

Curriculum –vitae

Dr. K. Uma Rao, Ph.D, MBA,



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Profile in brief :

- Doctorate in Power Engineering from Indian Institute of Science.
- 24 years of UG and PG teaching in Electrical, Electronics and Management.
- 6 Awards of excellence
- 40 Technical publications; Guiding 5 Ph.D students and 1 MS
- 8 technical books published by TMH, IK International and Pearson
- 2 e-books for VTU's pilot project on animated learning material for electrical machines, via Moodle.
- Well acquainted with accreditation norms of technical institutions.
- Acted as BOE member for VTU in Electrical Engineering. Currently on ECE board. BOS member of MSRIT, BVB and BMS.

- Resource person for Indo US Collaboration for Engineering Education programs.
- Certified energy auditor, Bureau of Energy Efficiency, Central Govt. of India
- Extensively involved in teachers training, soft skill for students and teachers, conducting workshops in self development .

Academic Profile :

Educational Qualifications:

From	To	Institution	Exam/Degree	Remarks
2002	2004	Indira Gandhi Open University, New Delhi	MBA	Project Management
1993	1996	Indian Institute of Science Bangalore	Ph.D	Power Engineering Thesis : Power System Stability Evaluation and Control Using Energy Functions and FACTS Controllers, under Prof. K.R. Padiyar
1985	1987	University Visvesvaraya College of Engineering, Bangalore	M.E. (Power Systems)	First Class Distinction University First Rank
1980	1984	University Visvesvaraya College of Engineering, Bangalore	B.E. , Electrical Engineering	First Class University First Rank

Membership of Professional Institutions / Societies

- 1) Life Member of Indian Society of Technical Education Dt. Mar 1989
- 2) Life Member of Institution of Engineers (I) Ltd. Dt. Oct 1991
- 3) Fellow of Institution of Electronics and Telecommunication Engineers – Dt Dec 2008
- 4) Member IEEE, 2008

Professional Profile

- **Present position** : Dean Academics, Faculty of Engineering and Head, Department of Electronics and Communication Engineering, RN Shetty Institute of Technology, Bangalore – 560 061..
- **Previous Appointments**

From	To	Employer	Position held
Nov 2007	Date	RNS Institute of Technology	Dean Academics, faculty of engineering and HOD ECE.
May 2005	Nov 2007	RNS Institute of Technology	HOD EEE
May 2003	May 2005	Gayatri Vidya Parishad College of Engineering, Visakhapatnam, Andhra Pradesh, India.	Professor and Head, Department of Electrical and Electronics Engineering.
August 1998	May 2003	Andhra University, Visakhapatnam, Andhra Pradesh, India	Associate Professor, Department of Electrical and Electronics Engineering
May 1990	August 1998	Andhra University, Visakhapatnam, Andhra Pradesh, India	Assistant Professor, Department of Electrical and Electronics Engineering.
August 1987	May 1990	Gandhi Institute of Technology & Management, Visakhapatnam Andhra Pradesh, India	Lecturer, Department of Electrical and Electronics Engineering

- **Subjects Handled**

Under Graduate Engineering

- Basic Electrical Engineering
- Logic Design
- Numerical techniques & Computer programming
- Switch Gear & Protection
- Power Utilization & Distribution
- Power System Analysis

- Network Analysis
- Signals and Systems
- Electromagnetic Field Theory
- Electrical Measurements
- Computer Architecture
- Microprocessors
- Micro controllers
- Basic Electronic circuits
- Digital Signal Processing
- Computer analysis of power systems
- Cryptography
- Artificial neural networks

Post Graduate Engineering

- Power Systems Dynamics & Control (PG)
- Computer Aided Power System Analysis (PG)
- Power System Operation (PG)

Management

- Operations Research
- Management Information Systems (MIS)
- Project Management
- Research Methodology

➤ Short term courses attended

- Effective teaching : By Richard Felder, IUCEE, Infosys Mysore
- Leadership skills – Infosys , Mysore
- Operations Research - A three month proficiency course at Indian Institute of Science, Bangalore, India
- Advances in Neural Computing, JCE Mysore.
- Special Electrical Machines and Computer Aided Design, PSG, Coimbatore.
- Recent Trends in Stochastic Process, IISc, Bangalore.

- Energy Systems, JNTU, Hyderabad
- Recent trends in power electronics, IIT , Mumbai.

➤ **Conferences / Seminars / Training programmes conducted**

- Conducted Faculty Development Programme for the Faculty of JNTU affiliated colleges on ‘Modelling of Power System Components’, Dec 1-6 2003
- Conducted National Seminar on ‘ Emerging Trends in Power System Operation & Control’, Dec 27-29, 2003
- Conducted AICTE / ISTE QIP Short term program on ‘Applications of Power Electronics to Power systems’, December 2004.
- Conducted Management Training Programme for fresh recruits of ‘Navayuga Engineering Company Limited’, Visakhapatnam
- Conducted several workshops on ‘ Self Development’ for Engineering students.
- Coordinated workshops on “ Advanced digital signal processing”, “ Emerging trends in Communication”, “ Microcontrollers and VHDL” at RNSIT
- Resource person for training of Karnataka Power Corporation Ltd. Engineers, Reliance Energy Ltd., Dredging Corporation of India, Marine Engineers, Engineers from all over India trained at National Power System Training Institute, Bangalore.
- Soft-skill training programs for Engineering students to include communication skills, attitude development, Group Discussions, Interview facing and personality development.
- Teachers training programs to include classroom training, work organization, teaching methodology, teacher-student interaction, evaluation and assessment.
- Soft skill training for fresh recruits in Time management, communication, Goal setting, motivation and interpersonal skills

- Cordinated over 10 workshops at RNSIT for faculty and supporting staff of VTU affiliated colleges.

➤ **Laboratories established**

- Electrical AC and DC machines Lab
- High Voltage and Relays Laboratory
- Microcontroller and Microprocessor Lab
- Logic Design Lab
- Analog Electronics Lab
- Power System simulation lab

➤ **Projects Guided**

Guided over 20 M.Tech projects in the area of Power Engineering.

Guided one Ph.D. Student for thesis titled, ‘ Power quality improvement using UPQC’ at JNTU Hyderabad.

Currently guiding five Ph.D students working in the area of power quality and condition monitoring.

➤ **Books Published**

1. Adaptation Author of Indian Adapted Edition of Schaum’s Outline Series on “Power Systems”, Published by Tata McGraw Hill. 2005, Revised edition, 2009
2. Adaptation Author of Indian Adapted Edition of Schaum’s Outline Series on “Electric Circuits”, (Under Publication by Tata McGraw Hill),2006, Revised edition, 2010.
3. “Computer Techniques and Models in Power System Analysis” , published by I. K. International Pvt. Ltd., 2007
4. “Signals and Systems”, published by I.K. International Pvt. Ltd. 2008

5. The 8051 Microcontroller – architecture, programming and applications – Pearson - Sanguine publishers, Bangalore. 2009
6. Basic Electrical Engineering – Pearson- Sanguine, 2010
7. Artificial Intelligence and Artificial Neural Networks – Pearson Sanguine, 2010.
8. Digital Signal Processors : Architecture , programming and Applications – Pearson – Sanguine , 2011.

➤ **List of Publications : Enclosed**

Personal Profile

Date of Birth : 10.03.1963

Gender : Female

Marital status : Married with two daughters aged 19 and 9.

Languages known : Hindi, Kannada, Tamil and Telugu

Awards Won:

- Secured '**First Rank**' in Under Graduate Course
- Secured '**First Rank**' among all Engineering Post Graduate students of M.E.
- Smt. Sanjeevamma Krishna Setty Memorial Prize for securing **highest marks in Power Plant Engineering (1985)**.
- Sir M Visvesvaraya Centenary Celebration prize for securing **highest marks in B.E. (Electrical) (1985)**
- The U.V.C.E. Golden Jubilee Celebration Commendation for being the **best candidate among B. E. Electrical Graduates (1985)**.
- Sir E. Hanumaiah prize for securing **highest marks in B.E. (Electrical) (1985)**.
- B. K. Garudachar centenary commemoration prize for securing **highest marks among all M.E. graduates (1987)**.

List of Publications

Journals

1. "A Novel Power Flow Controller for Controlled Series Compensation", K.R. Padiyar, M.K. Geeta and K. Uma Rao, IEE proceedings on AC & DC Power Transmission, London, May,1996.
2. "Discrete Control of Series Compensation for stability improvement in Power Systems", K.R. Padiyar and K. Uma Rao, International Journal of Electrical Power and Energy Systems, Vol 19, No.5 PP 311-319, 1997
3. "Modelling and Control of Unified Power Flow Controller for Transient Stability", K.R. Padiyar and K. Uma Rao, International Journal of Electrical Power and Energy Systems, Vol 21 (1999) 1-11.
4. "Role of PI and fuzzy controllers in UPQC", ARPN (Asian research publishing network) Journal of Engineering and Applied Sciences., Vol 2, No2, April 2007.
5. "A simple method for real-time detection of voltage sags and swells in practical loads", accepted for publication in Elsevier EPE journal.
6. "Intelligent monitoring of induction motor for fault detection and analysis", Int Jrn of Electrical and Electronics Engineering.
7. "Frequency measurement and tracking algorithm for integrated grids", Electrical Power systems and computers, LNEE 99, Springer-verlag 2011

Conferences

International

1. "Discrete Control of TCSC for stability improvement in Power Systems", K.R. Padiyar and K. Uma Rao, IEEE Conference on Control Applications, New York, September 1995.
2. "Power Quality Assessment using artificial neural networks", K. Uma Rao and Ch. Mahendra, Int Conf. On Power Quality –Assessment of Impact, Nov , 2001, New Delhi

3. "Design, Control and Simulation of Unified Power Flow Controller using MATLAB," A. Jayalaxmi, G.Tulasi Ram Das and K. Uma Rao, IASTED International Conference on Power and Energy systems , June 2004, Greece.
4. "Design and Control strategy for Unified Power Quality Conditioner (UPQC), A. Jayalaxmi, G. Tulasi Ram Das and K. Uma Rao, International conference on Controls Automation and Communication systems, Bhubaneshwar, 22nd – 24th December 2004
5. " Unified Power Quality Conditioner for improving different power quality problems", A. Jayalaxmi, G. Tulasi Ram Das and K. Uma Rao, International conference on Energy , information technology and power sector, 28th -29th January 2005, Kolkata
6. Multifunction of a Unified Power Flow Controller", A. Jayalaxmi, G. Tulasi Ram Das and K. Uma Rao, Fifth International R&D Conference, Central board of irrigation and power , February 2005, Bangalore.
7. "Design of New Hybrid Fuzzy Controller for Direct Torque Control Based Induction Motor Drives" , A. Jaya Laxmi , G. Tulasi Ram Das, K. Uma Rao, International Conference on PEITSICON 2005, during 28th -29th January, 2005, Calcutta.
8. "Different control strategies for Unified Power Quality Conditioner at load side", A. Jaya Laxmi , G. Tulasi Ram Das, K. Uma Rao, 1st IEEE Conference on Industrial Electronics and Applications (ICIEA 2006), Marina Mandarin, Singapore during 24-26th May, 2006.
9. A. Jaya Laxmi , G. Tulasi Ram Das, K. Uma Rao, "High Speed Fault Identification in a HVDC system using Wavelet Modulus Maxima", Second International conference on Industrial & Information Systems (ICIIS-2007), University of Peredinya, Sri Lanka during 8th-11th August 2007.
10. A. Jaya Laxmi , G. Tulasi Ram Das, K. Uma Rao, "Power Quality Improvement using UPQC through Wavelet Transforms" International conference on Power Systems (ICPS-2007), CPRI, Bangalore & IEEE(PES) during 12th -14th December 2007.
11. "A Modified simple algorithm for detection of voltage sags and swells in practical loads", P. Meena, K. Uma Rao, Ravishankar Dikshit, Third International Conference on Power Systems, Kharagpur, IIT, India, Dec 27 - 29, 2009.
12. " Real time detection and analysis of PQ disturbances with DSP using Matlab embedded link to Code Composer Studio", P. Meena, K. Uma Rao,

Ravishankar Dikshit Third International Conference on Power Systems, Kharagpur, IIT, India, Dec 27 -29, 2009.

13. “Wireless RF smart glove control for Hexapod”, D.R. Akshay, K. Uma Rao, S. Sridhar, 2nd International conference on RF and Signal Processing Systems, KL University, Vijaywada. Dec 2009.
14. “DSP application for detection of voltage sags and swells in real time loads. “,P. Meena, K. Uma Rao, Ravishankar Dikshit , International conference on DSP, ICEDSP, Manipal, Dec 2009.
15. Comparative study of a single phase PWM based current source inverter”, S. Pradeepa, K. Uma Rao, Ravi Shankar Dixit, Int conference on Science and Engineering, Dayananda college of Engineering, Bangalore, April 2010.
16. “E-learning in Signals, Systems and Signal Processing through Matlab/Simulink”, P. Meena and K. Uma Rao, IEEE Int. Conf on Computational technologies in Electrical and Electronics Engineering, Russia, July 2010.
17. “A simple algorithm for fast detection and quantification of voltage deviations using space vectors”, P. Meena, K. Uma Rao, Ravishankar Dikshit IPEC 2010 , Singapore, Oct 27 -29, 2010.
18. “Frequency measurement and tracking algorithm for integrated grids”, accepted for presentation “, Int conf on Electric and Electornics(EEIC 2011), Nanchang China, June 20-22, 2011

National

1. “Structure Preserving Energy Function and Stability Boundary, Recent Developments”, K.R. Padiyar and K. Uma Rao, 8th National Power Systems Conference, IIT Delhi, Dec. 1994 PP-134-138.
2. “Investigations of Power Flow Control Scheme with Controlled Series Compensation”, K.R. Padiyar and K. Uma Rao, Third Workshop and Conference on EHV Technology, IISc, Bangalore, August 1995, PP 149-152.
3. “A Control Scheme for Unified Power Flow Controller to improve stability of Power Systems”, K.R. Padiyar and K. Uma Rao, 9th National Power Systems Conference, IIT Kanpur, Dec. 1996.

4. “Bang – Bang Control of Unified Power Flow Controller to improve Stability of Power Systems”, K. Uma Rao, 13th National Convention of Electrical Engineers, IEE West Bengal, Nov 1997, PP 45-48.
5. “Modelling of Thyristor Controlled Series Capacitor”, K. Uma Rao, Trends and Challenges in large Interconnected Power Systems, REC Warrangal, 1998, PP-23-244.
6. “Introducing Custom Power for Power Quality enhancement in India”, K. Uma Rao, 15th National Convention of Electrical Engineers – “Power-99”, IEE, Kerala, Dec. 1999.
7. “Socio-Economic considerations in restructuring of power industry”, K.Uma Rao and CVK.Bhanu, National seminar on Economics of development in power sector in developing nations, Nov 2001, Nagpur, pp 1.8 – 1.11
8. “Socio-Economic issues in power sector reforms in India”, K.Uma Rao and C.V.K.Bhanu, Poster paper session at National Power System Conference, IIT Kharagpur, Dec 2002
9. “ Application of financial instruments to power sector”, National seminar on Recent Trends in Power Sector, Trivandrum, Oct, 2002
10. “ A Critique of the Power Sector Policy Process in Andhra Pradesh”, SreeKumar .N., M. Thimma Reddy, K. Uma Rao, Seminar on ‘Policy Processes in Andhra Pradesh, Hyderabad, Feb 27 –Mar 01, 2003
11. “ Discrete Control of SVC for improvement of Damping ”, K.Uma Rao, Sam Prakash & P. K. Das, National Conference on FACTS, Kumaraguru College of Engineering, Coimbatore, August 2003
12. “Expert System Development for fault diagnosis to improve Power System Reliability”, K. Uma Rao & Babita Jain, National Conference on Recent Trends in Reliability & Power Systems, RGM College of Engineering, Nandyal, October 2003.
13. “ Microprocessor based Static Var Compensator Control”, P. Paul Clee & K. Uma Rao, National Conference on Recent Trends in Reliability & Power System, RGM College of Engineering, Nandyal, October 2003.
14. “Design, Control and Simulation of Unified Power Flow Controller” , A. Jaya Laxmi, G. Tulasi Ram Das, K. Uma Rao, National Conference on Emerging Trends in Power System Operation and Control at Gayathri Vidhya Parishad College of Engineering, VIZAG during December 2003.

15. "Control Strategy of Unified Power Flow Controller", A. Jaya Laxmi, G. Tulasi Ram Das, K. Uma Rao, National Conference on Digital Convergence for Quality Education conducted by Computer Society of India at Guru Nanak Engineering College, Hyderabad during December 2003.
16. "Design & Control of Power Quality using Active Power Quality Conditioner", A. Jaya Laxmi, G. Tulasi Ram Das, K. Uma Rao, Recent Advances in Electrical Engineering (EAR-2004), Department of Electrical Engineering, JNTU College of Engineering, Anantapur on 4th December 2004.
17. "Adaptive Unified Power Flow Controller for improvement of Transient Stability performance", T A. Jaya Laxmi, G. Tulasi Ram Das, K. Uma Rao, Twelfth National Power Systems Conference (NPSC 2004) held at IIT, Chennai, during 27-30 December 2004.
18. A. Jaya Laxmi, G. Tulasi Ram Das, K. Uma Rao, "Comparison of PI & Fuzzy control strategies of Unified Power Quality Conditioner", International Conference Recent Advances of Computer Applications to Electrical Engineering, 28-31 September 2005, IIT Rourkee, Uttar Pradesh, India.
19. A. Jaya Laxmi, G. Tulasi Ram Das, K. Uma Rao, "Analysis & Simulation of Unified Power Quality Conditioner with various control strategies", 68th Annual Meeting of Institution of Engineers (Khairatabad) on 29th October 2005.
20. "Design and control strategy of Dynamic Voltage Restorer", Recent Advances in Electrical Engineering, A. Jaya Laxmi, G. Tulasi Ram Das, K. Uma Rao, Department of Electrical Engineering, JNTU College of Engineering, Anantapur on 10th December 2005.
21. "Design of PI & Fuzzy control strategies for Unified Power Quality Conditioner at load side", A. Jaya Laxmi, G. Tulasi Ram Das, K. Uma Rao, International Seminar and tutorials at Central Power Research Institute, Bangalore on 20-22nd December, 2005
- 22., "Comparison of PI & ANN controllers for Unified Series Shunt Compensator (UPQC)", A. Jaya Laxmi, G. Tulasi Ram Das, K. Uma Rao, 2006 IEEE Power India Conference, New Delhi during 10-12th April, 2006.

Others

1. "Search for excellence in Engineering Education and Training", K. Uma Rao and R.Umesh, IEE VSP Local Centre, 1997 Engineers Day, PP-13, 14.
2. "Integration of multiple dimensions for Quality Improvement of Technical Institutions", K.Uma Rao, ISTE Annual Convention and National Seminar on "Human Values in Technical Education ", Bhubaneswar, Dec. 2001
3. "A.H. Maslow's Need Hierarchy Applied to Technical Institutions", The Indian Journal of Technical Education, Vol 25, No 4, Oct-Dec 2002, pp 87-91.