

## About SEAS

**School of Engineering and Applied Science (SEAS)**, an engineering institution which provides a project-based, multidisciplinary education and where faculty and students pursue research and development in areas of societal and industrial significance.

Ahmedabad University, delivers undergraduate and postgraduate engineering programmes with extensive student-centric pedagogies.

### Important Dates

- Apply Before: May 30 ,2018

### Enrollment Fees

- UG Students: 1500 INR
- PG/Ph.D Students:2500 INR
- Faculty Members: 3500 INR
- Industry People: 4000 INR

Enrollment Fees are non-refundable.

Fees can be paid by Demand Draft/cheque drawn in favour of "Ahmedabad University" payable at Ahmedabad.

### Registration Link

<https://goo.gl/R6tu4m>

### Website

<https://ahduni.edu.in/seas/wireless-fdp2018>

### For further details,contact:

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Ahmedabad University.

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**Email:** brijesh.soni@ahduni.edu.in

## Resource Persons

- Dr. Guan Yong Liang, Nanyang Technological University, Singapore
- Dr. Sumei Sun, Institute of Infocomm Research, Singapore
- Dr. Miguel López-Benítez, University of Liverpool, UK
- Dr. Dhaval Patel, Ahmedabad University
- Mr. Ojeen Toma, PhD Student, University of Liverpool, UK

## Program Committee

- Dr. Dhaval Patel, Convener
- Dr. Mazad Zaveri, Member
- Mr. Anurag Lakhani, Member
- Mr. Pratik Trivedi, Member

## Organizing Committee

- Dr. Mehul S Raval, Convener
- Prof. Sanjay Chaudhary, Member
- Dr. Ratnik Gandhi, Member
- Dr. Mazad Zaveri, Member

## Lab Coordinators and Hospitality

- Mr. Brijesh Soni, JRF, School of Engineering and Applied Science (SEAS), Ahmedabad University
- Ms. Yasha Mehta, JRF, School of Engineering and Applied Science (SEAS), Ahmedabad University



Faculty Development Program  
on

## "Advanced 5G Wireless Communications: Performance Analysis and Monte-Carlo Simulations"

(As a part of DST-ASEAN and DST-UKIERI Research Project)



## Program Overview

The Program includes talks on various topics concerning NOMA and 5G communications by Researchers and scholars from institutes like Nanyang Technological University (NTU) Singapore, Infocomm Research Centre Singapore, and University of Liverpool, UK.

### The program intends to equip participants with following objectives:

- Insights of Vehicular Cyber Physical Systems (VCPS) and research challenges.
- Non-orthogonal modulation Access (NOMA) scheme for 5G Technology.
- Performance analysis and Monte-Carlo simulation for spectrum sensing techniques like energy detection, blind AD sensing etc.
- Convex optimization applied to wireless systems.
- Full duplex radio, imperfect channel state information (CSI) for cognitive radio networks(CRN 's).

### For Whom?

This Faculty Development Program is especially intended to provide with an in-depth technical exposure of 5G communications and their applications in wireless research to the faculty members of engineering colleges, research scholars in wireless communications, post-graduate students, and engineers. Further few interested undergraduate students with good academic record, who would like to further explore the latest research in current wireless systems, can also be a part of this program.

## Tentative Schedule

| Timing          | 18th June  | 19th June  | 20th June   | 21st June                               | 22nd June   | 23rd June  |
|-----------------|--|--|---|---|---|--|
| 09:00AM-09:30AM |  |  | <b>Breakfast</b>  |   |   |  |
| 09:30AM-11:00AM | Introduction to VCPS, ITS, Deployment at NTU, Open research issues | Introduction to CR, Spectrum Sensing, Imperfect S.S (ISS)  | CR-VCPS, Millimeter wave comm., 5G vehicular network challenges       | Non-orthogonal multiple Access (NOMA)   | Blind Anderson Darling(A,D) Spectrum Sensing                              | Spectrum pricing policy and allocation scenario in Indian Economy. |
| 11:00AM-11:30AM |  |  | <b>Coffee/Tea break</b>   |   |   |  |
| 11:30AM-1:00AM  | Vehicle to Vehicle (V2V) traffic simulator SUMO + NS2              | Laboratory hands on: 2 Spectrum sensing and Imperfect spectrum sensing                           | Imperfect CSI- Analysis on different system model                     | Full Duplex Radio (Theory)              | Laboratory hands-on:6 Blind AD- Sensing                                   | Convex optimization using MATLAB and Python-(cvx tool)             |
| 1:00PM-2:00PM   |  |  | <b>Lunch Break</b>  |   |   |  |
| 2:00PM-5:00PM   | Laboratory hands-on:1 "Related to V2V communication"               | Laboratory Hands-on: 3 "Threshold setting for spectrum sensing based on Statistical information" | Laboratory hands-on:4 Implementation of imperfect CSI in CR Networks. | Laboratory hands-on:5 Full Duplex Radio | Laboratory hands-on:7 Data Acquisition and Spectrum Occupancy Calculation | Closing Comments, Feedback, Certificate Distribution               |

## School of Engineering and Applied Science

### AHMEDABAD UNIVERSITY

#### APPLICATION FORM

#### Faculty Development Program

on

### "Advanced 5G Wireless Communications : Performance Analysis and Monte-Carlo Simulations"

June 18-23, 2018

(As a part of DST-ASEAN and DST-UKIERI Research Project)

1. Name Mr/Ms.....
2. Designation.....
3. Organization.....
4. Contact.....
5. Email.....
6. Experience in relevant area  
Academic.....  
Industry.....
7. Cheque/D.D No.....  
Dated.....Bank.....

Date:

Signature of Participant