

Preface



I3SET 2016 focused on to bring together innovative academicians and industrial experts in the field of science, engineering and technology to a common forum. The conference is sponsored by *Technical Education Quality Improvement Programme (TEQIP)*.

The idea of the conference is for the scientists, scholars, engineers and students from the universities all around the world and the industry to present ongoing research activities on the relevant topics and hence to foster research activities between the universities and the industries. I3SET provides a valuable opportunity for them to exchange their ideas face to face together. I3SET is very special for its strong organization team, dependable reputation and wide sponsors from all around the world. It will bring you an unexpected harvest. In the future, you may be a member of our big family. Therefore, it will be a good opportunity to share your innovative thoughts with other renowned researchers in respective research fields across the world.

In this International Conference, a total of 79 papers were accepted for presentation against submission of 139 papers overall. All presented papers will be available online in Springer Link. We have the privilege to invite research-based papers, articles on the broad theme of the conference in relevant track areas from esteemed Institutions in the country and abroad. English is the official language of the conference. The conference proceedings are published in Springer—Lecture Notes in Networks and System (LNNS).

The I3SET 2016 has the following announced Tracks:

Track 1: Nonconventional Energy and Advanced Power Systems

Subtrack 1.1 Solar Energy:

Solar photovoltaic technology, Solar-thermal energy, Solar energy technology, Solar architecture

Subtrack 1.2 Hydro Energy:

Sea Energy, Wave energy, Wave energy system, Tidal energy, Tidal sea current, Turbo machinery, Mini hydro

Subtrack 1.3 Bio Energy:

Bio Fuels, Energy from waste, Bio mass & Bio gas

Subtrack 1.4 Hydrogen Energy:

Hydrogen and energy storage and transportation, Hydrogen and fuel cell, Carbon sequestration

Subtrack 1.5 Energy from Depth of Earth:

Geothermal energy, Ocean-thermal energy

Subtrack 1.6 Wind Energy:

Wind turbine, Wind mill, Wind farm, Wind potential assessment (including offshore)

Subtrack 1.7 Energy & Solar Passive Architecture:

Energy conservation in built in system, Solar heating & cooling, Zero energy building

Subtrack 1.8 Energy Conservation Measures:

Optimization techniques, Application of artificial intelligence in energy system, Grid interactive system, Micro grid and smart grid, Energy storage, Fuel cell, Electric and hybrid vehicles, Efficiency in irrigation

Track 2: Nanotechnology and Applications

Subtrack 2.1 Nanomaterial Particles and Applications:

Nanofabrication technologies, Carbon nano-tubes and grapheme technologies, Nanocomposites, Characterization and properties of nanomaterials, Simulation Modelling of nano-materials

Subtrack 2.2 Nano Science and Technology:

Nano electronics, Nano medicine, Medical nanotechnology

Subtrack 2.3 Molecular Nanotechnology:

Nano robotics, Advanced grapheme science, Metal nanocrystal, Nano molecular material design

Subtrack 2.4 Nanotechnology for Energy Systems:

Nano-optimization for fuel cell and solar cell, Nano-membrane and nanosieve

Subtrack 2.5 Emerging Areas of Nanotechnologies:

Sprintonics, Nanomagnetism, Nanoprinting, Nanopacking

Track 3: Pattern Recognition and Machine Intelligence**Subtrack 3.1 Biometrics:**

Biometric systems and applications, Multi-biometrics, Forensic biometrics and its applications, Fingerprint recognition, Face recognition, Iris recognition, Soft biometrics

Subtrack 3.2 Human Computer Interaction:

Human computer interaction, Display hardware, Character and text recognition, Handwriting recognition, Graphics recognition, Human body motion and gesture based interaction, Affective computing, Facial expression recognition, Group interaction: analysis of verbal and non-verbal communication, Gate recognition, Speaker recognition

Subtrack 3.3 Computational Intelligence:

Fuzzy computing, Rough computing, Granular computing, Evolutionary computing, Neural computing, Case based reasoning

Subtrack 3.4 Machine Learning:

Statistical, Syntactic and structural pattern recognition, Machine learning and data mining, Symbolic learning, Active and ensemble learning, Deep learning, Cognitive science, Formal concept analysis, Brain modeling, Uncertainty analysis, Common sense reasoning, Natural language processing, Natural computing

Subtrack 3.5 Neural Network:

Artificial neural networks, Dimensionality reduction and manifold learning, Classification and clustering, Representation and analysis in pixel/voxel images, Support vector machines and kernel methods, Transfer learning, Semi-supervised learning and spectral methods, Model selection, Reinforcement learning and temporal models

Subtrack 3.6 Knowledge Discovery in Database:

Data mining & knowledge discovery, Image mining, Text mining, Computing with words, Web intelligence & semantic web, Social media mining, Crowd sourced computing

Subtrack 3.7 Cryptography:

Cryptography, Cryptology, Crypt-arithmetic, Visual cryptography, Steganography and Digital water marking

Track 4: Digital Signal and Image Processing**Subtrack 4.1:**

Signal, image and video processing

Subtrack 4.2:

Audio and acoustic processing and analysis

Subtrack 4.3:

Multimedia analysis, indexing and retrieval

Subtrack 4.4:

Sensor array & multichannel signal processing

Subtrack 4.5:

Segmentation, features and descriptors

Subtrack 4.6:

Texture and color analysis

Subtrack 4.7:

Enhancement, restoration and filtering

Subtrack 4.8:

Image and video analysis and understanding

Subtrack 4.9:

Automatic speech and speaker recognition

Track 5: Modern Instrumentation, Control, Robotics and Automation

Subtrack 5.1 Networked and Distributed Control:

Intelligent control, Real time supervisory control, Adaptive control systems, Mobile autonomous systems

Subtrack 5.2 System Integration:

Embedded systems, Manufacturing systems, Sensors, Actuators, Modeling and simulation, MEMS and NEMS

Subtrack 5.3 Control Systems:

Real-time control, Intelligent control, Monitoring and supervision, Observers, Estimation and identification, Machine learning and pattern recognition, Nonlinear control, Robust control, Adaptive control, Optimal control, Digital control, Distributed and networked control, Control applications

Subtrack 5.4 Robotics:

Agriculture and field robotics, Robotic service and security, Entertainment and rescue robotics, Novel robotic locomotion

Subtrack 5.5 Multiagent and Collaborative Systems:

MACS, Biorobotics, Biomechatronics, Amphibionics, Aerobatics-UMV, Telerobotics.

Subtrack 5.6 Mechatronics:

Mechatronics applications for control and automation of renewable energy, Mechatronics education, Virtual labs, e-learning in mechatronics, Bio-mechatronics, Autotronics, Mechanism design and applications

Track 6: Civil Engineering and Structural Design

Subtrack 6.1 Civil and Urban Engineering:

Structural & construction engineering, Road and bridge engineering, Geotechnical engineering, Hydraulic engineering, Coastal engineering, Earthquake engineering, Materials engineering

Subtrack 6.2 Architecture and Design:

Urban planning and design, Building technology science, Art design and Landscape architecture, Aesthetic and landscape energy, Ecological control and intelligent control, Sustainable infrastructure

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Urban planning and design, Building technology science, Art design and Landscape architecture, Aesthetic and landscape energy, Ecological control and intelligent control, Sustainable infrastructure

Subtrack 6.4 Environmental Engineering:

Environment and climate change—Global warming, Green construction and environment protection, Environment science and health, Environment and social development, Environment and economic restructuring, Environment and pollution cost, Water supply and sewage processing

Subtrack 6.5 Transportation Engineering:

Acquisition, Processing and publishing of traffic information, Traffic guidance and forecast, Urban traffic control and congestion pricing, Vehicle safety and emission, Automatic incident detection, Intelligent transportation and logistics

Track 7: Real-time and Embedded Systems, Communication and Devices

Subtrack 7.1 Real-time Systems:

RTOS, RT scheduling, Middleware Systems, Media processing and transmission, RT aspects of wireless sensor network

Subtrack 7.2 Embedded Systems:

Embedded systems architecture, Multi-core embedded systems—Dual core/core, Embedded software and compilers, Ubiquitous and distributed ES, Reconfigurable computing architecture- Android

Subtrack 7.3 Cloud Computing:

X as a Service, Big data management and analysis, Virtualization technology, Cloud security and privacy, Cloud programming model and tools, Service oriented architecture

Subtrack 7.4 Embedded Systems and its Application in Healthcare:

DSP based medical devices and implants, Body sensor network, Wearable sensors and systems, Fuzzy systems and signals in medical electronics, Medical electronics

miniaturization and design, Smart materials and medical electronics, Artificial support for rehabilitation

Subtrack 7.5 Modern Communication Systems

Track 8: Advanced Optimization Techniques

Subtrack 8.1 Multiobjective Optimization:

Multiobjective programming (MOP), Multi Criterion Decision Making (MCDM), Minsum/Priority based goal programming

Subtrack 8.2 Hierarchical Decision Making:

Bi-Level Programming (BLP), Multi-Level Programming (MLP)

Subtrack 8.3 Decision Making in Imprecise environment:

Stochastic programming—CCP and DCP, Fuzzy programming- Fuzzy Decision, Fuzzy multiobjective programming, Fuzzy goal programming, Interval programming

Subtrack 8.4 Evolutionary Computation:

Evolutionary strategy, Evolutionary algorithm, Genetic algorithm, Multiobjective genetic algorithm (MOGA), Genetic optimization

Track 9: Biotechnology, Biomedical Instrumentation and Bioinformatics

Subtrack 9.1 Biotechnology:

Pharmaceutical biotechnology, Therapeutic drug, Nonobiotechnology, Plant biotechnology: cross breeding, green revolution, Animal biotechnology: cloning and genetic engineering, Boitech health care: transgenic animals and clinical therapy, Biopharmaceuticals, Inoculation and incubation, Molecular modeling, Genome analysis

Subtrack 9.2 Biomedical Image Analysis:

Medical image mining, Vascular imaging, Structural biology, Computer aided detection and diagnosis, Medical imaging and diagnosis

Subtrack 9.3 Biomedical Instrumentation and Measurement:

Bio-sensors and bio MEMs, Medical robotics, Biosystem modeling, Biotelemetry and telemedicine, Brain Computer Interface (BCI)

Subtrack 9.4 Bioinformatics:

Computational biology, Genomics and proteomics, Sequence analysis, Structural bioinformatics, Immuno- and chemo-informatics, Transcriptomics, Next generation sequencing

Track 10: Outcome Based Education

Subtrack 10.1:

Preparing students for governance and leadership

Subtrack 10.2:

Industry academy partnerships

Subtrack 10.3:

Entrepreneurship and innovation

Subtrack 10.4:

Formulation of outcome based curriculum and syllabus

Subtrack 10.5:

Innovative methods in teaching and learning

Subtrack 10.6:

On-line engineering education

Subtrack 10.7:

Women in engineering

Subtrack 10.8:

Student voice in the transformation process

Subtrack 10.9:

Stakeholders feedback and satisfaction survey

Kalyani, India

Kalyani, India

Kalyani, India

Kalyani, India

Kolkata, India

Swapan Bhattacharyya

Sabyasachi Sen

Meghamala Dutta

Papun Biswas

Himadri Chattopadhyay



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