita Das, and Kala Praveen Bagadi, “*Comparative Analysis of Various Multiuser Detection Techniques in SDMA-OFDM System Over the Correlated MIMO Channel Model for IEEE 802.16n,*” Proceedings of World Academy of Science, Engineering and Technology, ISSN: 2010-3778), Issue 77, pp. 663-667, June 2011, Paris, France.
- 4) Susmita Das, and Bikramaditya Das, “*Suppression of Narrowband Interference in impulse radio based high data rate UWB WPAN communication system using NLOS Channel Model,*” Proceedings of World Academy of Science, Engineering and Technology (Print ISSN: 2010-376X, Electronic ISSN: 2010-3778), Paris , June 2011, Issue 77, pp. 668-672.
- 5) Susmita Das, “*A Novel Cascaded Nonlinear Equalizer Configuration on Recurrent Neural Network Framework for Communication Channel*”, Proceeding of World Congress of Engineering WCE 2009, London, U.K, ISBN: 978-988-17012-5-1, vol. I, pp371-375, July 2009.
- 6) Susmita Das, “*Smart Antenna Design for Wireless Communication using Adaptive Beam-forming Approach*”, Proceedings IEEE TENCON 2008, IEEE Region 10 Conference, 19-21 Nov. 2008, Page(s):1 - 5 , University of Hyderabad
- 7) Susmita Das, “*Development of Hybrid ANN Structures for Performance Enhancement of Adaptive Channel Equalisers*”, Published in IEEEExplore & Proceedings of IEEE CS Press, ICCIMA’ 07, 13-15 December 2007, Mepco Schlenk Engineering College, Sivakasi, Tamilnadu, India



8) Susmita Das, “*Performance Enhancement of Conventional Recurrent Neural Network Equalisers in Digital Communication Channel Based on fuzzy logic approach*”, Published in the Proceedings of *First International Conference on Frontier Technologies- Need for the Industry, Business and Education*, 6-8 september 2006, Organised by ISTE Chapter, Adhiyamaan Engineering College, Hosur, Tamilnadu.

### 13. Book/Book Chapter Published:

- a) “Design of Adaptive Equalizer Structures in Neural Network Paradigm: Development based on both feedforward and recurrent neural topologies of reduced structural complexity”, Published by LAP LAMBERT ACADEMIC publishing AG & Co.KG, Germany, 2010, ISBN: 978-3-8383-2104-2.
- b) Susmita Das, "A Novel Transform Domain based Hybrid Recurrent Neural Equalizer for Digital Communication Channel", Electronic Engineering and Computing Technology, Book Series: Lecture Notes in Electrical Engineering (LNEE), ISBN: 978-90-481-8775-1(Print), 978-90-481-8776-8(online), vol.60, Pg. 129-139, Publisher: Springer, 1<sup>st</sup> Edition, April 2010.

### 14. Best Paper Awards Received:

- a) Received best paper award for “Comparison of Neural based Multiuser Detection Techniques for SDMA based Wireless Communication System,” IEEE Students Conference on Emerging and Systems (SCES-2012), March 16-18, 2012, MNNIT Allahabad.
- b) Received best paper award for “Training based Channel Estimation for SISO/MIMO OFDM System,” Proceeding of AICTE Sponsored National Conference on Emerging Technological Trends (ISBN: 978-81-89107-92-5), pp. 293-297, March 19-20, 2010, VNS Institute of Technology, Bhopal.

### 15. Professional Activities:

- Presented an invited technical talk on “Reliable Communication in UWB-Body Area Network” in Dept. Of Electrical Engineering, University of South Carolina, USA in 29th September, 2014.
- Presented an invited technical talk on. “Broadband for Sustainable Development” on World Telecommunication and formation Society Day on May 17, 2014.
- Chaired a Technical session in International Conference by World Academy of Science, Engineering and Technology, June 2011, Paris, France.
- Chaired a Technical Session in the National conference in “Smart communication technologies and Industrial Informatics”, 3-4 February, 2007 at EE Department, NIT, Rourkela with 50 participants.
- Chaired a Technical Session (Neural network & its applications) in IEEE Computer society sponsored Conference (ICCIMA-2007) in Decem,2007, Shivakasi, TN.
- Chaired a Technical Session (Technology Development) in International Conference at Hosur, Tamil Nadu in August, 2006.
- Visited Wireless Communication Lab, Electrical Engineering Dept., George Washington University, Washington DC, USA from 16 - 31 March, 2006 under International Training facility provided by TEQIP NIT Rourkela and delivered an invited talk on Adaptive Channel Equalization.
- Editorial Board of International Journal of Next Generation Networks(IJNGN)-ISSN : 0975-7023 (Online), ISSN:0975-7252(Print), ACADEMY & INDUSTRY RESEARCH COLLABORATION CENTER (AIRCC).
- Paper Reviewer for IEEE Transaction of Neural Networks and Reviewer for Applied Soft Computing Journal, Springer.
- Ph. D. Thesis Examiner in Manipal Institute of Technology, Manipal , JNTU, Hyderabad.

### 16. Organizing Short Term Courses and Conferences:

- i. Organised Short-term Course in “Advanced Signal Processing and Communication Technology” during 18-22 December, 2006 at EE Dept., NIT, Rourkela.
- ii. Organised a National conference in “Smart Communication Technologies and Industrial Informatics” during 3-4, February, 2007 at EE Department, NIT, Rourkela.



- iii. Organised AICTE-MHRD staff development programme on Advanced control & Signal Processing techniques with applications, 29th October-11th November, 2008 at EE Dept., NIT, Rourkela.

### 17. Projects Handled:

Sl No	PI/ Co-PI	Title of the project and duration	Amount and Year	Funding Agency
1	Co-PI	National mission project on education through ICT, development of suitable pedagogical methods for various classes of intellectual caliber & research in e-learning – course development for mobile communications –Pilot phase over, in MAIN PHASE	Rs. 10 Lakhs (pilot phase) 2009 onwards and now Main Phase Cont.	MHRD Collaborated with IIT Kharagpur
2	PI	Design of Efficient Schemes for PAPR reduction in OFDM based 4G Wireless Applications	75,000/- Decem2008- Decem 2009	Institution of Engineers, India

### 18. Major Administrative Responsibilities at NIT Rourkela:

- i) Vice President, Literary & Cultural Society, Student Activity Centre from December. 2013.
- ii) Asst. Warden, KMS Hall of Residence from June 2007-09.
- iii) Member of Electrical Construction Committee June2009-2011.
- iv) Member of Telephone Exchange Purchase Committee June2011-Continuing.
- v) Chairman, Summer Internship Programme-2015.
- vi) Chairman, Committee to examine Safety Practices of Electrical Estate Section.
- vii) Member, Organizing Committee Alumni Reunion 2015, Centre for Alumni Relations and Resource Generation.
- viii) PIC, Rotaract Club, SAC.
- ix) Faculty Advisor of AIESEC chapter of NIT Rourkela.
- x) Co-ordinator, Signal Processing & Communication Group of EE Dept.
- xi) Member, Dept. Academic Committee.