

## DR.PRAFULLA CHANDRA PANDA

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Emeritus professor

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### INTERESTED RESEARCH AREAS:

- Power System Dynamics
- Power Electronic Applications to Power Systems (HVDC & FACTS)
- Reactive Power Control & Management
- Application of Wavelets for Signal Processing in Power Networks
- Power Quality
- Energy Management and Conservation
- Harmonics & SSR Problems in Power Systems

### ACADAMIC DETAILS :

B.Sc. Engg. (Electrical), M.Sc. Engg. (Electrical) &  
Ph.D. (Electrical), Sambalpur University in the year 1971, 1974 &1990 respectively

### Awards / Honours received:

- Awarded **Senior Member**, IEEE, USA, June 2005.
- Awarded **Deokaran Award**, IEE (India) in the Year 1979 for the paper “*Mini and Micro Computers for Power and Industrial Process Control Plants*”.
- Awarded a **Certificate of Merit** in the Annual Seminar in the year 1984 at CPRI, Bangalore for the paper “*Modelling of Thyristor Controlled Static VAR Compensator for Power System*”.
- Awarded **Madhusudhan Memorial Gold Medal** for the paper “*Dynamic Stability Enhancement of Power System having Composite Loads using Adaptive Fuzzy Power System Stabilizer*” in Golden Jubilee Celebrations of Institute Engineers (India) in the year

2009 at Bhubaneswar.

- Awarded second prize for the paper “Investigating the Performance of a Rural Grid Connected Solar Photovoltaic System on Real Time Basis” in Odisha Engineering Congress in the year 2016 at Bhubaneswar.
- Felicitated as an eminent academician from The Institute of Engineers’, India (Rourkela local center) in the year 2015.

## EXPERIENCE:

### Teaching Experience:

- Professor Emeritus, School of Electrical Engineering, KIIT UNIVERSITY, July 2014-Till date.
- Professor, Electrical Engineering Department, National Institute of Technology, Rourkela, Aug. 1997—June 2014
- Asst. Professor, Electrical Engineering Department, Regional Engineering College Rourkela, Nov.1984 through Aug.1997.
- Lecturer, Electrical Engineering Department, Regional Engineering College, Rourkela, Feb.1975 through Nov.1984.

### Industrial and Consultancy Experience:

- **Engineer-in-charge** of 66kV-Grid Substation Bargarh (O.S.E.B.) and installed, commissioned 5MVA Power Transformer and its control panel auxiliaries.
- **Technical Expert** to the Govt. of India, Ministry of Defense for its project at Ordnance Factory at Bolangir, Orissa for the design of the power supply system.

## RESEARCH PROJECTS:

### Principal-Investigator of Sponsored Projects:

- **Reactive Power Control Problems and Management in Power and Process Industry**, MHRD, Govt. of India. 2001-2004. (Rs. 8 Lakhs)
- **Advanced Power System Laboratory**, MHRD, Govt. of India, 2002-2005 (Rs. 7 Lakhs)
- **Improvement of Power Quality Using Active Filters in Power and Process Industry**, MHRD, Govt. of India, 2004 - 2006. (Rs. 6 Lakhs)
- **Study of Power Quality Problems and Counter Measures in Present Power Systems using Power Electronics Devices**, CPRI Bangalore, India, 2011-2014. (Rs. 20.20 Lakhs)

### Co-Investigator to Sponsored Projects:

- **Microprocessor based real time control and protection of Power Systems-** M.O.E., Govt. of India, 1980-82
- **Thyristor Controlled Static VAR Systems for Power System Damping**, DST, Govt. of India, 1979-82

- **Design of Micro-Computer based Digital Controller for a Synchronous Generator**, CSIR, Govt. of India, 1983-86.
- **Software Development for Dynamic Interaction of Turbine Generators and HVDC Converters embodied in Weak AC Systems**, D.O.E. Govt. of India 1986-88.
- **Software development of HVDC Converters for Co-ordinated Active and Reactive Power Control in weak AC Systems**, D.O.E. & CPRI, Govt. of India, 1988-1990.

#### Professional Body Membership:

- |                            |                           |
|----------------------------|---------------------------|
| • Senior Member IEEE (USA) | Membership No: 41485403   |
| • Fellow IE (India)        | Membership No: F/106708/3 |
| • Fellow IETE (India)      | Membership No: F150409    |
| • Fellow CSI (India)       | Membership No: 00071006   |
| • Life Member ISTE (India) | Membership No: LM20464    |

#### PUBLICATION:

##### (I) International Journals

1. P.K.Dash, M.A.Rahman and **P.C.Panda**, “Dynamic Analysis of Power System with Multi-Terminal HVDC Links and Static Compensators,” IEEE Trans. on PAS Vol.101 No.6, pp.1332-1342, June 1982.
2. P.K.Dash, **P.C.Panda**, A.N.Sharaf and E.F.Hill, “An Adaptive Controller for Static VAR Compensators in Power System,” IEE Proc. Gen. & Dist. Vol.134, Part C, No.3, pp.256-264, May-1987.
3. Therattil, Jose P., **Panda, P.C.**, “Nonlinear Dynamic Modeling and Adaptive Control of a Power System with Unified Power Flow Controller,” Electric Power Components and Systems, Taylor & Francis.
4. R.Panigrahi,**P.C. Panda**,B.D. Subudhi,Md.Ehtesham, “Application of Discrete Kalman Filter in Reference Current Estimation for control of Single Phase Shunt Active Power Filter”, International Journal of Research in Communication Technologies,Vol.01,pp. 58-64, April 2012.
5. Laxmidhar Shau, **P.C.Panda** and Jose.P.Therattil “Study of Shunt FACTS-Based Controllers Effectiveness on Multi Machine Power System Steady State Operation”, Advanced Material Research, Vol.403-408, pp.4926-4933, 2012.
6. Therattil, Jose P., **Panda, P.C.**, “Hybrid Control and Dynamic Modeling for a Power System with Unified Power Flow Controller” European Transactions on Electrical Power, Wiley.
7. Therattil, Jose P., **Panda, P.C.**, “Modeling and Control of a Multi-Area Power System with

- Unified Power Flow Controller,”*Sadhana - Academy Proceedings in Engineering Sciences*, Springer.
8. Therattil, Jose P., **Panda, P.C.**, “Advanced Nonlinear Control for a Multi-Area Power System with Unified Power Flow Controller,” *Electric Power Components and Systems*, Taylor & Francis.
  9. Rajendraprasad Narne, **P.C. Panda**, “Co-ordinated Design of PSS with Multiple FACTS Controllers in Multi-machine Power System using Advanced Adaptive PSO”, *International Review of Electrical Engineering (IREE)*, vol. 8, no. 2, pp. 858-866, 2013.
  10. Rajendraprasad Narne, **P.C. Panda**, “PSS with SVC Damping Controllers Coordinated Design and Real-time Implementation in Multi-machine Power System using Advanced Adaptive PSO” *International Journal of Emerging Electric Power Systems* vol. 14, no. 5, pp. 487-498, 2013.
  11. Rajendraprasad Narne, **P.C. Panda**, “Coordinated Design of PSS with Multiple FACTS Controllers using Advanced Adaptive PSO” *International Journal on Electrical Engineering and Informatics*, vol. 5, no. 3, pp. 361-376.
  12. Rajendraprasad Narne and P.C. Panda, “PSS with Multiple FACTS Controllers Coordinated Design and Real-Time Implementation Using Advanced Adaptive PSO,” *International Journal of Electrical, Electronic Science and Engineering*, vol. 8, no. 1, pp. 144-154, 2014.
  13. R. Panigrahi, P.C. Panda, and B. subudhi, “A Robust Extended Complex Kalman Filter and Sliding mode Control Based Shunt Active Power Filter,” *Electric Power Components and Systems (Taylor & Francis)*, vol. 42, no. 4, pp. 520–532, 2014.
  14. R. Panigrahi, P.C. Panda, and B. subudhi, “Model Predictive based Shunt Active Power Filter with a New Reference Current Estimation Strategy” *IET, Power Electronics* doi: 10.1049/iet-pel.2014.0276
  15. R. Panigrahi, P.C. Panda, and B. subudhi, “Performance enhancement of Shunt active Power filter with arobust H Control strategy” *IEEE Transactions on industry Application*
  16. R. Panigrahi, B. Subudhi, and P. C. Panda, “A Robust LQG Servo Control Strategy of Shunt Active Power Filter for Power Quality Enhancement,” *IEEE Transactions on Power Electronics*, vol. 31, no. 4, pp. 2860-2869, 2016.
  17. R. Panigrahi, B. Subudhi, and P. C. Panda, “A Comparative Assessment of Hysteresis and Dead Beat Controllers for Performances of Three Phase Shunt Active Power Filtering,” *Journal of Power Technologies*, vol. 94, no. 4, pp. 286-295.
  18. R. Panigrahi, B. Subudhi, and P. C. Panda, “New Control Strategy of Shunt Active Power Filter Based on Robust Extended Complex Kalman Filter,” *International Journal of Electrical Power and Energy Systems (Elsevier)*.
  19. Rajendraprasad Narne and P.C. Panda, “Advanced Adaptive PSO based Hybrid Coordinated Design of PSS with Series and Shunt FACTS Controllers in multi-machine power system and Real-time Implementation,” *Iranian Journal of Electrical & Electronic Engineering*
  20. Rajendraprasad Narne and P.C. Panda, “Invasive Weed Optimization based Optimal coordinated design and Real-time implementation of PSSs with TCSC damping controller,” *International Journal of Electrical Power and Energy Systems*
  21. Rajendraprasad Narne and P.C. Panda, “Optimal TCSC controller design, Simulation and Real-

time Implementation in multi-machine power system using Invasive Weed Optimization,”  
International Journal on Electrical Engineering and Informatics

20. Akshay Kumar, P.C.Panda, S.C. Swain, “Coordinated Design of PSS and Sliding Mode Based TCSC Controller for Enhancing Dynamic Stability of Power System,” Australian Journal of Basic and Applied Sciences. *9(16) Special 2015,Pages-289-293.*

## (II) National Journal

1. P.K.Dash and **P.C.Panda**, “Design of Self Tuning Static VAR Controllers for Multi-Machine Power Systems Operating with Non-linear loads” Jou. Of IEE India Vol.76, pp.101-108, Aug 1995.

## (III) International Conferences

1. P.K.Dash, **P.C.Panda** and R.N.Mathur, “Improvement of Dynamic Stability of multi-Machine Power System by the use of optimized Static VAR Compensators,” Int. Symp. On Computer Applications in Large Scale Power Systems, spons. by IFAC, New Delhi, Organized by IEE India , vol.1,1979,pp.169-176.
2. P.K.Dash, A.Routray, **P.C.Panda** and S.K.Panda, “Adaptive Fuzzy Logic Control of Static VAR Systems,” IEEE Int. Conference on PEDES, New Delhi, India, pp.128-133, Jan.1996.
3. C.S.Perumalla and **P.C.Panda** “Fuzzy Control based Adaptive Reactive Volt – Ampere Compensator and Harmonic Suppressor for Variable and Non – Linear Loads” proc. of International Conference on Electrical Energy Systems & Power Electronics in Emerging Economies, ICEESPEEE – 2009, SRM University, Chennai. pp. 898-903, 16<sup>th</sup> – 17<sup>th</sup> April 2009.
4. C.S.Perumalla ,**P.C.Panda**and S.Misra “Fuzzy Controlled Harmonic Suppressor and Reactive Volt Ampere Compensator for Enhancing Power Quality” IEEE World Congress on Natural and Biological Inspired Computing(NABIC’09), December 09-11, 2009, Coimbatore.
5. D.A.Gadanayak and **P.C.Panda**“A Novel Fuzzy Variable-Band Hysteresis Current Controller for Shunt Active Power Filters”, International Conference on Control Communication and Power Engineering, CCPE 2010, 28-29 July 2010, Chennai.
6. Jose.P.Therattil and **P.C.Panda**“Transient Stability Enhancement of a Multimachine Power System with Admittance Model Static Reactive-Power Compensator”, communications in computer and information science, Springer link 2010, vol. 102, part 1 pp. 37-41.
7. Jose.P.Therattil and **P.C.Panda**“Dynamic stability Enhancement using self-tuning Static Var Compensator” India Conference (INDICON), 2010 Annual IEEE, pp 1-5, Dec 2010.
8. Jose.P.Therattil and **P.C.Panda** “Dynamic stability Enhancement of a multi area multi-terminal DC-AC system with Self tuning Static Var Compensator”IEEE Joint International Conference on Power Electronics, Drives and Energy Systems (PEDES) & 2010 Power India, pages 1-6, Dec 2010.
9. RajendraprasadNarne, Jose.P.Therattil, LaxmidharShau and **P.C.Panda** “Dynamic Stability Enhancement Using Self-Tuning Static Synchronous Compensator” IEEE conference on Process automation control and computing, Coimbatore, pp 1-5, July 2011.
10. Jose.P.Therattil and **P.C. Panda** “Improvement of Dynamic Stability of Power System Static Synchronous Series Compensator” IEEE TENCON2011, pp 928-932.
11. Jose.P.Therattil and **P.C. Panda** “Dynamic Stability Enhancement using an adaptive Unified

- Power Flow Controller” IEEE TENCON2011, pp 908-912.
12. Jose.P.Therattil and **P.C. Panda** “Damping of power system oscillations using an advanced Unified Power Flow Controller” IEEE-PEDS2011,Singapore, pp 128-132, 5<sup>th</sup>-8<sup>th</sup> Dec 2011.
  13. RajendraprasadNarne, **P.C. Panda** and Jose.P.Therattil “Transient Stability Enhancement of SMIB system using PSS and TCSC-Based Controllers” IEEE-PEDS2011,Singapore, pp 214-218, 5<sup>th</sup>-8<sup>th</sup> Dec 2011
  14. Therattil, Jose P., **Panda , P.C.**, “Modelling and control of a multi-machine power system with FACTS controller, ” International Conference on Power and Energy Systems (ICPS-2011), Organized by Department of Electrical Engineering, IIT Madras, pp.1-6,22-24 Dec.2011.
  15. Therattil, Jose P., **Panda , P.C.**, “A nonlinear control to unified power flow controller for power oscillation damping,” Proc.3<sup>rd</sup> International conference on advances in energy research (ICAER-2011) Organized by Department of Energy Sciences and Engineering, IIT Bombay, 9-11 Dec.2011.
  16. Therattil, Jose P., **Panda , P.C.**, “ A novel adaptive control for a power system with unified power flow controller,” Proc. 3<sup>rd</sup> International conference on advances in energy research (ICAER-2011) Organized by department of Energy Sciences and Engineering, IIT Bombay, 9-11Dec.2011.
  17. RajendraprasadNarne, **P.C. Panda** and Jose.P.Therattil “Improving Power System Transient Stability by PSS and Hybrid Fuzzy-PI based TCSC Controllers” IEEE student conference on engineering and systems, 2012,NIT Allahabad.
  18. R.Panigrahi,**P.C. Panda**,B.D. Subudhi,Md.Ehtesham, “Application of Discrete Kalman Filter in Reference Current Estimation for control of Single Phase Shunt Active Power Filter”, International conference on information, communication, & embedded system( ICICES’ 12),Feb 24-25,Chennai.
  19. R Panigrahi, **P C Panda**, B D Subudhi, “New strategy for generation of reference current in active power filters with distortion in line voltage”, *IEEE 7<sup>th</sup> International Conference on Industrial and Information Systems (ICIIS)*, pp.121-126, Aug.2012, IIT Chennai. (#)
  20. Rajendra prasad Narne, **P.C. Panda** and Jose.P.Therattil “Genetic Algorithm based Simultaneous Coordination of PSS and FACTS Controllers for Power Oscillations Damping” IEEE International Conference on Sustainable Energy Technologies (ICSET’ 12), Sept.2012, Kathmandu, Nepal.
  21. R Panigrahi, **P C Panda**, B D Subudhi, “Comparison of performances of hysteresis and dead beat controllers in active power filtering”, *IEEE 3rd International Conference on Sustainable Energy Technologies (ICSET)*, pp.287-292, Oct.2012,Kathmandu, Nepal. (#)
  22. Rajendraprasad Narne, **P.C. Panda** and Jose.P.Therattil “Damping of Inter-area Oscillations in Power System using Genetic Optimization Based Coordinated PSS with FACTS Stabilizers” *Annual IEEE India Conference (INDICON)*, Dec. 2012.
  23. Rajendraprasad Narne and **P.C. Panda**, “Optimal Coordinate Control of PSS with Series and Shunt FACTS Stabilizers for Damping Power Oscillations” *IEEE International Conference on Power Electronics, Drives and Energy Systems*, IISC Bangalore, Dec.2012.
  24. Sunil kumar sunkara, Rajendraprasad Narne and **P.C.Panda**, , “Co-ordinated Tuning of PSS with TCSC Damping Controller through Advanced Adaptive PSO for a Multi-machine Power

- System” *IEEE International Conference on Energy Efficient Technologies for Sustainability*, Apr. 2013.
25. Sudarshan Swain and **P. C. Panda**, “A Comparative Study of Two Control Strategies for Three Phase Shunt Active Power Filter using Adaptive Hysteresis Band Current Controller” *IEEE 2<sup>nd</sup> student Conference on Engineering and System 2013, SCES 2013, MNIT Allahabad.* (#)
  26. Avinash Kumar and **P. C. Panda**, “Unified Power Quality Conditioner Based on Synchronous-Reference Frame” *Proc. of IEEE 2<sup>nd</sup> student Conference on Engineering and System 2013, SCES 2013, MNIT Allahabad*, pp. 21-25 (#)
  27. Rajendraprasad Narne, **P.C. Panda**, “Advanced Adaptive PSO Based Co-ordinated design of PSS with Multiple FACTS Controllers in Multi-machine Power System” *5<sup>th</sup> International Conference on Computer Applications in Electrical Engineering-Recent Advances, IIT Roorkee, 2013.*
  28. R Panigrahi, **P C Panda**, B D Subudhi, Sudarshan Swain, “Model Predictive Control of Shunt Active Power Filter with Kalman Filter based reference signal generation”, *5<sup>th</sup> International Conference on Computer Applications in Electrical Engineering-Recent Advances (CERA-13)*, pp.83-87, Oct.2013. (#)
  29. Sudarshan Swain, **P C Panda**, B D Subudhi, R Panigrahi, “An Adaptive Fuzzy PID Controlled Three Phase Shunt Active Power Filter”, *5<sup>th</sup> International Conference on Computer Applications in Electrical Engineering-Recent Advances (CERA-13)*, pp.238-243, Oct.2013. (#)
  30. Sudarshan Swain, **PC Panda** & BD Subudhi, “ Three Phase Shunt Active Power Filter Using a new Weighted Adaptive Hysteresis Band Current Controller ”, *International Conference on Circuit, Power and Computing Technologies, IEEE, ICCPT-2014,Nurul Islam University, Kanyakumari.* (#)
  31. Sudhansu Kumar Samal & **PC Panda**, “ Damping of Power system Oscillations by Using Unified Power Flow Controller with POD & PID Controllers ”, *International Conference on Circuit, Power and Computing Technologies, IEEE, ICCPT-2014,Nurul Islam University, Kanyakumari, 978-1-4799-2399-3/14.* (#)
  32. R Panigrahi, **P C Panda**, B D Subudhi, “ Investigation on active power filter using kalman filter based LOR modeling approach ”, *International conference on Electronics Engineering and Image Processing, ICEEIT-2014,Bangkok,Thailand, April 1-2,2014, ISBN: 9788192710457* (#)
  33. Sudarshan Swain, **P C Panda**, B D Subudhi, “Power Quality Improvement Using Adaptive Fuzzy PID controlled Shunt Active Power Filter Under Non-Sinusoidal Voltage Condition ”, *International conference on Electronics Engineering and Image Processing, ICEEIT-2014,Bangkok,Thailand, April 1-2,2014, ISBN: 9788192710457.* (#)
  34. Sandeep Kumar N , **P C Panda** & Maravathu Nagarjuna “Power Quality Enhancement using DVR and DSTATCOM” *International Conference on Computer Science, Electronics and Communication Engineering-ICCECE ,ISBN: 978-3-642-24819-10,27<sup>th</sup> April 2014, Pune.* (#)
  35. Azmera Sandeep , **P C Panda** & Sandeep kumar N “Study of Hybrid Active Power Filter for Power Quality Improvement” *International Conference on Computer Science, Electronics and Communication Engineering-ICCECE ,ISBN: 978-3-642-24819-10,27<sup>th</sup> April 2014, Pune.* (#)
  36. Maravathu Nagrjuna, **P C Panda** & Azmera Sandeep “Power Quality Improvement using Shunt Active Power Line Conditioner” *IEEE International Conference on Advanced Communication*

Control and Computing Technologies (ICACCCT), ISBN No. 978-1-4799-3914-5,2014. (#)

37. Priyanka Kar ,P.C.Panda, S.C.Swain, Akshay Kumar, “Dynamic Stability Performance Improvement SMIB Power System using TCSC and SVC,” 2015 IEEE Power, Communication and Information Technology Conference(PCITC). SOA University, Bhubaneswar, India. ISBN No. 978-1-4799-7455-9,2015. (#)

#### (IV) National Conference

1. **P.C.Panda** and P.K.Dash, “Mini & Micro Computers for Power and Industrial Process Control Plants,” IEE (India), Rourkela Sub-Centre, Feb. 1979.
2. P.K.Dash and **P.C.Panda**, “Micro-Computers for Industrial and Process Control Applications,” National Symposium on PSOC, U.C.E. Burla, pp.7-17, March 1979.
3. P.K.Dash and **P.C.Panda**, “Improvement of Dynamic Performance of Power System using Static VAR Compensators,” National Symposium on PSOC, pp.4.2.1-4.2.8, Elect. Engg. Dept. “Osmania University”, Hyderabad, June, 1979.
4. P.K.Dash and **P.C.Panda**, “Harmonic Analysis of Static Compensators connected to Power System,” National Power System Conference,Hyderabad, pp.S1.6.1-6.8, Dec.1981.
5. P.K.Dash and **P.C.Panda**, “Harmonic Analysis of Static Compensators connected to Power System,” National Power System Conference,Hyderabad, pp.S1.6.1-6.8, Dec.1981.
6. P.K.Dash and **P.C.Panda**, “Modelling of Thyristor Controlled Static VAR Compensators for Power Systems,” annual Seminar on Electrical Power Engineering, CPRI, Bangalore, June, 1984.
7. P.K.Dash, **P.C.Panda**,andA.K.Mohanty, “A Static VAR Controller for improving the Dynamic Performance of Energy Systems,” National Seminar on Application of Computer Hardware and Software Technology to Energy System and Devices, R.E.C. Rourkela, Orissa, Feb. 1989.
8. P.K.Dash and **P.C.Panda**, “A Computer study of an Adaptive PID Regulator for Static VAR Controllers in Power Systems,” 13th NSC, System Society of India and IIT Kharagpur, India,pp.35-38,13th-15th Dec. 1989.
9. **P.C.Panda** and C.Sahu, “Suppression of Torsional Oscillations Using Static VAR Compensators,” National Symp. On Energy Systems, Management and Control, Osmania Univ. Hyderabad, 24-25th Jan. 1994.
10. **P.C.Panda**, B.S.Chandrasekhar, P.L.Bisi, S.Prasad, G.Shrivastava and S.X.Palathingal, “Application of Micro Genetic Algorithm for Optimal Placement of Capacitors in Distribution System”, All India Seminar on “Application of Evolutionary Strategies to Power, Signal Processing and Control”, REC, Rourkela and IE (India), Rourkela Local Centre, 14-15 Feb. 2002.
11. **P.C.Panda**, B.S.Chandrasekhar, P.L.Bisi, S.Prasad, G.Shrivastava and S.X.Palathingal, “Transmission Loss Reduction by Optimal Placement of Capacitors in Distribution Systems using Micro Genetic Algorithm”, All India Seminar on “Effective Utilization of Generated Power”, IE (India), Bhubaneswar State Centre, 16 Mar. 2002.
12. A.K.Panda, **P.C.Panda** and S.K.Das, “Realization of Power Conditioner for a standalone photovoltaic system,” Recent advances in solar energy conversion system (ICSECS-2002),



pp.269-276, Sep-28-29, 2002.

13. **P.C.Panda**, A.K.Panda and A.Routray, "Adaptive power system stabilizer using Artificial Neural Network", 12<sup>th</sup> National Power System conference (NPSC-2002), pp.804-808, Dec 27-28, 2002.
14. **P.C.Panda**, A.K.Pradhan and R.K.Jena, "A new Intelligent Controller Based Series Active Filter for Power Quality Improvement", National Conference on Recent Advances in Power Signal Processing and Control (APSC-2004), pp.25-31, Nov 16-17, 2004.
15. **P.C.Panda** and B.R.Mohanty, "Analytical Developments in Capability and Performance of Power Transmission Lines", National Conference on Recent Advances in Power Signal Processing and Control (APSC-2004), pp.52-58, Nov 16-17, 2004.
16. J.K.Das and **P.C.Panda**, "Discrete Wavelet Method for Discrimination between Fault and Magnetizing Inrush Current in Transformers," National Conference on Recent Advances in Power Signal Processing and Control (APSC-2004), pp.87-92, Nov 16-17, 2004.
17. **P.C.Panda**, and SgarMohanty, "Dynamic Reactive Power Management in Power and Process Industries" (Orissa Engineering Congress -2007), pp.10-17 Jan – 2007
18. Bidyadhar Subudhi, Anish Kumar A.K., Debashisha Jena and **P.C.Panda**, "DSP Based Control and Identification Of Induction Motor for Industrial Drives," proc.IEEE sponsored conf. on Computational Intelligence, Control and Computer Vision in Robotics and Automation, Rourkela, pp.91-98, March 10-11, 2008.
19. Monalisa Dash and **P.C.Panda**, "Harmonic Frequency Estimation under Non Sinusoidal conditions," proc. of Int. conf.on power system analysis, control and optimization, Andhra University, Visakhapatnam, A.P., India, pp.499-509, March 13-15, 2008.
20. C.S.Perumalla and **P.C.Panda** "Instantaneous Fuzzy Control Based Reactive Volt-Ampere Compensator and Harmonic Suppressor under Variable Non-Linear Load Conditions" proc. of All India Seminar on Applied Power Electronics, APE – 2009, pp.285-292, 24<sup>th</sup>-25<sup>th</sup> Jan, 2009.
21. K.N.D.Anil Krishna, **P.C.Panda** and S.Rauta, "A New Power System Stabilizer using Particle Swarm Optimization for Enhancing Power System Stability", proc. of All India Seminar on Applied Power Electronics, APE – 2009, pp.235-242, 24<sup>th</sup>-25<sup>th</sup> Jan, 2009.
22. G. Thirupthi, **P.C.Panda** and S. Rauta, "Self tuning of Kalman Filters for Digital Protection Applications", proc. of All India Seminar on Applied Power Electronics, APE – 2009, pp.231-234, 24<sup>th</sup>-25<sup>th</sup> Jan, 2009.
23. Rakhee Panigrahi, S.Rauta and **P.C.Panda**, "Application of Robust Algorithm for Frequency and Amplitude Estimation of Distorted Power System Signals", proc. of All India Seminar on Applied Power Electronics, APE – 2009, pp.223-230, 24<sup>th</sup>-25<sup>th</sup> Jan, 2009.
24. S.Mohanty, **P.C.Panda**, and C.S.Perumalla, "Dynamic Stability Enhancement of Power System having Composite Loads using Adaptive Fuzzy Power System Stabilizer". Technical Annual, Golden Jubilee Session, The Institute of Engineers (India), Orissa State Centre, Bhubaneswar, pp.28 – 34, 8<sup>th</sup> Feb 2009.
25. Rakhee Panigrahi, S. Rauta and **P.C.Panda**, "Use of Robust Technique in Power System for Frequency and Amplitude Estimation", proc. of National Conference on Advances in Computational Intelligence Applications in Power, Control, Signal Processing and Telecommunications, NCACI – 2009, Silicon Institute of Technology, Bhubaneswar, 20<sup>th</sup> – 22<sup>nd</sup>

March, 2009.

26. S. Routa, **P.C.Panda** and P.K.Dash “Swarm Intelligence based Nonlinear Filter for Frequency and Harmonic Estimation” proc. of National Conference on Advances in Computational Intelligence Applications in Power, Control, Signal Processing and Telecommunications, NCACI – 2009, Silicon Institute of Technology, Bhubaneswar, 20<sup>th</sup> – 22<sup>nd</sup> March, 2009.
  27. K.N.D.Anil Krishna and **P.C.Panda** “A Novel Power System Stabilizer using Particle Swarm Optimization for Enhancing Power System Stability”, proc. of. National Level Students’ Technical Seminar, PRATIBHA – 09, Padmanava College of Engg., Rourkela, March 2009.
  28. Kamalesh Chandra Rout and **P.C.Panda** “A Review of FACTS Devices for Shaping the Future of Global Energy Delivery” proc. of. National Level Students’ Technical Seminar, PRATIBHA– 09, Padmanava College of Engg., Rourkela, March 2009.
  29. G. Thirupathi and **P.C.Panda** “Kalman Filter Tuning for Digital Protection Applications” proc. of. National Level Students’ Technical Seminar, PRATIBHA–09, Padmanava College of Engg., Rourkela, March 2009.
  30. C.S.Perumalla and **P.C.Panda** “An Instantaneous Fuzzy Controlled Reactive Volt – Ampere Compensator and Harmonic Suppressor for Power System supplying Non – Linear Loads” proc. of National Conference on Intelligent Electrical Systems, NCIES’ 09. Maha College of Engg., Salem, 24<sup>th</sup> and 25<sup>th</sup> April 2009
  31. D.A.Gadanayak, **P.C.Panda** and S.Mohanty “Comparative Study of PI and Fuzzy Logic Controlled Shunt Active Power Filters for Power Quality Improvement”, Technical Annual, Fifty One Session, The Institute of Engineers(India), Orissa State Centre, Bhubaneswar, 14<sup>th</sup> Feb.2010
  32. Jose.P.Therattil and **P.C.Panda** “Transient Stability Enhancement of a Multi Machine Power System Using Adaptive Controlled Static Reactive Power Compensator”, ICEPES, MANIT Bhopal, 26<sup>th</sup>-28<sup>th</sup> Aug 2010.
  33. Therattil, Jose P., **Panda , P.C.**, “Nonlinear model and control of a two area power system with unified power flow controller,” Proceedings of the EE Centenary Conference, IISc,Bangalore, pp.334-339, 15-17 Dec.2011.
  34. Therattil, Jose P., **Panda , P.C.**, “Transient stability enhancement of a power system with unified power flow controller using pole placement technique,” Proc. 35<sup>th</sup> National system conference (NSC-2011) Organized by Department of Electrical Engineering , IIT Bhubaneswar, pp. 37-46, 9-11 Dec.2011.
  35. S.Swain, **P.C. Panda**, B.D. Subudhi, “Implementation of Shunt Active Power Filter using Adaptive Hysteresis Band Current Controller”, National Conference on Recent Advances in Modern Power Systems (RAMPS-2012), VSSUT, Burla, pp. 187-192, 30<sup>th</sup> Dec 2012. (#)
  36. A.Kumar, **P.C. Panda**, “Synchtonous-Reference Frame based Controller for Unified Power Quality Conditioner”, National Conference on Recent Advances in Modern Power Systems (RAMPS-2012), VSSUT, Burla, pp. 173-178, 30<sup>th</sup> Dec 2012. (#)
- A.Kumar, S.Swain, **P.C. Panda**, “An Adaptive Hysteresis Band Current Controlled Unified Power Quality Conditioner”, National Conference on Power Electronics Systems and Applications (PESA-2013), NIT Rourkela. (#)

**Ph.D GUIDED:**

- Ph.D. Students (Awarded):(3)
  1. Jose.P.Therattil – “Dynamic modeling and control of Multi Machine Power System with FACTS devices for Stability Enhancement”
  2. Rakhee Panigrahi–“Power Quality Improvement using Active Power Filters”
  3. Rajendra Prasad Narne–“Transient Stability Enhancement of Power System using PSS & FACTS Controllers”

**M.Tech THESIS GUIDED:**

SL. No	NAME OF THE STUDENT	TITLE OF THE THESIS	YEAR
1.	Prafullaku.Swain	Study of the Thyristor-Controlled Static VAR Compensators used in Power Systems.	1983
2.	AshishKu.Mishra	Application of Static VAR Compensators for Improvement of Voltage profile and Real Power Loss Minimization.	1989
3.	M.RaviBerma	Multi-mode Stabilization of Torsional Oscillations using Static VAR Compensators.	1990
4.	Gitanjali Gandhi	Microprocessor based Speed control for a Three- Phase Slip-ring Induction Motor.	1990
5.	SomenathMajhi	Exact Fault Location for Power System Relaying based on Damped Trapezoidal Integration and Auto-correlation of Travelling Waves.	1991
6.	Sukumar Mishra	Study of Transient Induced Voltages in a communication line from the Overhead Power Transmission Line.	1992
7.	ChandaneswarSahu	Suppression of torsional oscillations using Static VAR Compensator.	1993
8.	ChittaRanjanSahu	Adaptive power system stabilizer using Artificial Neural Networks.	1994
9.	SantiSwarupTripathy	Damping of Power System Oscillations by use of controllable components.	1996
10.	P.K.Nath	Study of reactive Power Compensation in Rourkela Steel Plant for Power Quality Management.	1997
11.	Narayan Ch.Sahu	Programmable thyristorised DC Drives Control for Skinpass Mills in Rourkela Steel Plant.	1998
12.	SatyapriyaSatpathy	Fuzzy Logic based Power System Stabilizer.	1999
13.	Judhisthira Das	Power System stabilizer using Fuzzy Logic and Neural Network.	2000
14.	Ranjan Ku. Nayak	Application of RBF Neural Networks for Fault Diagnosis in Power System.	2001
15.	AmitrajD.Pastay	Optimal capacitor placement in distribution systems using Genetic Algorithms.	2002
16.	Satyasish Mishra	A New intelligent controller for FACTS devices using IGBT based models in PSCAD	2003

17.	JitendraKu.Das	Discrete Wavelet Analysis for discrimination between Faults and Magnetising inrush currents in transformer.	2004
18.	Agasti Kumar Pradhan	A New intelligent controller based Series Active Filter for Power Quality Improvement	2004
19.	BiswaranjanMohanty	Analytical Developments in Capability and Performance of power transmission lines	2004
20.	Harish Kumar Sahoo	Power Quality Detection and classification and disturbance data compression using Wavelet Transform	2005
21.	A.Sridhar	Implementation of Adaptive Multirate (AMR) Speed Codec	2006
22.	Kiran Kumar Guthula	Adaptive comb filtering for calculation of power system frequency and	2006
23.	Chandrababu .A	A Variable step size LMS algorithm for estimating power system frequency	2006
24.	D.Pradeep	Investigation on Shunt Active Power filter for Power Quality Improvement	2007
25.	Monalisa Dash	Harmonic Frequency Estimation under Non Sinusoidal conditions	2007
26.	D.Raghu Rama Reddy	Improving transient stability of power systems by using Passivity-based Nonlinear STATCOM Controller	2007
27.	T.Purna Chandra Rao	An accurate frequency estimation in power networks in the presence of harmonics	2007
28.	Suresh. Mikkili	A Wavelet Fuzzy Approach to fault classification and location in transmission lines	2008
29.	D.Buchi Reddy	Power Quality Indices estimation under Non Sinusoidal conditions using Improved Recursive Two Stage Newton Type algorithms	2008
30.	B.Kiran Kumar	Analysis of Sub Synchronous Resonance in power system through simulation of First Benchmark Model using SEQUEL.	2008
31.	Chandrasekhar Perumalla	Instantaneous Fuzzy Controlled Reactive Volt-Ampere Compensator and Harmonic Suppressor for Enhancement of Power Quality	2009
32.	K.N.D.Anil Krishna	A New Power System Stabilizer using Particle Swarm Optimization for Enhancing Power System Stability	2009
33.	RakheePanigrahi	Frequency Estimation of Distorted Power System Signals using Robust Algorithm	2009
34.	AppaRaoChundru	Modeling, Simulation and Design of Static VAR Compensator using Discrete Sliding Mode Control for Power System	2009
35.	Swathi Joshi	Power System Stability in AC-DC Systems	2010
36.	DebadattaAmareshGadanayak	Fuzzy Logic Controlled Shunt Active Power Filter for Harmonic Compensation	2010
37.	Rahooof C	Dynamic Stability Enhancement of Power System with Multiterminal HVDC Links and Static VAR Compensators	2010
38.	Lakshmi Dhar Sahu	Modeling of STATCOM and SVC for Power System Steady State Operation and Enhancement of Transient Stability of A Multi-Machine Power System by STATCOM	2011
39.	Gandam Manohar	Real-Time Frequency Estimation of Power System Using Wavelet Transform	2011

40	Deepak Narayan Behera	Study and Analysis of Harmonic Estimation Techniques Using Adaptive Filtering	2011
41	Kamalesh Chandra Rout	Dynamic Stability Enhancement of Power System Using Fuzzy Logic Based Power System Stabilizer	2011
42	Md. Ehtesham	Power Quality Improvement Using Series Active And Shunt Passive Filters	2012
43	Santhosh Yedla	Power System Modeling and Simulation Containing STATCOM And SSSC For Steady State Analysis And Transient Stability Assessment	2012
44	Srikanth Nadipineni	Voltage Source Converter HVDC Transmission System Based on Inductive Filtering Method	2012
45	Avinash Kumar	An adaptive hysteresis band current controlled Unified Power Quality Conditioner	2013
46	Sunil Kumar Sunkara	Co-ordinated design of PSS and TCSS damping controllers in multi-machine systems using PSO.	2013
47	Chandra Sekhar Amara	Adaptive hysteresis based Fuzzy controlled shunt active Power filter for mitigation of harmonics.	2013
48	GSC Trinath Prabhu	Estimation of harmonics using PSO-Adaline for distorted power signals.	2013
49	Mohapatra Bikash Kumar Sahoo	Dynamic Stability Improvement of a power system using HVDC based on Voltage Source.	2014
50	Sudhansu Kumar Samal	FACTS Devices for Power stability Enhancement.	2014
51	Sandeep Kumar N.	Power Quality Issues and its Mitigation Techniques	2014
52	Maravathu Nagarjuna	Voltage Quality Factor and Power quality Factor Improvement Using Active Power Line Conditioner.	2014
53	Azmera Sandeep	Power Quality Analysis Using joint time Frequency Technique.	2014
54	Hari Akula	Optimal allocation of DG units in Distribution system to improve voltage profile and loss reduction	2014
55	Akshay Kumar	Dynamic Modeling and Stability Enhancement of SMIB Power System using FACTS Devices.	2015
56	Ashit Kumar Hota	Economic Load Dispatch Using Distributed Slack Bus Algorithm	2015

### B.Tech Projects Supervised:

SL. No:	Names of the Students	Title of the Project	Year
1.	N.K.Swain, N.Mishra, A.K.Mohanty	Automatic Control Of A Line Compensator for A 440 V Supply System.	1977
2.	JnyanaR.Sarangi, ManasR.Sarangi, Uma Kr.Satapathy	Precision measurement of Quadrature Axis Inductance of A Reluctance Machine.	1979
3.	B.S.Pradhan, S.K.Padhee, M.V.Vidyasagar, S.K.Puri	Thyristorised Static VAR Compensator.	1980
4.	MuraliDhar Mishra, AshishKr.Mishra, Nirmal	Design of A 3-phase Extra Long Transmission Line Model with Compensation for Studying the	1981

	Kr Mohanty	Voltage Profile.	
5.	PriyabrataPatnaik, SurendranathPatra	Voltage regulation using Integrated Circuits.	1987
6.	Sumanth Gupta, BilwadalSarkar,AshokVerma	Self-excited Induction Generator by Force Commutated Rectifier System operating as a DC Power Supply.	1988
7.	SatishKr.Karna, N.S.R.Murty, T.K.Barua	Memory Actuated Indicator.	1988
8.	Tara Nath Sharma, Harish Kr Batra, Sundar P.N	The simulation of HVDC Systems in a AC Load Flow analysis by Digital Computers and The Advanced Schemes for Feasibility,Stability and Voltage Collapse in Weak Back to Back HVDC Links.	1989
9.	Bikram R Chourdury, Subhasish Mishra, DillipKr.Mohanty	Expert System based Algorithm for Short term Load Forecast.	1989
10.	MitreshKr.Verma, S.S.NarasimhaRao	A Software Design of Computer based Impedance Relay for Transmission Line Protection	1989
11.	Pragatish Shah, Deepak Kamble, Vasupathiran	Application of Shunt Capacitor for Voltage Control and Loss Reduction in Distribution System	1990
12.	Shrutimedh, KaniskaSrivastava	Determination of Transients in Transmission Lines Using State Variable Approach	1990
13.	Manoranjan Das, Biranchi Narayan Ghadai, Sridhar Jena	Real Time Economic Dispatch Based on Penalty Factors By Using Digital Computer	1991
14.	RamchandraHegde, DevasisAcharya, AnoopMaiya, P.RajaRao	Computer Aided Optimal Design of 3-Phase Induction Motor	1992
15.	V.Shankar, SachinC.Dayal, PradeepKr.Shullet, PrabirKr.Behera	Expert System for Fault Identification in Lines	1993
16.	Rahul Deo Gupta, KaushlendraTripathi	Simulation of Artificial Neural Networks for Short Term Load Forecasting	1995
17.	HemantKr.Poddar, Vivek Da Cruz Pinto	Identification and Control of DC Motor Using Artificial Neural Network	1995
18.	Bini Varghese, DevPrakashYadav, Lalit Singh Choudhary	Digital Power Frequency Relay	1996
19.	T.Rajesh Kr., Rajneesh Gautam	Estimation of Synchronous Machine Parameters	1996
20.	Monoj Francis Emmatty, J.RahulRao	Harmonic Analysis for Industrial Customers	1996
21.	RakeshDwivedi, N.Suryanarayana, AnkurSobti, PankajPandey	Development of HVDC Simulator	1998

22.	SonaramMurmu, MonojKr.Hembram,Ananta Narayan Behara, SambitDevabrataChoudhury	Application of Static VAR Compensator for Improvement of Voltage Profile and Real Power Loss Minimisation	1999
23.	SukantaGarai, Tapas Ch.Pradhan, Inderpal Singh, JogendraNathNayak, GeetikaGulati	Pattern Recognition using Artificial Neural Network	2000
24.	BarnaliSahoo, Reena Gupta, DebaprasadRath, PradeepKr.Panigrahi,AlokR anjanSahu	Artificial Neural Network based Economic Loading of Generators and Interconnected Stations	2001
25.	B.S.Chandrasekhar, GouravShrivastava, PrasantiL.Bisi, SejoX.Palathingal, Sanjay Prasad	Reduction of Transmission Losses by Optimal Placement of Capacitor in a Distribution Systems Using Micro Genetic Algorithm	2002
26.	Badri Narayan Mohanty,Rabi Narayan Mandala, George ShahbokSyiem	Fuzzy based Loss Minimization and Voltage Control in a Distribution system	2004
27.	ChandanaPattanayak, SnehalataChoudhury	Enhancement of Power Quality Employing Shunt Active Power Filter	2004
28.	RumkiBhadury, DebashishPradhan, NamitaSahoo, M.Bokji, Surender Ram	Simulation and Investigations on a Shunt Active Filter for Power quality Improvement	2005
29.	Shruthi.S, StutiSurekha, AnkitChandrawal	MAT LAB Based PSAT: for Power System Stability Studies	2006
30.	Debraj Roy, SrinivasK.,AnupamSaha, RamendraPathak, Sachidra Bar	Load Flow Analysis Using MAT LAB 7.0	2007
31.	NaveenaDhawalgi , VazeAvinashMadhukar , Iyer Sudhakar Ramasubramoney, Gilbert E. Kharbithai, Bonny Sinha ,	Economic Load Dispatch Solution Using Modified QuardinationEqautions	2008
32.	Pranamitabasu Aiswaryaarichandan	Power system stability studies Using MATLAB	2009
33.	Ravi Shankar Singh ByaktiranjanPattanayak Shankar Kumar	Power Electronics:: Computer Simulation and Analysis	2009

34	ShwetaAghrawal Suchitra Singh	Study of Subsynchronous Resonance and Its Countermeasure using Static Var Compensator	2010
35	PunyatoyaSahu	Parameter Determination for Modelling system Transients for Overhead Transmission Lines	2010
36	BhabaniSankarHota Amit Kumar Mallick	Load Flow Study in Power System	2011
37	AbhijeetBarua Pradeep Kumar	Study of Reactive Power Compensation using STATCOM	2011
38	Abhijeet Halder Vishwarath Bhadauria	Power System Stability Enhancement by Simultaneous AC-DC Transmission.	2012
39	Sambit Kumar Dwivedi	Load Modeling in Optimal Power flow studies	2012
40	Anurag Mohapatra	Distributed slack bus algorithm for Economic Load Dispatch.	2012
41	Mahesh Prasad Mishra	Solution of Economic Load Dispatch using PSO	2012
42	Siddhahast Mohapatra	Load Frequency Control in Two area Power System	2012
43	Soumya Ranjan Panda	Distributed Slack Bus Model for Qualitative Economic Load Dispatch	2013
44	Pranaba Pattnaik	Load frequency control in single area power system.	2013
45	Sibasish kanungo	Modelling of loads in power Flow analysis	2013
46	Sandeep Behera	Soultion to constrained economic load dispatch	2013
47	Sidhartha Mohapatra	Power upgradation by simultaneous ac-dc power transmission system	2013
48	Samaresh Sathpathy	Wind Diesel Hybrid System.	2014
49	Pushanjeet Mishra Abishek Kumar Panda	A new approach to load balancing and power factor correction	2014

#### SUBJECTS TAUGHT:

- Power System Operation and Control
- Flexible AC Transmission
- HVDC Transmission
- Transmission and Distribution
- Energy Conversion