



TECHNICAL EDUCATION QUALITY IMPROVEMENT PROGRAMME
TEQIP-II 1.2.1 INITIATIVE CoE/CME]

Workshop Series under
Center of Excellence of Macroelectronics
[Nine Workshops of one week duration each]

May, June and July 2016



Rashtreeya Sikshana Samithi Trust

R. V. College of Engineering

(Autonomous Institution affiliated to VTU, Belagavi)

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The TEQIP TEAM of RVCE

Prof. K N Subramanya, Principal

Prof. K N Raja Rao, TEQIP Co-ordinator

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Prof. N S Narahari, Nodal Officer – Finance

Prof. S Satyanarayana, Nodal Officer- Procurement

Prof. P Ramakanth Kumar, Nodal Officer – Academics

Prof. Pushpa Agrawal, Nodal Officer – Equity Assurance

Prof. Radhakrishna, Nodal Officer – Civil & Environment





About the College

R.V. College of Engineering (RVCE), Bengaluru, Karnataka, South India, is one of the premier Engineering institutes of the country. Established in 1963, RVCE celebrated its Golden Jubilee in the year 2015. The college currently has about 5600 students and over 400 faculty and 250 support staff. RVCE currently offers 12 Bachelors and 22 Masters Programs in various disciplines of Engineering with an annual intake of about 1750 students. There are 16 centres of research with provision for Ph.D. Studies. RVCE has set a vision “Leadership in Quality Technical Education, Research & Innovation, through Teamwork, with a focus on Development of Sustainable and Inclusive Technology”. Keeping with the vision the faculty and students are encouraged to take up interdisciplinary research projects. As of now, RVCE has funded projects to the tune of over Rs.450 millions. RVCE was rated 35th in the NIRF rating conducted by MHRD. RVCE has been awarded “Engineering College of the Year-2015” by the Higher Education Review Magazine for Enhancing Employability during December 2015. RVCE has been certified as Global League Institute by Great Place to Study Research Institute (GPSRI) on the 19th November 2015 at prestigious venue – House of Commons, UK by Rt. Hon. Virendra Sharma, MP. RVCE believes in skill and knowledge development among the faculty. This is achieved through FDP and Research initiatives. The Institution is looking at promoting Entrepreneurship in a big way.

Center of Excellence

RVCE is among the 30 colleges who have been granted CoE under TEQIP, sub component 1.2.1, in Macroelectronics. This center focuses on technologies related to Large Area Flexible Microelectronics (LAFM). There are Interdisciplinary faculty groups from EC, TE, ME, EE, EI,BT, Chemical, Chemistry, Physics who are involved in carrying out research

in thematic areas. Around 50 faculty members are involved in various projects. The thematic areas in which faculty and researchers are working are:

- Amorphous Solar PV and coatings for thermal applications
- Large area & Flexible Microelectronics
- RF & Tera Hertz Communication
- Vacuum Nanoelectronics
- Sensors & MEMS

An interdisciplinary research center has been set up which caters to various projects of center of excellence.

As part of promoting and facilitating research, RVCE is conducting a series of workshops from 30th May to 23rd July 2016 in the areas of current interest. The workshops are interdisciplinary in nature. Apart from expert lectures, hands-on training in relevant hardware and software is also included.

No. seats available:

25 for each workshop on first come first serve basis (selected participants will be informed by e-mail)

Registration Fee (per workshop):

Students/ Full Time Researchers	₹ 1,500 plus 15% Service Tax
Faculty	₹ 2,500 plus 15% Service Tax
Professionals	₹ 4,000 plus 15% Service Tax

Registration Fee can be paid through Demand Draft drawn in favor of Principal RVCE and COECME payable at Bengaluru and sent along with the registration form.



Programmes Schedule

Sl. No.	Lead Department	Broad Area	Title of the Workshops	Dates of Workshop	Last Date for Registration	Faculty Coordinators
1.	Electrical and Electronics Engg.	Solar PV	Workshop on Modern Solar PV Materials Fabrication and Simulation	30-05-2016 to 04-06-2016	26-05-2016	Dr. R. Jayapal Email: jayapalr@rvce.edu.in Mobile: 9945175832 Dr. K. Uma Rao Email: umaraok@rvce.edu.in Mobile: 9980909893
2.	IDRC	Thin Films	Workshop on Thin Film Fabrication Techniques	06-06-2016 to 11-06-2016	31-05-2016	Dr. M. Krishna Email: krishnam@rvce.edu.in Mobile: 9980480001 Dr. T.K. Subramanyam Email: subramanyamtk@rvce.edu.in Mobile: 9945567140
3.	IDRC	Thin Films	Workshop on Materials Characterization	13-06-2016 to 18-06-2016	06-06-2016	Dr. M. Krishna Email: krishnam@rvce.edu.in Mobile: 9980480001 Dr. G. Satheesh Babu Email: satheeshbabug@rvce.edu.in Mobile: 8722341998
4.	Electronics & Instrumentation Engg.	MEMS	Workshop on MEMS based Biomedical Engineering	13-06-2016 to 18-06-2016	06-06-2016	Dr. Anand Jatti Email: anandjatti@rvce.edu.in Mobile: 9880576374 Prof. Rajine Swetha R. Email: rajineswethar@rvce.edu.in Mobile: 9739408293

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TEQIP-II Initiative [Sub Component 1.2.1 - CoE/CME]

Sl. No.	Lead Departments	Broad Area	Title of the Workshops	Dates of Workshop	Last Date for Registration	Faculty Coordinators
5.	Tele Communication Engg.	RF Circuits	Workshop on Design and Simulation of Passive RF Circuits	20-06-2016 to 25-06-2016	13-06-2016	Prof. R.K. Manjunath Email: manunathrk@rvce.edu.in Mobile: 9901568568 Dr. K. Sreelakshmi Email: sreelakshmik@rvce.edu.in Mobile: 9845530311
6.	Mechanical Engg.	Polymers	Workshop on Polymer and Polymer Nano Composites Processing	27-06-2016 to 02-07-2016	20-06-2016	Dr. G.R. Rajkumar Email: rajkumargr@rvce.edu.in Mobile: 9739728089 Dr. R. Sridhar Email: sridharr@rvce.edu.in Mobile: 9740400717
7.	Biotechnology	Biosensors	Workshop on Development and Applications of Biosensors	04-07-2016 to 09-07-2016	27-06-2016	Dr. Neeta Sivakumar Email: neeta@rvce.edu.in Mobile: 9980168724 Dr. H.N. Ravishankar Email: ravi_hn@rvce.edu.in Mobile: 9538616802
8.	Electronics & Communication Engg.	Thin Film and Sensors	Workshop on Modeling and Simulation Thin Film Devices	11-07-2016 to 16-07-2016	04-07-2016	Prof. N. Ramavenkateswaran ramavenkateswarann@rvce.edu.in Mobile: 8880269442 Prof. Ravishankar Holla ravishankarholla@rvce.edu.in Mobile: 9480111040
9.	Computer Science Engg.	Sensors for IoT	Workshop on Internet of Things: Sensors to Cloud Analytics	18-07-2016 to 23-07-2016	11-07-2016	Dr. G.S. Sharvani Email: sharvanigs@rvce.edu.in Mobile: 9880468121 Dr. G.S. Mamatha Email: mamathags@rvce.edu.in Mobile: 9886311120





Workshop on Modern Solar PV Materials and Fabrication and Simulation

Date: 30th May - 4th June 2016

About Workshop

Solar energy and micro-grids are assuming great importance globally. Various materials are being tried to enhance efficiency and manufacturability of flexible Solar panels. Keeping in mind the thematic area of the CoE, this workshop is aligned to benefit academia, researchers and industry personnel. Invited lectures have been arranged from experts from IISc, IITs and Industries who will share their insights, research experience and latest market trends. The workshop will focus on research in the field of solar materials, fabrication and characterization. Training on simulation of the PV materials and design of solar cells using Lumerical Solutions software tool will also be provided with hands on for 20hrs in association with industry partner. One day industrial visit is also arranged as a part of the workshop to get an exposure to PV manufacturing process.

Objectives

- Disseminate knowledge of Solar PV technologies
- Discuss the current research in PV materials

- Learn techniques of fabrication and characterization of PV cells
- Training on Lumerical Solutions software tool for design of PV cells

Outcomes

- Understand and compare the performance of different types of PV cells
- Design solar cells using Lumerical Solutions software tool

Prerequisite

Faculty, researchers and Industry professionals with basic knowledge of solar systems.

Equipment / Software Used

- Lumerical Solution Software Tool
- PVCVD Fabrication Equipment for Solar Coating
- PV Simulator for Characterizations

Coordinators

Dr. R. Jayapal and Dr. K. Uma Rao, Department of Electrical & Electronics Engg.

Program Schedule

Date & Time	Session 1 :: 09.30am -11.00am		Session 2 :: 11.30am - 01.00pm		Session 3 :: 02.00pm - 03.30pm		Session 4 :: 03.45pm - 05.15pm
30-05-16	Inauguration and Keynote Address	TEA BREAK	Nano-structured Materials for PV	LUNCH BREAK	Nano-structured Materials for PV		Characterization of PV Cells
31-05-16	Comparative Performance of Different PV Arrays		Comparative Performance of Different PV Arrays		Amorphous Silicon PV Panels		Fabrication Techniques
01-06-16	Introduction to Lumerical Solutions		Simulation with Lumerical Solutions		Software Session		Software Session
02-06-16	Lumerical Solutions for PV Cell Design		Lumerical Solutions for PV Cell Design		Software Session		Software Session
03-06-16	Tutorial		Assignments		Software Session		Software Session
04-06-16	Industrial Visit		Valedictory				





Workshop on Thin Film Fabrication Techniques

Date: 06th June - 11th June 2016

About Workshop

At RVCE a clean room and laboratory has been set up as interdisciplinary research facility. The CoE is extensively using this facility for fabrication and characterization. This workshop is being conducted to provide the basic knowledge and understanding on thin film fabrication techniques related to thin film nanotechnology. Practical exposure on thin film fabrication techniques such as Thermal and E-beam evaporation, Magnetron sputtering, Plasma enhanced chemical vapor deposition, Cathode arc deposition, etc.

Objectives

- Basic Knowledge on vacuum based thin film nanotechnology
- Provide practical training on various thin film fabrication techniques
- Fabrication of thin film device

Outcomes

- Develop thin film devices using different coating methods
- Select thin films for various applications

Prerequisite

Faculty, researchers and Industries who have basic knowledge of physics, electronics and material science.

Equipment Used

- Thermal and E-beam evaporation,
- Magnetron sputtering,
- Plasma enhanced chemical vapour deposition,
- Cathode arc deposition

Coordinators

Dr. M. Krishna, Department of Mechanical Engg. and IDRC
Dr.T.K. Subramanyam, Department of Physics and IDRC

Program Schedule

Date & Time	Session 1 :: 09.30am -11.00am		Session 2 :: 11.30am - 01.00pm		Session 3 :: 02.00pm - 03.30pm	Session 4 :: 03.45pm - 05.15pm
06-06-16	Inauguration and Keynote Address	TEA BREAK	Fundamentals of Thin Film Tech.	LUNCH BREAK	Exposure to Clean Room Facilities	
07-06-16	Thermal and e-beam Evaporation		Practical Session		Practical Session	
08-06-16	Magnetron Sputtering		Practical Session		Practical Session	
09-06-16	PECVD		Practical Session		Practical Session	
10-06-16	Cathode Arc Deposition		Practical Session		Practical Session	
11-06-16	Device Fabrication				Valedictory	





Workshop on Materials Chacterization

Date: 13th June - 18th June 2016

About Workshop

R.V.College of Engineering has acquired state of the art characterization instruments for studying material's chemical composition , morphology, structural behavior, chemical behaviour and electrical characteristics. As a part of the obligations to share the knowledge with fellow faculty and researchers, this workshop is being conducted. The themes are aligned to the academic, research and industry. Experts in characterization will share the applications and methodologies with case study and hands on. The workshop provides a brief introduction on the basic principles of material characterizations. Training is provided for characterization using SEM, XRD, nano-indenter, Profilometry and Raman spectroscopy.

Objectives

- Impart knowledge on basic instrumentation for characterization
- Demonstrate sample preparation for different characterization
- Data analysis and interpretation of the results.

Outcomes

- Understand basic knowledge on the principles characterization techniques.
- Explore to characterization techniques
- Knowledge of Data analysis and interpretation.

Prerequisite

Faculty, research scholars and industrialists who have basic knowledge of material characterizations are appreciable.

Equipment Used

Profilometry (contact type) – AP Research Make.
X-RAY Diffraction (XRD) – Shimadzu Make.
Scanning Electron Microscopy (SEM) – Hitachi Make.
Raman Spectroscopy – Witech Make and Nano indenter

Coordinators

Dr. M. Krishna, Department of Mechanical Engg. and IDRC
Dr. G. Satheesh Babu, Scientific Officer, IDRC

Program Schedule

Date & Time	Session 1 :: 09.30am -11.00am		Session 2 :: 11.30am - 01.00pm		Session 3 :: 02.00pm - 03.30pm		Session 4 :: 03.45pm - 05.15pm
13-06-16	Basic Materials Characterization	TEA BREAK	Basic of Profilometry	LUNCH BREAK	Importance of SEM in Material Science		Clean Room Visit
14-06-16	Raman Spectroscopy		X-ray Diffraction		Material Phase Transformation Studies		Demonstration
15-06-16	Lab Session		Lab Session		Lab Session		Lab Session
16-06-16	Lab Session		Lab Session		Lab Session		Lab Session
17-06-16	Lab Session		Lab Session		Lab Session		Lab Session
18-06-16	Technical Discussion			Valedictory			





Workshop on MEMS Based Biomedical Engineering

Date: 13th June - 18th June 2016

About Workshop

This workshop focuses on academic, research and industry and research opportunities in health care sector involving MEMS design for the diagnostic and implantable devices. It provides platform to engineers, researchers, working professionals and entrepreneurs for knowledge sharing. One day industrial visit is also arranged as a part of the workshop. The themes are aligned to the academic, research and industry. Invited lectures are from prominent experts from IISc and Industries; sharing their insights, research experience and latest market trends.

Objectives

- Creating awareness on biomedical instrumentation and MEMS design

- Motivating to work in healthcare and diagnostic instrumentation design
- Training on MEMS design using COMSOL

Outcomes

- Understand Design Biomedical & MEMS circuits (Lab-on-chip)
- Design BioMEMS using COMSOL

Prerequisite

Faculty, researchers and Industry professionals with basic knowledge of biomedical instrumentation

Coordinators

Dr. Anand Jatti and Rajine Swetha R., Department of Electronics and Instrumentation Department

Program Schedule

Date & Time	Session 1 :: 09.30am - 11.00am		Session 2 :: 11.30am - 01.00pm		Session 3 :: 02.00pm - 03.30pm		Session 4 :: 03.45pm - 05.15pm
13-06-16	Inauguration & Keynote Address	TEA BREAK	Introduction to Biomedical Instrumentation	LUNCH BREAK	Signal Acquisition Requirements		Design Considerations for Bio-medical Device
14-06-16	Modeling of a Biomedical System		Biomedical Transducer Design		Laboratory Session on Biomedical Signal Acquisition and Processing		
15-06-16	Bio Sensor Design		Application of Sensors in Devices		Applications of Implantable Sensors	Introduction to COMSOL	
16-06-16	Introduction to MEMS Design		MEMS Device Applicability		MEMS Design using Intellisuite		Lab Assignments
17-06-16	Introduction to COMSOL		Design Essentials using COMSOL		Lab Session on using COMSOL		
18-06-16	Research Opportunities and Technical Discussion		Valedictory				





Workshop on Design and Simulation of Passive RF Circuits

Date: 20th June - 25th June 2016

About Workshop

The Center of Excellence is working on passive RF circuits on Flexible substrates, which is the need for future communication devices. This workshop focuses on design, simulation and optimization of active and passive components. The proposed training course is structured to provide hands on training for the design, Simulation and optimization of different types of antennas and couplers, leading to fabrication of the same. Experts in the field from IISc, IITs and Industries will share their insights, research experience and latest market trends.

Objectives

- Impart knowledge on Patch antenna design, Feeding techniques, narrowband and wideband concepts
- Impart knowledge on characterization of Antennas and Couplers

Outcomes

- Acquire skill sets on ANSYS HFSS software usage.
- To design, simulate and optimize passive circuit configurations & structures.
- Gain knowledge to fabricate and characterize passive components.

Prerequisite

Faculty, Researchers and Industry participants who have knowledge of Electromagnetic Theory, Antenna and Radio Wave Propagation.

Software / Equipment used

- Network Analyser and Spectrum Analyser
- ANSYS HFSS

Coordinators

Prof. R.K. Manjunath and Dr. K. Sreelakshmi, Department of TCE.

Program Schedule

Date & Time	Session 1 :: 09.30am - 11.00am		Session 2 :: 11.30am - 01.00pm		Session 3 :: 02.00pm - 03.30pm	Session 4 :: 03.45pm - 05.15pm
20-06-16	Inauguration and Keynote Address	TEA BREAK	Introduction to Passive Circuit	LUNCH BREAK	Introduction to Couplers	
21-06-16	Patch Antenna Design		Antenna Optimization Techniques		Introduction to HFSS	
22-06-16	RF Signal Feeding Techniques		Narrow Band, Wide Band and Multi-band Concepts		Hands-on Training	
23-06-16	Design of Antenna Array		Optimization of Antenna Array		Hands-on Training	
24-06-16	Design of Couplers		Optimization of Passive Circuits		Hands-on Training	
25-06-16	Fabrication Concepts		Characterization of Passive Circuits		Discussions	Valedictory





Workshop on Polymer and Polymer Nano-Composites Processing

Date: 27th June - 02nd July 2016

About Workshop

Sustainable and environment friendly materials are the requirement of the day. Several combinations are being tried. This workshop will highlight design and processing of some of these materials. The emphasis will be on hands on sessions on fabrication and characterization of polymer and polymer nanocomposites. The themes are aligned to the academic, research and industry. Invited lectures are from prominent experts from IISc, IITs and Industries sharing their insights, research experience and latest market trends related to polymer and polymer nanocomposites processing. This course is designed for faculty, researchers and industry personnel from mechanical, chemical, civil, polymer science and technology. It is framed based on micromechanics and damage mechanics of fibrous polymer composite materials. One day industrial visit is also arranged as a part of the workshop to get an exposure to composite component fabrication.

Objectives

- Introduction of polymers and polymer nanocomposites
- Address challenges in processing of polymer nanocomposites

- Training on polymer nanofibres, various methods of fabrication and characterization.

Outcomes

- Gain knowledge to fabricate polymer composites.
- Understand failure mechanism of polymer composites.
- Formulate the polymer composite properties for specific application.

Prerequisite

Faculty, researchers and Industry Professionals who have basic knowledge in Composites

Equipment/infrastructure used

Fabrication Facilities: FRP Laboratory for hand layup process, Twin Screw Extruder for processing of nanocomposites, Resin transfer moulding for component fabrication, Injection moulding.
 Characterization Facilities: UTM, Impact testing machine, SEM, XRD, AFM etc.

Coordinators

Dr. G.R. Rajkumar and Dr. R. Sridhar, Department of Mechanical Engg.

Program Schedule

Date & Time	Session 1 :: 09.30am - 11.00am	Session 2 :: 11.30am - 01.00pm	Session 3 :: 02.00pm - 03.30pm	Session 4 :: 03.45pm - 05.15pm
27-06-16	Introduction to Polymers and Polymer Nano Composites	Micromechanics of Polymers	Lab Session: Fabrication of FRP Composites	
28-06-16	Orthotropic Material Properties	Theory of Two-dimensional Angle Lamina	Lab Session: Processing of Nano Fillers Dispersed in Polymer Composites	
29-06-16	Volume Fraction Computation	Failure Criteria	Lab Session: Testing for mechanical properties	
30-06-16	Optimization Techniques	MiniTab for Optimization Techniques	Lab Session: MiniTab for DoE	
01-07-16	Characterization: DSC, SEM	Characterization: XRD, FTIR	Lab Session: Morphological Studies	
02-07-16	Industrial Visit		Valedictory	





Workshop on Development and Applications of Biosensors

Date: 4th July - 9th July 2016

About Workshop

Sensors are a part of any system where data acquisition and analysis is to be performed. Bio sensors have attained importance in recent years as they are sustainable and environment friendly. Many researchers are attempting Bio sensors for various applications. The theme of this workshop is aligned to the academic, research and industry. Experts from IISc, IITs and R&D organizations will be sharing their research experience and latest market trends. The workshop deals with preparation and application of biosensors in the field of health, food and environment. The mode of workshop is through lecture followed by hands on session each day. One day visit to industry and state of art laboratory is also arranged as a part of the workshop to get an exposure to biosensor fabrication and applications. The workshop is organized in association with Biosensor Society-India.

Objectives

- Create awareness on importance and use of biosensors

- Learn design and development of biosensor
- Apply the knowledge in various field

Outcomes

- Capacity to fabricate biosensor
- Apply the knowledge for analysis and diagnosis

Prerequisite

Faculty, researchers and Industries who have basic knowledge in basic science and electronics

Equipment/infrastructure used

- Microprocessor, Biosafety Cabinete, Gass Meter, Analyser
- Characterization Facilities: UTM, Impact Testing Machine, SEM, XRD, AFM etc.

Coordinators

Dr. Neeta Sivakumar and Dr. H.N.Ravishankar,
Department of Biotechnology.

Program Schedule

Date & Time	Session 1 :: 09.30am -11.00am		Session 2 :: 11.30am – 01.00pm		Session 3 :: 02.00pm – 03.30pm	Session 4 :: 03.45pm – 05.15pm
04-07-16	Overview and Advances in Biosensors: What is the reality?	TEA BREAK	Nanobiosensors for health monitoring and targeted delivery	LUNCH BREAK	Visit to Clean Room	Lab Session: Design and Fabrication of biosensor
05-07-16	Biosensors for food safety		Biophotonic based biosensors		Color based detection of metal ions as contaminants in food. Chemiluminescence based sensors	
06-07-16	Industrial Visits		Industrial Visits		Industrial Visits	
07-07-16	Micro fluidics and lab on a chip		Mobile diagnostics (point of care) and affordable diagnostics		Demo on commercially available instruments for Point of care.	
08-07-16	Non-invasive glucose measurement		Biosensors in Biomedical application		Lab Session: Non-invasive glucose measurement	
09-07-16	Printed electrode and associated electrodes for biosensors		E-nose and its applications		Lab Session: Design and Fabrication of E-nose Valedictory	





Workshop on Modeling and Simulation of Thin Film Devices

Date: 11th July - 16th July 2016

About Workshop

One of the thematic areas of the Center of Excellence is fabrication of devices and sensors using thin films. Thin film is used for many applications in almost all fields by academia, researchers and industries. Keeping its importance, this workshop is arranged with invited lectures from prominent experts from IISc, IITs and Industries who have rich experience in this field. The workshop focuses on modeling of advanced semiconductor thin film devices. Training on simulation of thin film devices using SILVACO tool will be provided. One day visit to Center of Nano Science Lab, IISc. is also arranged as a part of the workshop to get an exposure to thin film fabrication and characterization.

Objectives

- Modelling of fabrication process of thin film devices
- Simulation of electrical characterization of thin film devices
- Design circuits based on thin film device

Outcomes

- Knowledge on thin film electronic devices and sensors
- Explore software for simulation TFT devices
- Design of different analog/digital circuits

Prerequisite

Faculty, researchers and Industries who have basic knowledge on semiconductor physics

Software used

SILVACO-TCAD : ATHENA and ATLAS
SILVACO-EDA : UTMOST and GATE WAY

Coordinators

Prof. N. Ramavenkateswaran and Prof. Ravishankar Holla,
Department of Electronics & Communication Engg.

Program Schedule

Date & Time	Session 1 :: 09.30am - 11.00am		Session 2 :: 11.30am - 01.00pm		Session 3 :: 02.00pm - 03.30pm		Session 4 :: 03.45pm - 05.15pm
11-07-16	Inauguration & Keynote Address	TEA BREAK	Thin film Science and Materials	LUNCH BREAK	Thin Film Device Physics	Visit to Center of Nano Science Lab, IISc.	Challenges in Thin Film Design
12-07-16	Modeling of Organic Semiconductors		Emerging Semiconductor devices for Flexible Electronics		Compact Modeling for Semiconductor Devices		Beyond CMOS Devices
13-07-16	Introduction to TCAD		TCAD Simulation		Practical Session: Simulation of TFT, Organic Devices		Practical Session: Simulation of TFT, Organic Devices
14-07-16	Spice Parameter Extraction from TCAD		Practical Session: Parameter Extraction of TFT, Organic Devices		Circuits Simulation on EDA		Software Session
15-07-16	Industry Visit (Center of Nano Science Lab, IISc.)				Valedictory		
16-07-16	Optimization Techniques in Device Simulation						





Workshop on Internet of Things : Sensors to Cloud Analytics

Date: 18th July - 23rd July 2016

About Workshop

Internet of Things is coming in a big way with 22 billion devices to be connected by 2020. There is going to be big data on cloud. This will require skill and knowledge to put data and analyze the same. Academia and professionals will play an important role in the next two years; therefore this workshop plays an important role by inviting experts from IISc, IITs and Industries to share their insights, research experience and latest market trends. This workshop will deal with fundamentals of IoT framework including sensors, data analytics, design and development of IoT applications. Training will be provided on Qualnet for simulation of sensor networks; Hadoop, MapReduce and Aneka for cloud; building IoT applications using Arduino, Raspberry Pi boards.

Objectives

Provide basics of IoT framework.
Train on Qualnet, Hadoop, MapReduce, and Aneka tool.
Design and implementation of simple IoT applications.

Outcomes

Exposure to current research in IoT framework.
Expertise in use of IoT related simulation packages.
Design and implement simple IoT applications.

Prerequisite

Faculty, researchers and Industries who have knowledge of basics of computer networking and data base management systems.

Hardware / Software used

Qualnet for sensor network simulation
Hadoop and MapReduce for data analytics
Aneka for cloud simulation
Arduino and Raspberry Pi boards for building IoT applications

Coordinators

Dr. G.S. Sharvani, Department of Computer Science & Engg. and
Dr. G.S. Mamatha, Department of Information Science & Engg.

Program Schedule

Date & Time	Session 1 :: 09.30am - 11.00am		Session 2 :: 11.30am - 01.00pm		Session 3 :: 02.00pm - 03.30pm	Session 4 :: 03.45pm - 05.15pm
18-07-16	Inauguration and Keynote Address	TEA BREAK	Introduction to IoT Frame Work	LUNCH BREAK	Practical Session - Sensor Networks	
19-07-16	Practical Session - Wireless Simulation		Practical Session - Simulation of Sensor Networks		Practical Session - Data Collecting and Routing and Performance Evaluation	
20-07-16	Introduction to Data Analytics Importance in IoT		Practical Session - Map Reduce		Practical Session - Hadoop	
21-07-16	Cloud Computing in IoT		Practical Session - Aneka Cloud		Practical Session - Aneka Cloud	
22-07-16	Introduction to Building IoT, Applications using Bread Board Kits		Practical Session using IoT Kits		Practical Session using IoT Kits	
23-07-16	Case Study on Cloud in IoT			Valedictory		



R.V.College of Engineering : Bengaluru - 560 059
TEQIP-II INITIATIVE :: Sub-Component1.2.1

Title and Date of the Workshop

Registration Form

Name _____

Program _____

Department _____

Specialization _____

Gender

M

F

Category

GM

SC

ST

OTHERS

Contact Details _____

Mobile _____

E-mail _____

Registration Fee Details

DD No./Date _____

Amount _____

Name of the Bank/Branch _____

Place: _____

Date: _____

Applicant's Signature

Signature of the Head of Institution/
Sponsoring Authority
(for sponsored candidates)

(Please feel free to photocopy if more than one participant is registering)

