CENTENARY CONFERENCE – EE, IISc

Technical Program

Day 1 - Dec 15, 2011

9:00 AM - 10:00 AM : Parallel Sessions

Session I-A : HV Materials  Venue: Hall-A
Session Chair: Prof. G.R.Nagabhushana, IISc

Characterization of Cu2S Contaminated Paper - Oil Insulation System of Power Transformers
Faheem Ahmed Khan, Mohd. Z. A. Ansari, J. Sundara Rajan

Measurement of Polarization and Depolarization current on Epoxy Composites with Nanometric Titania and Zinc Oxide fillers
B. Kishore Kumar, R. R. Patel, Nandini Gupta

Nano Filled Silicone Rubber as a Functional Material for High Voltage Outdoor Insulators
Joseph Vimal Vas, B. Venkatesulu, M. Joy Thomas

Session I-B : Machines & Drives  Venue: Hall-B
Session Chair: Prof. S.S. Murthy, IIT-D

High Power Induction Motor Drive for Public Electric Transportation System
Ranjan K. Behera, Shyama P. Das

An Improved Excitation System for Low Voltage Salient Pole Generators Utilizing Third Harmonic Power
Jiji K. S., Jayadas N. H., C. A. Babu

Study on Rotor Current Waveforms in an Inverter-fed Induction Motor Drive During Overmodulation
Pavan Kumar Hari V. S. S., G. Narayanan

Session I-C : Signal Processing I  Venue: Hall-C
Session Chair: Dr. S.V. Narasimhan, NAL

Auditory-Motivated Gammatone Wavelet Transform
Aniruddha Adiga, Arun Venkitaraman, Chandra Sekhar Seelamantula

Percussive transients detection in music using a human auditory loudness model
Balaji Thoshkahna, K. R. Ramakrishnan
Feedback active noise control based on forward-backward LMS predictor
S. Pavithra, S.V. Narasimhan

10:00 AM - 11:00 AM: Plenary Session I
Venue: Main Auditorium Session Chair: Prof. M.A.L. Thathachar, IISc

Networks, Connectivity and Governance
Prof. N. Viswanadham, INAE Distinguished Professor, IISc

11:00 AM - 11:30 AM: Tea/Coffee

11:30 AM - 1:00 PM: Parallel Sessions
Session II-A : PS: Deregulation & Pricing
Venue: Hall-A Session Chair: Dr. R Nagaraj, PRDC

Bacterial Foraging based Optimal Bidding Strategy in a Competitive Electricity Market
J. Vijaya Kumar, D.M. Vinod Kumar

Primary Operating Reserve - A New Concept for the Cyprus Power System
Stavros Stavrinos, Suri Vemuri, Srinivas Pillutla, F. S. Prabhatara

Computation of new interaction indices for Indian Multi-infeed HVDC system using RTDS
J. Sreedevi, C. Ahalya, K.S. Meera, R.S. Shivakumara Aradhya

A Benchmarking Process For Determining Monthly Energy Savings
Anoop Kulkarni, Arvind M. T.

Day Ahead Centralized Electricity Market Clearing using Multi Objective Optimization considering Voltage Dependent Load Models
S. Surender Reddy, A. R. Abhyankar, P. R. Bijwe

Session II-B : PE Power Supplies
Venue: Hall-B Session Chair: S K Biswas, Jadavpur Univ

Design Challenges of Low to Medium Power Pulsed DC-DC Converters for Hirel Applications
Bhoopendrakumar Singh, Sreenivasa D. Reddy, T. Kanthimathinathan, Vinod S. Chippalkatti

A Feedback-Clamped Average Current Mode Controller Based Universal and Adaptive Optimal Battery Charging System
R. K. Singh, Santanu Mishra
Large-signal Linearization of a Boost Converter using The Dynamic Linearizing Modulator
Kapil Jha, Santanu K Mishra

A Novel Method of Processing the Experimental Data for Loss Budgeting in a ZVS PWM DC-DC Converter
Utsab Kundu, Sandeep A. S., Veesam Koteswar Rao, Souvik Chattopadhyay

Design of 2.4 kW Telecom Rectifier With High Power Density
Karuppuswamy C., Soma Sekhar, Daiva Prakash, Venkatraman S., Pratap M., G.K.M. Naidu

Session II-C: Speech Processing
Venue: Hall-C
Session Chair: Prof. B. Yegnanarayana, IIIT-H

Speaker verification under degraded condition using vowel and non-vowel like regions
Gayadhar Pradhan, S. R. M. Prasanna

Epoch Estimation in Speech Signals Using Spectral Zero-Crossing Rate
Ravi R. Shenoy, Chandra Sekhar Seelamantula

Exploring Sparse Representation Classification for Speaker Verification in Realistic Environment
Haris B. C., R. Sinha

Exploration of Artificial Bandwidth Expansion for Improving Childrens ASR in Mismatched Condition
Sunil Y. , S. Ghai, Rohit Sinha

A Comparison of Prosody Modification using Instants of Significant Excitation and Mel-Cepstral Vocoder
Bajibabu B., Ronanki Srikanth, Sathya Adithya Thati, Bhiksha Raj, B. Yegnanarayana, Kishore Prahallad

Class-Specific GMM based Intermediate Matching Kernel for Classification of Varying Length Patterns of Speech using Support Vector Machines
Dileep A. D., C. Chandra Sekhar

1:00 PM - 2:00 PM: Lunch

2:00 PM - 3:00 PM: Parallel Sessions of Invited Talks

Session III-A: Recent advances in transmission system cost allocation methods An Indian Case Study
Venue: Hall-A
Session Chair: N Murugesan, C P R I, Bangalore
Prof. S.A. Soman, Indian Institute of Technology, Mumbai
Simple Low Cost Techniques for Improving Power Quality
Prof. M. Ramamoorty, Former Director General, Central Power Research Institute

Session III-B :
Venue: Hall-C
Session Chair: Prof. V.V.S. Sarma, IISc

Zero time liftering: A new approach for analysis of speech signal
Prof. B. Yegnanarayana, International Institute of Information Technology, Hyderabad

Toward Quantitative Radiology
Prof. Jayaram Udupa, University of Pennsylvania, Philadelphia, USA

3:00 PM - 3:30 PM : Tea/Coffee

3:30 PM - 5:00 PM : Parallel Sessions

Session IV-A : Measurement and Protection
Venue: Hall-A
Session Chair: Dr. S R Kolla, Bowling Green State Univ

A Reinforcement Learning Approach to Demand Response
T. P. Imthias Ahamed, S. Danish Maqbool, N.H. Malik

A USB-based Multi-channel Frequency Recorder For Power System Applications
Ajayrama K., Vinayaka G. Yaji, K.N. Shubhanga

ANN Approach to Discriminate Normal and Different Types of Fault Currents in a Sample Power System Using Signature Patterns
G. S. Sheshadri, H. N. Suresh, R. Nagaraja

A Novel Measurement Technique for Fast Fault Discrimination in Crowbar Application
B.C. Raval, V.P. Patel, K. Patel, H. Lakhani, Patel A.N.

A Novel Current Differential Protection Scheme for Multi-terminal Transmission Lines
Snehal V. Unde, Sanjay S. Dambhare

Model Based Design of Overcurrent Relay for FPGA Implementation
Nikesh Dodwani, Vishal Kumar

Session IV-B : Induction Generators and Renewable Energy
Venue: Hall-B
Session Chair: Dr. Bhim Singh, IIT D

Design and Development of a Novel Single-Phase Self-Excited Induction Generator for Bio-Energy based Power Generation
S. S. Murthy, Bhim Singh, V Sandeep, Gurdiyal Singh,
Stand-alone Variable Speed Wind Energy Conversion System with Squirrel Cage Induction Generator and Battery Storage
Shailendra Sharma, Bhim Singh

Application of p-q Theory for Power Quality Improvement on Hybrid Isolated Micro-Grid
Miloud Rezkallah, Ambrish Chandra

New Controller for Self Excited Induction Generator using Integral Cycle Control
S. S. Murthy, Rajesh Kr Ahuja, Pius A.J. Pinto

Stability Analysis and Control of Renewable Driven Islanded and Grid Connected Microgrids
Prashant U. Patel, V. Sarkar

Emulation of Wind Turbine Characteristics based on separately excited DC motor using LabVIEW
A. S. Satpathy, N. K. Kishore, N.C.Sahoo

Session IV-C : Communication Systems

Common Transmission Power with CSMA Protocol
Srilatha Kanamaluru, Lawrence Jenkins

Detection of Wormhole Attack in MANETs using Dual Phase Technique
K. V. Arya, Vaibhav Gupta, Prerna Vashistha


Dual Performance Enhancement with Joint Optimization over Fading MAC in WSN with Varying Sensor SNR
Aniketh Venkat, R. Muralishankar, H. N. Shankar

A Completely Blind Channel Estimation Technique for OFDM Using Generalized Constellation Splitting and Modified Phase-Directed Algorithm
Sameera Bharadwaja H., D. K. Mehra

Real-time systems: Inter control center communication protocol
Nagarani Thota, Rohith M Kotabagi
Day 2 - Dec 16, 2011

9:00 AM - 10:00 AM: Parallel Sessions

Session V-A: HV Testing
Venue: Hall-A
Session Chair: Dr. R.S.S. Aradhya, C P R I

Impact of Ultra-Violet Radiation on an Artificially Polluted Silicone Rubber During Inclined Plane Tracking Test
S. Ganga, N. Vasudev, V. Asai Thambi, R.S. Shivakumara Aradhya, A. Sudhindra

Effect of nearby conducting objects on the Induced Currents in Simple down Conductors due to an Indirect Lightning Strike
Vinoda Shivanand, Vishwanath Hegde, Udaya Kumar

Locating and Assessing the Severity of Mechanical Deformations in Power Transformer Windings
Shah Krupa Rajendra, Ragavan K.

Session V-B: Multilevel Inverters
Venue: Hall-B
Session Chair: Dr. Ambrish Chandra, ETS, Montreal

Measurement of current from the Rotor to the ground through the Bearing in the 5-level neutral point clamped inverter fed 3-phase modified induction motor and computation of voltage total harmonic distortion
B. Muralidhara, A. Ramachandran, R. Srinivasan, M. Channa Reddy

A Space Vector based PWM Switching Algorithm for a Four-Level Dual Inverter fed Open-end Winding Induction Motor Drive
V.T. Somasekhar, B. Venugopal Reddy

Analytical Expression for RMS DC Link Capacitor Current in a Three-Level Inverter
K. S. Gopalakrishnan, Soumitra Das, G. Narayanan

Session V-C: Signal Processing II
Venue: Hall-C
Session Chair: Prof. Svetha Venkatesh, Curtin Univ

On the performance of Linear and Decision Feedback Equalizers in IIR and reverberation environments
Pallaviram Sure, B. Chandra Mohan

Active Noise Control by Delayless Subband Adaptive filter based on Discrete Cosine Harmonic Wavelet Transform (CHWT)
S.V. Narasimhan, S. Veena

New unbiased Steiglitz-McBride IIR adaptive filter Its Robust and Variable step-size versions and application to Active Noise Control
S.V. Narasimhan, C. Nagaveni

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**10:00 AM - 11:00 AM**: Special Session – A Tribute to late Prof. V.T.Ranganathan

Venue: Main Auditorium          Session Chair: Prof. K. Gopakumar, IISc

Overview of academic contributions of Prof. VTR
Dr. G. Narayanan, IISc

National Mission on Power Electronics Technology (NaMPET)
Shri T.K. Sarkar, Department of Information Technology, Govt of India

Research collaboration between C-DAC and Prof. VTR
Mrs. Fathima C-DAC, Trivandrum

Collaboration between Integrated Electric Company and Prof. VTR
Shri Vijayaraghavan

**11:00 AM - 11:30 AM**: Tea/Coffee

**11:30 AM - 1:00 PM**: Parallel Sessions

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<th>Venue: Hall-A</th>
<th>Session Chair: N P Padhy, IIT Roorkee</th>
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<td>Nonlinear Model and Control of a Two Area Power System with Unified Power Flow Controller</td>
<td>Jose. P. Therattil, P. C. Panda</td>
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<td>Modified Robust Pole Assignment Controller Design for Automatic Generation Control</td>
<td>Ajit Kumar, Indraneel Sen, Kiran Kumar Challa</td>
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<td>Optimization of Market Based Contracts for AGC Using Evolutionary Genetic Algorithm</td>
<td>S.Farook, P. Sangameswara Raju</td>
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<td>Unified Controller for Reliable Coordination of Wind-Solar-Hydro Energy Conversion Systems</td>
<td>J. Ram Prabhakar, Ragavan K.</td>
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<th>Session VI-B: Power Conversion</th>
<th>Venue: Hall-B</th>
<th>Session Chair: Dr. Rajib Datta, GE</th>
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<td>A Multi Output Hybrid High Frequency Resonant Inverter for Induction Heating Cooking Application</td>
<td>P. Sharath Kumar</td>
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<td>DSC based Modified Unipolar Switching Techniques for Single Phase Z Source Inverter</td>
<td>Dheerendra Singh, A. Ananda Kumar, V. Sashank Mani</td>
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Transformer less Intelligent Power Substation Connects 13.8 kV and 480 V Grid using 15kV SiC-IGBTs
Kamalesh Hatua, Sumit Dutta, Awneesh Tripathi, Seunghun Baek, Giti Karimi, Sachin Madhusoodhanan, Subhashish Bhattacharya

Design and Implementation of a Single Phase Power Electronic Interface for a Grid Interactive Wind Turbine System
Elizabeth P. Cheriyan, Jino M. Pattery

Front-End Buck-Rectifier with Reduced Filter Size and Single-Loop Control
Poonam Chaudhary, Parthasarathi Sensarma

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<th>Session VI-C: Image Processing I</th>
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<td>Pseudo Color Based Eyebrow Segmentation and Key-Points Extraction for Expression Recognition</td>
<td>Session Chair: Prof. P.K. Bora, IIT G</td>
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<td>Anima Majumder, L. Behera, Venkatesh K. Subramanian</td>
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| Sparse Representation of Color Images in Different Color Spaces | Mrinalini Sachan, P.K. Bora |
| TexTraCC Text extraction using color-based connected component labeling | T. Kasar, A. G. Ramakrishnan, Amey Dharwadkery, Abhishek Sharma |
| Face Recognition with Real-world Images Acquired from an Outdoor Surveillance Camera by Compensating Degradation | Shiva Rudrani, Sukhendu Das |
| Automatic image inpainting for the facial images of monuments | Chintan Parmar, M.V. Joshi, Mehul Raval, Mukesh Zaveri |

1:00 PM – 2:00 PM : Lunch

2:00 PM – 3:00 PM : Parallel Sessions of Invited Talks

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<td>Converting Indian R&amp;D in Power Electronics into Indigenous Products</td>
<td>Session Chair: Prof. S.K. Sinha, SJBIT</td>
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<td>Prof. Sujit K. Biswas, Jadavpur University, Kolkata</td>
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| Advance Power Electronic Converters for Renewable Energy Systems | Prof. Prasad N. Enjeti, Texas A&M University, College Station, TX, USA |

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Space-time super-resolution of videos  
Prof. Subhashis Banerjee, Indian Institute of Technology, New Delhi

When was the last time your project made you smile?: Doing Computer Science that builds Social Capital  
Prof. Svetla Venkatesh, Curtin University of Technology, Perth, Western Australia

3:00 PM – 3:30 PM : Tea/Coffee

3:30 PM – 5:00 PM : Parallel Sessions

Session VIII-A: Power System Analysis  
Venue: Hall-A  
Session Chair: Dr. F S Prabhakara

Determination of Individual Generator Participation in the Swing Modes  
T.G. Giri Kumar, S. Krishna

Identification and Classification of Network Faults in Power Transmission Systems Using Multi Class Support Vector Machines  
Rimjhim Agrawal, D. Thukaram

Accelerated Waveform Relaxation Techniques for Real-Time Testing of Power System Controllers  
S. P. Panda, A. M. Kulkarni

Placement of Phasor Measurement Units based on Stability Criteria  
V. Seshadri Sravan Kumar, D. Thukaram

Power swing detection using synchronized frequency and angle measurement  
Vinaya A. Ambekar, Sanjay S. Dambhare

Session VIII-B: Power Quality and Active Filters  
Venue: Hall-B  
Session Chair: Prof. Prasad Enjeti, Texas A&M

Digital Implementation of Reference Current Generation Schemes for Current Error Space Phasor Hysteresis Controller based Shunt Active Power Filters  
Siddharthsinh K. Chauhan, Mihir C. Shah, P. N. Tekwani

Designing an algorithm for the Charging/Discharging of Electric Vehicles Batteries for mitigating the voltage imbalance.  
Sarthak Gupta, Prateek Jain, Mukesh Singh, Praveen Kumar, Indrani Kar

Harmonic Mitigation through Sliding DFT based Single-Phase Active Power Filter  
S. Chandrasekaran, Ragavan K.
Operation of Current Controlled Three Phase Grid Connected VSI Under Non-ideal Grid Condition
Anirban Ghoshal, Vinod John

Simulation and Comparison of Ride through Capability of Adjustable Speed Drive for type A, type B and type E voltage sag and swell with Cuk converter
K. R.Ramela, V.Sureshkumar

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Session VIII-C: Image Processing II
Venue: Hall-C
Session Chair: Prof. S. Banerjee, IIT D

Monocular Visual Patient Monitoring for Frameless Stereotaxy
Amit Kale, Manivannan Sundarapandian, Vipin Gupta

Application of Compressed Sensing to Synthetic Aperture Radar Imaging
Bibhuti Bhusan Mohapatra, Sumana Gupta

Matching of Images using a Gaussian Mixture Model based Intermediate Matching Kernel for Retrieval of Scene Images
T. Veena, C. Chandra Sekhar

Automated 3D Position Tracking of Laparoscopic Instruments in a Do-It-Yourself Simulator
M.S. Raghu Prasad, M. Manivannan

Database of ASAMYUTA HASTAS A step towards intelligent systems for Bharatanatyam
S. Padam Priyal, Prabin K. Bora

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**Day 3 - Dec 17, 2011**

**9:00 AM - 10:00 AM**: Parallel Sessions

Session IX-A: PS Studies: New Tools
Venue: Hall-A
Session Chair: Prof. K.R. Padiyar, IISc

Dynamic Security Assessment and Classification using Support Vector Machines
S. Kalyani, K. S. Swarup

Embedded Cost Allocation with Shapley Approach Using Tracing and Sensitivity Factors to Identify Coalition Cost A Comparative Study
Anuprita Sandeep Mishra, Baseem Khan, Ganga Agnihotri

Power System Damping Improvement by Robust SVC Controller Design using Loop-Shaping Technique
G.Y. Rajaa Vikhram, S.Latha
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<td><strong>11:00 AM - 11:30 AM</strong></td>
<td>Tea/Coffee</td>
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<td><strong>11:30 AM - 1:00 PM</strong></td>
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### Session IX-B: Systems Science
Venue: Hall-C  
Session Chair: Dr. Raghu Nambiar, SISL

- Temporal Envelope Fit Using Gamma Distribution Functions  
  Arun Venkitaraman, Chandra Sekhar Seelamantula
- Protocols for Highly Available Call Process Systems  
  Seema Jain, Lawrence Jenkins
- 3D Reconstruction using FDK Algorithm with no backprojection weight from completed projections in lateral truncation situation A performance evaluation study  
  A. V. Narasimhadhan, K. Sumith, Kasi Rajgopal

### 10:00 AM - 11:00 AM: Plenary Session II

**Venue:** Main Auditorium  
**Session Chair:** Prof. Anurag Kumar, IISc

- The coming age of cyber physical systems  
  Prof. P. R. Kumar, Professor and College of Engineering Chair in Computer Engineering  
  Texas A&M University, College Station, TX, USA

### 11:00 AM - 11:30 AM: Tea/Coffee

### 11:30 AM - 1:00 PM: Parallel Sessions

- **Session X-A: Power System Case Studies**  
  Venue: Hall-A  
  Session Chair: Dr. P.V. Balasubramanyam, CPRI

- SSR studies for Series Compensated Lines in Northern Region of India A Case Study  
  J.Sreedevi, K.S.Meera, V.V.S.K.Chakravarthi

- MatSim - A Tool to Perform Power System Stability Studies  
  Vinayaka G. Yaji, Abhishek G.S. and K.N. Shubhanga

- Dynamic Phasor Analysis of Self Excited Induction Generator with Passive Unbalanced Load  
  Mahipalsinh C. Chudasama, A. M. Kulkarni

- A Case Study of Overvoltage Performance of Multiple GIS interfaced Transmission system  
  Meera K.S., R.S. Shivakumara Aradhya, S.G. Huprikar, Rajesh Vadangekar

- Application of Dynamic Distribution Network Pricing Model on Practical Indian Utility  
  N.P. Padhy, Saurabh Chandra, Rohit Bhakar
Session X-B: HV Fields and Analytics
Venue: Hall-B
Session Chair: Prof Ramu T S, IISc

Numerical Modeling of Electric and Magnetic Field Distribution in a 765 kV Switchyard
A. Pradeep, S. Mallick

Studies on Correlation between parameters of PDC and RV Measurements carried out on Power Transformers
S. Sarkar, T. Sharma, A. Baral, B. Chatterjee, P. Rajamani, D. Dey, S. Chakravorti

Induced Voltage in a Shielded Buried Cable due to High Power Electromagnetic Sources
K. Sunitha, M. Joy Thomas

An Inquisitive Analysis on the Spatio-Temporal Variation of Return Stroke Current Essential for Producing Observed Remote Electro-Magnetic Fields
Rosy Balaram Raysaha, Udaya Kumar

A Finite Element Method Based Approach for Evaluating the Sensitivity of Faraday-Type Electromagnetic Flow Meter for Liquid Sodium Flow
Udaya Kumar, K. K. Rajan

Session X-C : Machine Learning
Venue: Hall-C
Session Chair: Prof. Shivakumar Sastry, U. Akron

Influence Limitation in Multi-Campaign Social Networks A Shapley Value Based Approach
Premm Raj H., Y. Narahari

Polyceptron A Polyhedral Learning Algorithm
Naresh Manwani, P. S. Sastry

Learning Automata based Online Input-rate Control for Composable Conveyor Systems
Chandana Cheerala, Shivakumar Sastry, P.S. Sastry

Apriori-based Episode Discovery under Interval Span constraints
Avinash Achar, Ibrahim A., P. S. Sastry

Pattern Clustering using Cooperative Game Theory
Swapnil Dhamal, Satyanath Bhat, Anoop K. R., Varun R. Embar

1:00 PM – 2:00 PM : Lunch