

QIP SHORT TERM COURSE ON

Engineering Applications of Modern Inorganic Chemistry



1 – 5 November 2018

Venue:

PBCEC, Visitors Hostel (VH) Indian
Institute of Technology Kanpur



अखिल भारतीय तकनीकी शिक्षा परिषद्
All India Council for Technical Education

Department of Chemistry
Indian Institute of Technology Kanpur
Kanpur 208016, Uttar Pradesh, India



ABOUT THE COURSE

Inorganic elements and their compounds play important roles in our daily lives and have tremendous applications in diverse array of industries. One of the most important discovery is industrial preparation of ammonia by Haber-Bosch process. Inorganic fertilizers are multibillion-dollar industry. Sulfuric acid (H_2SO_4) is one of the largest inorganic chemical produced worldwide. Major construction materials are metals or alloys. The periodic table is live with 118 elements and still counting for future discovery of new elements. Diversity of properties of elements, their structures and trends are always fascinating. The ranges of industrial application is very diverse. Most of the industrial catalyst are transition metal compounds, semiconductor industry based on Si, Ge or Ga. Solar panels are built on silica-based materials. Other applications include pollution remediation, H_2 -storage, MRI contrast agents and pharmaceuticals. This course will cover the fundamental and modern applied aspects of inorganic chemistry.

SCOPE AND OBJECTIVE OF THE COURSE

Objective of the Course:

- The course is designed for engineering/science teachers and researchers at colleges/universities/research institutes with an in-depth knowledge of the fundamental and application of inorganic chemistry in important engineering and industrial applications.
- To promote the understanding of the chemical structure and bonding of s/p/d- and f-block elements with emphasize of recent developments for curriculum development.
- Important industrial /engineering applications & solutions: Catalysis, alternative energy/fuels, electronics/displays, biomedical imaging and pharmaceuticals.

Major topics to be covered are:

- Principle of structure and bonding in inorganic materials, structure/bonding-property relationships. Modulation of solid-state structures for desired applications.
- Inorganic materials & potential applications: industrial catalysts, inorganic nanomaterials, metal organic frameworks, semiconductors, display, sustainable energy solution, renewable energy, pollution remediation, biomedical imaging probes, and pharmaceuticals

APPLICATION/REGISTRATION PROCEDURE:

1. Take approval from your Head/ Dean/ Director/Supervisor and then fill in registration form for participation here:
<https://docs.google.com/forms/d/e/1FAIpQLSdxrdzSL4HTGFcsHjrdpNMwiwLelIpd9iMh0Zqn6Ob4XkbIFg/viewform>
2. Take print-out of the google-form or its receipt. (ii) Attach the approval from your Head/Dean/Director (original signed copy on letterhead), and (iii) Attach Online payment details/ Cheque/DD of the registration fee.
3. Send all these documents to the course coordinator by E-mail: inorg.qip@gmail.com or via post.
4. Course schedule and further details will be posted in later at following website:
<https://sites.google.com/view/inorgqip>
5. **Last date submission of registration Fee & filled-in form: 12/10/2018**

REGISTRATION FEES

A maximum of 30 QIP participants & senior Ph. D students will be selected on first-come-first serve basis as per norm and the participants need to send the filled-in registration form forwarded and recommended from their Head of the Department/Institute in support of their application. Ph.D. students should route their application through supervisor/HOD.

1. Faculty from AICTE Institutes under QIP program: Rs. 1000
(refundable only on participation)
2. Faculty from private/autonomous Institutions: Rs. 5,000
3. Ph.D. students of IITK: Rs. 2,000
4. Ph.D. students from other educational institutions:Rs. 4,000
5. Participant from R&D labs: Rs. 5,000
6. Participant from Industry: Rs. 10,000

There is no course fee for the sponsored teachers from AICTE approved engineering colleges. A refundable caution deposit of Rs. 1,000 to ensure their commitment for participation in this course. This amount will be refundable only to those teachers who attend the course.

Payment Modes: (i) Online transfer: *Name:* Coordinator, Continuing Education Programme, *Account Number:* 10426004713, *Name of Bank:* State Bank of India, *Branch:* IIT Kanpur, Kanpur 208 016, *IFSC/RTGS/NEFT Code:* SBIN0001161, *MICR Code:*

2080002041, **(ii) DD/Cheque:** in favour of: Coordinator, Continuing Education Programme, IIT Kanpur

Cancellation Charge before 20/10/2018: Rs.1000. **No refund of registration fees after 20/10/2018.**

ACCOMMODATION

Accommodation at IITK Visitor's Hostel will be arranged only for participant from outside Kanpur upon request at the time of registration for the course. All participants have to pay the accommodation charges by themselves. In case single occupancy becomes unavailable, participants will need to share the accommodation. The guest room occupants should agree to abide by the existing rules and regulations of VH, IITK.

Please plan to arrive by the evening of October 31, and plan to leave by morning of Nov. 06, 2018.

Guest-Room Rental Details (Room rent/Day):

Non-AC: Rs. 200 (Single) and Rs. 300 (Double)

AC: Single occupancy: Rs. 600, AC Double Occupancy- Rs. 800 in VH Extension

Arrangement for Food: Food is being arranged in Student's dining hall /VH in campus for all the registered participants during breakfast, lunch, dinner.

Travel Assistance: TA via 3A A/C train fare will be provided only to participating teachers of AICTE approved colleges via shortest route strictly on submission of original ticket.

For further information and queries contact: Course Coordinator (E-mail)

Address for mailing Registration Form and Fees (E-mail/Post):

Course Coordinator

Dr. Ashis K. Patra

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