Two-week FDTP
On

PH 8251 Materials Science

(21 Jan – 2 Feb 2019)

REGISTRATION FORM

Coordinator

Prof.D. Arivuoli FRSC

Sponsored by

Anna University
Chennai

Organised by

Crystal Growth Centre
ACT campus
Anna University
Chennai – 25

Organizing Committee

Chief Patron	**Dr. M.K. Surappa** Vice Chancellor Anna University Chennai
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	Dr.I. Arul Aram Addl. Director, CFD
Co-Chair	**Dr.S. Narayana Kalkura** Director, CGC
Co-ordinator	**Dr.D. Arivuoli**
Venue	Crystal Growth Centre Anna University

Important Dates:

Submission of Application : 10-01-2019

Intimation of Selection : 11-01-2019

Confirmation by Participants : 12-01-2019

Registration Form

Name

Designation

Qualification

Date of Birth and age

Institution Address

Communication address

Mobile No
Email Id

I declare that the details furnished above are true to the best of my knowledge and belief and agreed to abide by the rules and regulations governing the conduct of faculty development training program sponsored by the Centre for Faculty Development, Anna University, Chennai

Signature of the Applicant

SPONSORSHIP CERTIFICATE

Certified that Dr/Prof/Mr/Ms …….. is a bonafide faculty member of our Engineering college. She/he is identified to teach the subject Materials Science. She/he is sponsored to attend this FDTP programme from 10-21, December. 2018

Date:

Place:

Signature & seal of Principal/Dean

About Crystal Growth Centre

Crystal Growth Centre (CGC) was established by Anna University in 1982 with the interest of promoting research interests in the field of Crystal Growth and characterisation. With the active involvement and contribution of eminent and hardworking faculty and researchers, the Centre was recognized by the University Grants commission in 1990 as the CGC: UGC-AU Facility for Crystal Growth. The objectives of the centre are to continuously upgrade the research activities and to contribute in the frontier areas of research and technology relevant to crystal growth and characterisation.

The centre had implemented several major national research programs supported by National funding agencies such as DST, DAE, DRDO, UGC, ISRO, MNES, DOE, BRNS, IUAC, CSIR, Tamil Nadu Government and international funding agencies like INDO-DAAD, TWAS, Italy, UKERI, EU and INDO-JAPAN. The mandate of the centre was also to promote the research interests of the researchers from all over India under the visitors program. The Centre had also been continuously organizing several National/ International/ conferences/ Workshops/ refresher courses/ seminars/ symposium to constantly promote research and development activities.

About the course

Materials science is an interdisciplinary field hybridizing, solid-state physics, chemistry, metallurgy, ceramics and engineering. In materials science, rather than haphazardly looking for and discovering materials and exploiting their properties, one instead aims to understand materials fundamentally so that new materials with the desired properties can be created. The basis of all materials science involves relating the desired properties and relative performance of a material in a certain application to the structure of the atoms and phases in that material through characterization. Materials scientists emphasize understanding how the history of a material influences its structure, and thus the material's properties and performance. The understanding of processing-structure-properties relationships is called the materials paradigm. This paradigm is used to advance understanding in a variety of research areas, including nanotechnology, biomaterials, and metallurgy. With a basic understanding of the origins of properties, materials can be selected or designed for an enormous variety of applications, ranging from structural steels to computer microchips. Materials Science is very important to electronics, aerospace, telecommunications, information processing, nuclear power and energy conversion.

Course Contents:

- Phase diagrams
- Isomorphous systems and invariant reactions
- Theoretical determination of phase diagrams using free energy -composition curves for binary systems
- Iron-carbon equilibrium diagram and its phases
- Phase transformations of eutectoid steel
- Different types of steels and applications
- Mechanical properties and plastic deformation and fracture mechanisms
- Fatigue and creep mechanisms
- Various methods of hardness testing
- Magnetic materials and properties
- Dielectric materials and properties
- Superconducting materials and properties
- Ceramic materials and applications
- Metallic glasses and shape memory alloys
- Nanomaterials – preparation and applications

Resource Persons

The sessions will be handled by experts from academia, research organisations and industry in the subject areas

Eligibility

This course will introduce the essential principles of Materials Science for mechanical and related engineering applications. Faculty of Physics and faculty teaching/ intend to teach Materials Science, of engineering colleges affiliated to Anna University are eligible to apply.

Guidelines

- There is no participation fee
- Faculty of affiliated engineering colleges of Anna University are only eligible
- Session time will be from 09.00 am to 4.45 pm
- Total number of participants will be strictly 25 (Twenty five only)
- Eligible participants will be selected based on first come first serve basis
- Lunch will be provided during the course

For details contact

The Co-ordinator
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