Department of Electrical Engineering

National Institute of Technology Calicut

Report on Expert Technical Training Session

Department of Electrical Engineering has organized an expert technical training session in association with IEEE PES Society and Electrical Engineering Association on 14th March 2017 under the sponsorship of **TEQIP II**. **Mr. Rajesh M.,** Scientist/Engineer, Embedded Systems Group, National Institute of Electronics and Information Technology Calicut (NIELIT Calicut) was invited to give an expert training session on **"Internet of Things - IoT".** The session mainly focused on the following important topics under IoT.

1. Basics of IoT- Architecture
2. Data Collection through IoT Sensors
3. Sending data through wireless medium
4. Configuring communication gateway
5. Uploading data into cloud storage
6. Retrieving data from cloud and using for typical application
7. Applications in EE

Profile of the Speaker

Mr. Rajesh M.

Scientist/Engineer 'C'

Embedded Systems Group

NIELIT Calicut

Qualification	M.Tech Digital Electronics & Communication
Area of Specialization	Embedded System Design & Wireless communication
Experience	More than 8 Years
Research Interests	Wireless Sensor Network, IOT, Device Driver Development , RTOS
Duties & Responsibilities	Coordinator – Short Term Project , Faculty for M.Tech. Embedded System and Short Term Courses , Student project guidance , Apprentice Training , Consultancy

About the Programme

The training session started at 1:30 Pm in Electrical PG block with approximately 45 PG/PhD students from the department. Speaker started the session with a brief introduction about IoT and its relevance with growing nature of its requirements around the globe. Then he moved to IoT hardware architectures with Wireless Sensor Networks (WSN) and explained about the basic sensors used in industrial IoT environment. He could very well explain the interfacing of sensors with IoT network through micro-controllers with possible communication protocols. He stressed on the use of Gateways for IoT as a protocol converter and an interface between cloud environment and physical objects/things. He underlined the use of cloud framework for the easy implementation and access of IoT sensed data over a wide network. He also made beautiful insight on cloud framework for data base management and data analytics.

He demonstrated an example from electrical engineering background with energy consumption monitoring of lamps with IoT monitored regulator. The data is pushed into cloud network using MQTT protocol and analyzed the energy consumption using MATLAB online codes. Also he made a demo on smart street lighting system which can be turned on/off remotely.