

Dr. Manoj Kumar Maharana

Dr. Manoj Kumar Maharana
Associate Professor and Associate Dean



Contact details :

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INTERESTED RESEARCH AREAS:

Power system operation control, Smart Grid, Energy management in Micro grid

SCHOOL LEVEL RESPONSIBILITY:

Associate Dean, B.Tech Programme Head, Accreditation core team,

ACADAMIC DETAILS :

S.NO	DEGREE	INTITUTION NAME	YEAR OF PASSING
1	Ph D	Electrical Engineering Department, IIT Madras	2010
2	M.Tech	Electrical Engineering Department, REC (NIT) Warangal,	2001
3	B.E (AMIE)	The Institution of Engineers (India), Kolkata	1997

EXPERIENCE:

- 1 INDUSTRIAL: 1 year
2. TEACHING: 13 + year

PUBLICATION:

SELECTED PUBLICATIONS(SI INDEX) :

- 1) **Manoj Kumar Maharana**, K. Shanti Swarup, “Optimization based Graph theoretic approach for Corrective Control Strategies to Mitigate Overloads”, European Transaction on Electrical Power, [Volume 20, Issue 8](#), pages 1009–1024, November 2010.
- 2) **Manoj Kumar Maharana**, K.S. Swarup, “Graph Theoretic Approach for Preventive Control of Power Systems”, International Journal of Electrical Power and Energy Systems, Vol. 32, 2010, pp. 254-261.
- 3) **Manoj Kumar Maharana** and K. Shanti Swarup, “Corrective Strategy to Alleviate Overloading in Transmission Lines based on Particle Swarm Optimization Method”, The Journal of

Engineering Research, Vol. 7, No. 1, 2010, pp. 31-41.

- 4) **Manoj Kumar Maharana**, K. Shanti Swarup, “Transmission line overload alleviation due to contingency based on DAG assisted PSO method”, International Journals of Power and Energy Conversion (IJPEC), Vol.1, No. 4, 2009, pp-363-383.
- 5) J. Vanishree, **Manoj Kumar Maharana**, K. Giridharan, A. Chitra and W. Razia Sultana, “Dynamic Modelling of a Wind/Fuel-Cell/Ultra-Capacitor-Based Hybrid Power Generation System” Research Journal of Applied Sciences, Engineering and Technology, Vol 7, Issue-4, January-2014, pp: 812-821. **ISSN: 2040-7459; e-ISSN: 2040-7467**

FULL PUBLICATION:

International Journals

- 1) **Manoj Kumar Maharana**, K. Shanti Swarup, “Optimization based Graph theoretic approach for Corrective Control Strategies to Mitigate Overloads”, European Transaction on Electrical Power, [Volume 20, Issue 8](#), pages 1009–1024, November 2010.
- 2) **Manoj Kumar Maharana**, K.S. Swarup, “Graph Theoretic Approach for Preventive Control of Power Systems”, International Journal of Electrical Power and Energy Systems, Vol. 32, 2010, pp. 254-261.
- 3) **Manoj Kumar Maharana** and K. Shanti Swarup, “Corrective Strategy to Alleviate Overloading in Transmission Lines based on Particle Swarm Optimization Method”, The Journal of Engineering Research, Vol. 7, No. 1, 2010, pp. 31-41.
- 4) **Manoj Kumar Maharana**, K. Shanti Swarup, “Transmission line overload alleviation due to contingency based on DAG assisted PSO method”, International Journals of Power and Energy Conversion (IJPEC), Vol.1, No. 4, 2009, pp-363-383.
- 5) **Manoj Kumar Maharana** and K. Shanti Swarup, “Local Optimization based Corrective Control Strategies for Mitigation of Overloads using Direct Acyclic Graph”, International Journal of Electrical and Power Engineering (IJEPE), Vol. 3, No.4, July-August 2009, pp 198-207.
- 6) **Manoj Kumar Maharana** and K. Shanti Swarup, “Transient Stability Approach for Operating State Identification of Power System”, ACTA Electrotehnica, Vol. 49, No. 4, 2008, pp. 440-449.

National Journals

- 1) **Manoj Kumar Maharana**, K. Shanti Swarup, “Direct Acyclic Graph based Corrective Control Strategies for Alleviation of Line Overloads during Contingencies”, Journal – EL Institution of Engineers (India), Vol 91, June 2010, pp. 16-22.
- 2) **Manoj Kumar Maharana**, K. Shanti Swarup, “Corrective Control Strategies for Mitigation of Line Overloads during Contingencies”, The Journal of CPRI, Vol.5, No. 2, Sept 2009, pp. 51-63.

Technical Magazine

- 1) **Manoj Kumar Maharana** and K. Shanti Swarup, “Power system Identification and Operation under Emergencies”, Electrical India, Vol. 49, No.5, May 2009, pp 82-87.

Under KIIT University

- 1) Manoj Kumar Maharana, Roopali Mohanty, “PSO based Harmonics Reduction Technique for Wind Generated Power System”, Special issue in International Journal of Power System Operation and Energy Management, Vol. 1, Issue-3, pp. 100-104, 2012. **ISSN : 2231 – 4407**
- 2) Archit Patnaik & Dr. M . K. Maharana, “Enhanced Ultracapacitors & its Application”, International Journal of Electrical, Electronics and Data Communication, Volume-1, Issue-9, Nov-2013, pp-32-37, ISSN: 2320-2084.

- 3) J. Vanishree, **Manoj Kumar Maharana**, K. Giridharan, A. Chitra and W. Razia Sultana, "Dynamic Modelling of a Wind/Fuel-Cell/Ultra-Capacitor-Based Hybrid Power Generation System" Research Journal of Applied Sciences, Engineering and Technology, Vol 7, Issue-4, January-2014, pp: 812-821. **ISSN: 2040-7459; e-ISSN: 2040-7467**
- 4) Samrat Malakar and **M. K. Maharana**, "Sensitivity Based Network Contingency Ranking Using Newton Raphson Power Flow Method", International Journal of Scientific Engineering and Technology Volume No.4 Issue No.2, pp : 45-49 (ISSN : 2277-1581)
- 5) Mrutyunjay Das, Dr. C. K. Panigrahi, **Dr. M. K. Maharana** "Design Aspects and Different Control Strategy of Stand-Alone PV System by MPPT Technology", International Journal of Latest Technology in Engineering, Management & Applied Science, ISSN No. 2278-2540, Volume IV, Issue VIII, August 2015, pp. 95-103
- 6) Mrutyunjay Das, Dr. C. K. Panigrahi, **Dr. M. K. Maharana**, Improvement of the Performance of PV System with CUK Converter by MPPT Technology, International Journal of Computer Applications, Volume 127 – No.5, October 2015 , pp. 33-36
- 7) Mrutyunjay Das, Dr. C. K. Panigrahi, **Dr. M. K. Maharana**, Design Aspects of DC-DC Boost Converter in Solar PV System by Maximum Power Point Tracking (MPPT) Algorithm, International Journal of Applied Science Engineering And Management, VOL 1, ISSUE 1, October-2015 pp.32-44
- 8) Aritra Ghosh and **M K Maharana**, Novel Boost Converter fed BLDC Motor Drive for Superior Voltage Gain, Special Issue on International Journal on Advanced Electrical and Computer Engineering (IJAECE), Vol-3, Issue-1, pp 111-117.
- 9) **M K Maharana**, A Review of MICROGRID, Special Issue on International Journal on Advanced Electrical and Computer Engineering (IJAECE), Vol-3, Issue-1, pp 11-14

Conference Proceedings

International

- 1) Manoj Kumar Maharana and K. Shanti Swarup, "Graph Theory based Corrective Control Strategy during Single Line Contingency", Third International Conference on Power Systems (ICPS-2009), December 27-29, IIT Kharagpur, INDIA.
- 2) Manoj Kumar Maharana and K. Shanti Swarup, "Particle Swarm Optimization based Corrective Strategy to Alleviate Overloads in Power System", World Congress on Nature and Biologically Inspired Computing (NaBIC-09), December 09-11, Coimbatore, India.
- 3) Manoj Kumar Maharana, Shanti Swarup K. (2008), "Identification of Operating States of Power Systems using Transient Stability Analysis", POWERCON-2008, 2008-IEEE Power India Conference, New Delhi, India, 12-15 October.
- 4) Manoj Kumar Maharana, Shanti Swarup K. (2008), "Graph Theoretic Approach to Preventive Control of Power System under Emergencies", International Conference on PSACO, Viskhapatnam, India, 13-15 March.
- 5) Manoj Kumar Maharana, Vinod Kumar, D.M. (2001), "Hybrid Fuzzy-SVC Based Power System Stabilizer", International Conference on EAIT-2001 , IIT Kharagpur, India, 10-12 December.
- 6) Archit Patnaik and Manoj Kumar Maharana, "Enhanced Ultracapacitors & Its Application" Proceedings of IACEECE Conference, Chennai, September-2013.
- 7) Rakesh Rajan Shukla, **Manoj Kumar Maharana and** Debapriya Das, "Effect of CES and SMES on AGC in presence of Different Controllers and ramp Disturbances", 2015 IEEE Power, Communication and Information Technology Conference (PCITC) Siksha 'O' Anusandhan University, Bhubaneswar, India, October 15-17 -2015 .
- 8) Samrat Malakar and **Manoj Kumar Maharana**, "Network Contingency Ranking using Analytic Hierarchy Process to Calculate Unequal Importance Factors for Static Severity Indices", Michael

Faraday IET International Summit (MFIS-2015), Kolkata, September 12-13, 2015,

9. Aritra Ghosh, Subhendu B. Santra, **M K Maharana** and Pravat Biswal, Torque Ripple and Efficiency Optimization of a Novel Boost Converter fed BLDC Motor Drive, 2016 IEEE INTERNATIONAL CONFERENCE ON computation of power, energy, information and communication.

National:

- 1) Manoj Kumar Maharana, K. Shanti Swarup (2009), “Identification of Participating Generators for Control Actions under Contingencies”, Technological Advances and Computational Techniques in Electrical Engineering, TACT-2009, NIT Hamirpur (H.P.) India, 16-17 March.
- 2) Manoj Kumar Maharana, K. Shanti Swarup (2008), “Identification of Operating States using Direct Acyclic Graph”, XXXII National System Conference, NSC-2008, IIT Roorkee, India, 17-19 December.
- 3) Archit Patnaik and Manoj Kumar Maharna,(2013), “Enhanced Ultracapacitors & its Applications”, Proceedings of IACEECE Conference, 9-11 September-2013.

Ph.D GUIDED:

YEAR : 2016	
S.NO	TITLE
1	Some studies on control strategies for Enhancement of output power in solar Photo Voltaic System (Submitted

M.Tech THESIS GUIDED:

YEAR :	
S.NO	TITLE
1	A Comparative study of Harmonics elimination of cascade multilevel inverter by PSO and BFOA Techniques (2012)
2	Power system planning considering distributed generation (2013)
3	Optimal location and size of capacitor for power loss minimization in a radial distribution system (2013)
4	Design of filter for Grid connected three phase inverter (2014)
5	Techno commercial feasibility study of Existing street lighting system by solar power (2014)
6	Performance analysis of Grid connected Rooftop solar photovoltaic system with loss minimization (2014)
7	Power system contingency assessment using Fuzzy logic reasoning incorporating analytic hierarchy process (2015)
8	3-phase isolated dual active bridge DC-DC Converter (2015)
9	Embedded Z-source Inverter (2016)
10	Performance analysis of Grid connected Rooftop solar photovoltaic system with loss minimization (2016)
11	Frequency deviation control of A wind and solar hybrid system using PI and Fuzzy controller (2016)
12	Analysis and high speed detection of different types of fault in transmission and distribution line (2016)

B.Tech PROJECTS GUIDED:

YEAR :	
S.NO	TITLE
1	Investigation on modified multi-carrier based pulse width modulation technique for brushless DC Motor drives (joint guide 2016)
2	Solid state Tesla Coil (2015)
3	Economic solar tracking using An ATMEGA 328 for a single axis system (2015)
4	Wireless power transmission and its application in charging a Pacemaker's battery (2014)
5	Enhance Ultra Capacitor and its application (2014)
6	Usage of a PIC microcontroller for the effective operation of a water pump (2014)
7	Study of a voltage profile for a post fault system using ETAP software (2013)
8	Congestion management by distributed generation (2013)
9	LFC of single area system by Fuzzy logic controller (2012)
10	Speed control of DC motor using Lab View

CONFERENCE/WORKSHOPS ORGANIZED/ATTANDED:

S.NO	Title	Attended/organized	YEAR
1	2015 IEEE Power, Communication and Information Technology Conference (PCITC) Siksha 'O' Anusandhan University, Bhubaneswar, India,	Attended	October 15-17 -2015 .
2	Michael Faraday IET International Summit (MFIIS-2015), Kolkata,	Attended	September 12-13, 2015
3	POWERCON-2008, 2008-IEEE Power India Conference, New Delhi, India, 12-15 October.	Attended	2008
4	Third International Conference on Power Systems (ICPS-2009), December 27-29, IIT Kharagpur,	Attended	2009

SUBJECTS TAUGHT:

S.NO	SUBJECT CODE	SUBJECT NAME
1	EE 3001	Electric power Transmission and Distribution
2	EE 3002	Power System Operation and Control
3	EE 4038	EHVAC and HVDC Transmission System
4	EE 4033	Modern Control Theory
5	EE 4003	Switch Gear and Protection
6	EE 6121	Computer Applications in Power System
7	EE 6304	Soft Computing Techniques in Power Systems
8	PGEE 213	Optimization Techniques in Power System