

Sponsorship

Prof./ Dr./ Mr./ Ms./ Mrs./ _____ is an employee of our institute and his/her application is hereby sponsored. The applicant will be permitted to attend the short-term course “**Frontiers in Microwaves**” at IIT Madras during **October 22 – 27, 2018**, if selected.

(Signature of Sponsoring Authority with date and seal)

Provisionally selected Applicants have to send a demand draft for Rs. 500/- as caution deposit.

DD No: _____ Date: _____
Bank: _____

Signature of the Applicant

The duly filled-in application form should be posted to:

Professor V. Subramanian
Microwave Laboratory, Department of Physics
Indian Institute of Technology Madras
Chennai – 600036
Email: manianvs@iitm.ac.in

Scanned sponsorship form and application may be sent to the email address mentioned above.

Eligibility and Registration Fee

The course is open to faculty with background in Physics, Electrical Engineering, Electronics and Communication Engineering, and Metallurgical and Materials Science Engineering from AICTE approved Institutions. No course fee is charged for participants sponsored by AICTE approved institutions. However, a demand draft, drawn on any nationalized bank in favour of the Registrar, IIT Madras payable at Chennai, for Rs. 500/- has to be sent by the provisionally selected participants as caution deposit.

Limited number of participants from AICTE recognized engineering institutions will be eligible for to and fro railway fare via shortest route in 3-Tier AC class. Candidates attending the course till its completion will only be eligible for travelling allowance.

Important Dates

Last date for applications: **07th Sept 2018**
Intimation of selection through email: **15th Sept 2018**
Confirmation of participation: **22nd Sept 2018**

Centre of Continuing Education, IIT Madras
<http://cce.iitm.ac.in>

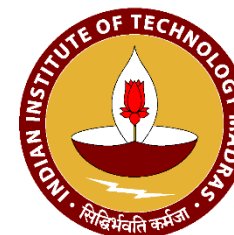
Department of Physics, IIT Madras
<https://www.physics.iitm.ac.in>

Course Coordinators' Profile

V. Subramanian
<https://physics.iitm.ac.in/~manianvs>
C. V. Krishnamurthy
<https://physics.iitm.ac.in/~cvkm>

AICTE QIP SHORT TERM COURSE ON FRONTIERS IN MICROWAVES

**Sponsored by AICTE, New Delhi
October 22 – 27, 2018**



Coordinators
**Dr. V. Subramanian
Dr. C. V. Krishnamurthy**

Organized by

**Microwave Laboratory
Department of Physics
Indian Institute of Technology Madras
Chennai – 600036.**

Microwaves cover an important window (~300 MHz to ~300 GHz) of the spectrum of electro-magnetic waves. Since its advent for wireless communication about six decades ago, it has grown rapidly in all aspects of the associated technology spanning generators, couplers, amplifiers, antenna and detectors. These advances have led to compact devices and flexible sensors being deployed in a wide range of environments – from space-borne communication systems to personal mobiles! Creating new designs, simulating the performance, fabricating the devices, testing, seeking electromagnetic compatibility, minimizing electromagnetic interference are challenges that need to be addressed.

Material processing has taken new directions with microwaves for selective and controlled heating as well as drying. Microwave heating is a complex phenomenon and poorly understood. Numerical modeling and computer simulations need to be combined to comprehend the interaction of microwaves with matter in general and materials in particular.

Microwaves are increasingly contributing to the medical field in the areas of hyperthermia and imaging. Advances in the treatment of cancer through hyperthermia are encouraging researchers and medical practitioners to develop and improve microwave applicators on the one hand and understand the complex interactions of microwaves with the human body through numerical modeling on the other.

Microwave imaging of Earth and the atmosphere under all-weather conditions has been routinely carried out by satellites. Light-weight sensors and cooled detectors on space-borne vehicles have extensively been used to collect radiation from the universe to aid in our understanding of the formation of galaxies, supernovae, and stars. Microwave imaging is also emerging as an alternate candidate for medical diagnostics, airport baggage and personnel scanning.

Ground penetrating radar has been increasingly used to detect buried objects such as land mines, underground utilities and carry out archaeological surveys.

Microwave nondestructive evaluation is gaining acceptance in industry opening up opportunities for research and development.

Metamaterials have opened up a whole new world of opportunities for fundamental research and applications. It now seems possible to engineer materials to reflect, focus, absorb, filter and scatter microwaves in any desired manner that could not be even dreamt before.

All these exciting developments and challenges can only be met through continuing education, training and research activities that will help create the necessary manpower and sustain the support-system. .

Course Contents

Fundamentals of Microwave Physics
Simulation aspects
Microwave Devices
Photonic Crystals and Metamaterials
Applications of Microwaves

Practice sessions

- a. Demos
- b. Simulations
- c. Hands on Experiments

Resource Persons

The teaching faculty will constitute experts from different fields of specializations within IIT Madras and guest speakers from other reputed institutions and organizations.

Course Materials

Each registered participant will be provided with a set of comprehensive lecture notes.

Boarding and Lodging

Boarding and lodging facilities will be provided for the selected candidates in the Taramani Guest House at IIT Madras. Accommodation will be on *twin sharing* basis.

AICTE QIP Short Term Course on
FRONTIERS IN MICROWAVES
Sponsored by AICTE, New Delhi
October 22 – 27, 2018

Application Form

Name: _____

Designation: _____

Department: _____

Organization: _____

Mailing Address: _____

Pin code: _____ Phone No.: _____

Fax No.: _____ Mobile No.: _____

E-mail: _____

Highest Academic Qualification : _____

Specialization: _____

Research Area: _____

Purpose of attending this workshop: _____

Experience (in years)

(a) Teaching: _____ (b) Industrial/Research: _____

Accommodation

(a) Required: _____ (b) Not Required: _____

(Accommodation will not be provided to the local participants)

All data provided are true to the best of my knowledge and belief.

Kindly register me for the short-term course on "Frontiers in Microwaves" to be held at IIT Madras.

Place: _____

Date: _____ (Signature of the applicant)