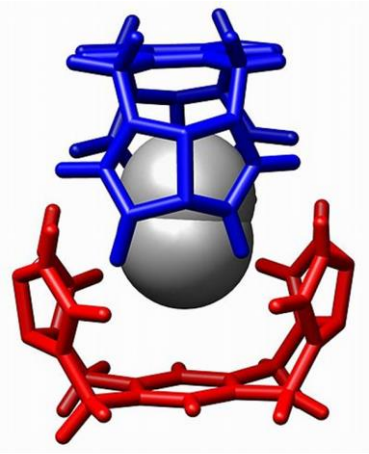

Department of Chemical Sciences

Graduate Course on

Organic and Inorganic Chemistry

How to plan synthesis of new molecules?

This course will highlight tools and methodologies that aid in sculpting molecules. We will provide a comprehensive insight into advanced organic and inorganic chemistry starting with a brief overview of basic concepts and then delve into details of reactions and principles.

Course Contents

- How to introduce new functionalities into a molecule? Functional group interconversions and bio-conjugation reactions
- Forming new bonds: Addition and reduction reactions
- Tracking and trapping reactive intermediates
- Methodologies for making receptors and ligands
- Basics of organometallic chemistry
- Introducing chirality: Asymmetric Synthesis
- How to design new molecules: Principles of retrosynthetic analysis and multistep synthesis
- Chemistry of Main group Elements
- Chemistry and applications of f-block elements
- Special Topics on carbon-hydrogen bond activation, catalysis, light-activated reactions, supramolecular chemistry, and routes from synthetic biology to new chemistry.

Prescribed Text:

1. Advanced Organic Chemistry, Francis A. Carey and Richard J. Sundberg, Part B: Reactions and Synthesis
2. Advanced Inorganic Chemistry, F. Albert Cotton, 6th Edition
3. The Organometallic Chemistry of the Transition Metals, Robert H. Crabtree, 5th Edition
4. Inorganic Chemistry, 5th edition, Shriver and Atkins

(For detailed course content, see **Courses** in the webpage of the Chemistry Subject Board)

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Tel. no.: 2078
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Venue: **Lecture room AG-80**
Days: **Tuesdays and Fridays; Time: 9:30 hr to 10:30 hr**

The first lecture starts on August 8, 2017.