

**Conducted by**  
Department of Electronics and  
Communications. ECE, UCE ,OU

### **Registration Information**

Name: \_\_\_\_\_

Designation: \_\_\_\_\_

Organization: \_\_\_\_\_

Address for Correspondence: \_\_\_\_\_

\_\_\_\_\_

Phone: (O) \_\_\_\_\_ Mobile: \_\_\_\_\_

Email: \_\_\_\_\_

Category: Faculty/Research Scholar/Industry/  
Engineer / Scientist/Others/UG or PG Student

Membership : IEEE/IETE/IE

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i) Cheque: Pay to "Convenor-Events" or Pay to Account  
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#### **Registration Fee:**

Govt. Organizations / PSUs & Other Industry -Rs. 2500/-  
Faculty -Rs. 1200/-  
ME/M.Tech & full time Ph.D Students -Rs. 800/-  
BE / B.Tech Students -Rs. 500/-  
For all Members of IEEE/IETE/IE 20% Discount

### **Date and Schedule:**

The workshop will be held on 29th December 2018. The Workshop is conducted in two sessions, one in the morning and one in the afternoon. The talks by experts from government, reputed researchers, and industrial experts will be spread over two sessions. This will be followed by panel discussion comprising of panelists from research org, Industry and technology experts, indicating the future applications/directions and opening up new avenue of opportunities.

09:00-09:30 Registration  
09:30-10:30 Inauguration & keynote by Chief Guest  
10:30-11:00 Tea

#### **Session 1**

11:00-11:45 Evolution of Cognitive Radio(CR)  
and Technologies  
Prof Md Zafar Ali Khan,IIT, Hyderabad  
11:45-12:30 Software Defined Radio(SDR) – Design,  
Issues and solutions  
Prof Y Yoganandam, Former Director  
(FD) NERTU  
12:30-13:15 Spectrum sensing and sharing methods  
Prof Y Yoganandam, FD NETRU  
13:15-14:00 Lunch

#### **Session 2**

14:00-14:45 Hardware and Tools for CR/SDR  
Dr C Nanda Kishore,  
MathWorks India Pvt Ltd  
14:45-15:30 Smart antennae for CR/SDR  
Dr M Lakshminarayana, Sc'H'(Retd),DLRL  
15:30-15:50 Tea  
15:50-16:35 White space utilization for CR  
Dr N Venkatesh,VP Redpine Signals  
16:35-17:00 CR NW architecture and standards  
Dr L.Nirmala Devi, Dept. ECE, OU

#### **Sponsorship:**

<b>Platinum</b>	<b>Rs 75,000/-</b>	<b>Gold</b>	<b>Rs 50,000/-</b>
<b>Silver</b>	<b>Rs 30,000/-</b>	<b>Bronze</b>	<b>Rs 15,000/-</b>

#### **Complimentary Registration :**

i) Platinum - 9 Delegates      ii) Gold - 6 Delegates  
iii) Silver - 3 Delegates      iv) Bronze - 1 Delegate

**Sponsor's Company Name & Logo will be Displayed at the Venue.**



## **One Day Workshop on 'Recent Innovations in Cognitive Radio and Software Defined Radio'**

29th December, 2018

Organized by

**Department of Electronics &  
Communication Engineering(ECE)  
University College of Engineering, OU**

*Jointly with*

**OU ECE Alumni Association**

With the Technical Support of

**"Research and Training Unit for  
Navigational Electronics" (NERTU)  
&  
IEEE, Hyderabad Section**



**Venue:**

Seminar Hall, Department of ECE  
Hyderabad 500007, Telangana.  
Website: [www.uceou.edu](http://www.uceou.edu),  
Ph. No: 040-27098213

### **Department of ECE, Osmania University:**

The Department of Electronics & Communication Engineering (ECE) was established in the year 1959 and late Prof.K.Krishnan Nair was its first founder head, who steered it to an outstanding department. Excellence, Creativity and Enterprise is the hall mark of the department. It was also instrumental in establishing and developing the Departments of Biomedical Engineering and CSE, and Research and Training Unit for Navigational Electronics at OU.

### **NERTU, Osmania University:**

The Research and Training Unit for Navigational Electronics (NERTU),OU, Hyderabad is established in 1982. It is the focal point for research and training in the areas of Electronic Navigation in India. Since its inception, NERTU has trained several Scientists, engineers, academicians and research scholars from many organisations in Navigation, GNSS etc. NERTU has successfully executed 60 sponsored and consultancy projects funded by DRDO, ISRO, DST, MIT, ECIL, HAL, BEL, AICTE and ASL.

### **IEEE, Hyderabad Section:**

The IEEE Hyderabad Section is one of the most active sections of the IEEE in India. Since 1984, the section has grown to nine society chapters: PES/IAS/PELS.CS,MTT/AP/EMC,COM/SP,CAS/ED, CIS/GPRS,PHOTONICS,TMS,Education Chapter; Two affinity groups: WIE and YP. It Regularly organises National and International conferences and has received best section award several times.

### **About OU ECE Alumni Association (OUECEAA):**

The aim of the OUECEA Association is to help the Department of ECE and its students in academics and professional activities. It helps in placement of students, offers scholarships and extends assistance whenever required. It also conducts talks, seminars and workshops regularly so that students are aware of the current technologies.

**Objectives and Scope:** This workshop brings in to focus the technological advances and innovations in the area of CR/SDR like smart antennas, spectrum sensing methods and machine adaption, protocols and applications in several areas.

Workshop is aimed to create a platform to know the state of the art technology and exchange of ideas among participants. This Workshop opens up new avenues for Indian startups and entrepreneurs. The Government organizations, Public sector under takings, Private sector companies, Startups, Entrepreneurs, Researchers and individuals desirous to make a career in CR and SDR will be benefited immensely

### **About Workshop**

Cognitive Radio (CR) built on the top of Software Defined Radio(SDR), is the evolving technology and is going to be the landscape of wireless communications. CR learns about the radio and NW environment it is working and intelligently changes its operating parameters like frequency, waveform etc. in real time. The advantages of CR is multifold both in military and civilian sector. In military a single type of Trans-Receiver unit can replace multiple types because same unit can be reused by Software re-configuration as required. In civilian sector, where the spectrum is licensed and closely held by the licensee, it is possible to use the same by unlicensed party, whenever the spectrum is unused and unoccupied by licensed holder. This is done by sensing the usage, without disrupting the license holder communications. This facilitates the availability of spectrum by unlicensed users and can be used in special needs like disaster management etc. The pressure on availability of spectrum is also reduced.

Due to several advances made in the field of micro-electronics, it has become possible to do many of the radio trans receiver baseband functions in Software. Evolution of spectrum sensing methods for OFDM, MIMO, co-operative spectrum sensing etc. has made CR in to a cutting edge technology. The possibility of changing mod type, coding, freq band etc. without changing hardware made the Trans-Receivers becoming more versatile, portable and powerful. SDRs are in use for last decade in Military. CR combined with SDR is finding several uses in civilian sector.

### **Contact Persons:**

Dr. L. Nirmala Devi, Convenor, Dept. ECE, UCE, OU  
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Mr.Ch. Srinu, Research Scholar ,NERTU  
Ph:9032930657E-mail: nertu.courses@osmania.ac.in

### **Chief Patron:**

**Prof. S. Ramachandram,**  
Vice Chancellor, Osmania University

### **Patrons:**

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Prof. M.Kumar, Principal, UCE, OU  
Prof. P.Laxminarayana, Dean, FoE, OU

### **Speakers:**

Prof Md Zafar Ali Khan, IIT, Hyderabad  
Prof Y Yoganandam, Former Director, NERTU  
Dr C Nanda Kishore, MathWorks India Pvt Ltd  
Dr M Lakshminarayana, Sc'H'(Retd),DLRL  
Dr N Venkatesh,VP Redpine Signals  
Dr L.Nirmala Devi,Dept. ECE, OU

### **Advisory Committee:**

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Prof. V.M.Pandharipande, Former VC, DBAMU  
Prof. Rameshwar Rao, Former VC, JNTUH  
Prof. K.Kishan Rao, Former Director, NIT Warangal  
Prof. K.Laxminarayana, Former President, OUECEAA  
Prof. Hari, IISc, Bengaluru  
Prof. Anant Raj, Emeritus Professor, OU  
Sri. Maruthi Rao, Chair, IEEE Hyderabad  
Dr. M.Lakshminarayana, Past Chair, IEEE Hyderabad

### **Organizing Committee:**

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