ANNUAL REPORT (2008-09)

1. New courses developed

1. Ravindra Arora:
   - (An advanced level elective web course on High Voltage Engineering that has been developed under the National Program on Technology Enhanced Learning(NPTEL), of MHRD. It is accessible at [www.nptel.iitm.ac.in](http://www.nptel.iitm.ac.in) since Jan 2008.)

2. Laxmidhar Behera:
   - “Mobile Robotics,” University of Ulster, N. Ireland.

3. Santanu K. Mishra:
   - EE 662: Control techniques in power electronics

4. S.C. Srivastava:
   - “Selected Topics in ECE: Advance Power Systems” Graduate course developed and offered in the Spring 2009 semester at ECE Department, Mississippi State University, USA.

2. Books and book-chapters published


3. Research papers published in journals


4. Research papers published in conference proceedings (as a full paper)


5. Seminars and invited talks presented:


12. S. N. Singh : Key Note speaker at All India Seminar on “Energy Management in Indian Perspective; Efficiency Improvement and Energy Conservation in Power & Utilities & Emerging Technologies in the Alternative Energy for Power Generation”, October 17-19, 2008 at IE(I), Lucknow.


6. Conferences attended outside IIT Kanpur

Laxmidhar Behera:

- IFAC World Congress, Seoul, July 2008
- World Congress on Computational Intelligence (WCCI), 2008, in Hongkong, June 2008.

Parthasarathi Sensarma:


S. N. Singh:

- IEEE Conference & Exhibition on Control, Communication and Automation, INDICON 2008, IIT Kanpur, 11-13 December, 2008 (Session Chairman)

S. C. Srivastava:

- 2009 Power Systems Conference and Exhibition (PSCE09), March 15-18, 2009, Seattle, Washington, USA.
• North American SynchroPhasor Initiative (NASPI) Working Group Meeting during October 16-17, 2008 at Electric Power Research Institute (EPRI) office, Charlotte, NC, USA

7. Other Activities

(a). Technologies Developed

• R. Potluri and P. Sensarma: Graphical LCD-based Human-machine interface for a digital automatic voltage regulator for captive power plants. Sponsored by BHEL Bhopal.

• P. Sensarma and R. Potluri: A DSP-based controller platform for automatic voltage regulator applications. Sponsored by BHEL Bhopal.

(b). Industries visited and visits to other Institutes for research

• S.P. Das: Visited GE India Technology Centre Private Limited, Bangalore for Consultancy from 2nd July 2008 to 17th July 2008.

• S. N. Singh:

   Visited POWERGRID SVC station Bhauti to show the SVC station to Course participants.
   Visited UPSIDC Ghaziabad for Third party checking of 33kV substation at Bagpat.

• S. C. Srivastava: Visiting Research Professor in the Electrical and Computer Engineering Department at Mississippi State University USA, for one year from 1st August 2008.

• P. K. Kalra:

   Visited Boeing, Seattle, USA for discussion on project proposal entitled “Prognosis and Diagnosis in HVAC Systems and Rotating Machinery”.
   Visited TVS Motors, Hosur, Bangalore for final Installation of hardware and software for project entitled “Condition Monitoring of Internal Combustion Engine”.

• Santanu K. Mishra:

   BSNL Field Trip: Visit to Kalyanpur and Lakhanpur to study power plant systems used within BSNL.
Visited Moserbear solar cell manufacturing facility in Greater Noida to discuss future technology and possible research collaboration.

(c). Continuing Education Activities

S.P. Das:

- Short Course (Doordarshan Sponsored) on “Design and Analysis of Microcontroller-based System with Embedded Technology” during Aug. 11-15, 2008 at IIT Kanpur. Participants were engineers from Doordarshan and Industry.

S. N. Singh:


S.C. Srivastava:


(d). Any other important activity not specified above

Laxmidhar Behera:

- Chaired three sessions in IFAC World Congress, Seoul, July 2008.

(e). Projects and Initiatives

- L. Behera, P. K. Kalra, K. S. Venkatesh, A. Dutta: Ongoing UKIERI Project with Univ. of Ulster, Magee Campus, N. Ireland on “Innovations in Intelligent Assistive robotics”, Funding amount: GBP 147,000.
• R. Potluri : Coordinator for “Knowledge upgradation program”, an initiative at Lohia-Starlinger, Chaubepur, Kanpur.

• Laxmidhar Behera (PI), PK Kalra (Co-PI) : Ongoing DRDO project on “Neural network based visual motor coordination of a 7 DOF redundant manipulator and FPGA implementation of neural control algorithms”, Funding Amount : 48.94 lakhs.

• Parthasarathi Sensarma : Co-ordinator for System Development within the Pan-IIT Solar Initiative of the Department of Science & Technology, Government of India.


• S. N. Singh, “Study on demand & energy charges against import of power during peak hours without drawl of active power”, Sponsored by UP Sug. Mills CogenAsso., Funding Amount Rs 210675/- (Completed).

• S. N. Singh, “Third party quality checking of works of UPSIDC”, Sponsored by UPSIDC, Funding Amount Rs 56180 (Ongoing).


• S.N. Singh and Anoop Singh, “Development of transmission pricing scheme for Orissa grid”, Sponsored by OERC, Funding Amount Rs 9.86 Lakhs (Ongoing).