

## **Aims and Objectives**

The aims of this subject are:

To give a systematic introductory treatment of organometallic compounds, emphasising synthesis, properties, structure and reactivity.

A student who has met the objectives of the course will be able to:

- know the basic classification of organometallic compounds across the Periodic Table.
- demonstrate an understanding of the structure, bonding and reactivity of transition metal organometallic complexes: sigma bonded metal-organyls, -carbenes, -carbynes, and pi-bonded metal-alkenes - alkynes, -carbocyclic.
- demonstrate the knowledge of some of the most relevant industrial processes in the environment of Organometallic Chemistry
- demonstrate ability to develop synthetic routes for organic molecules by means of integrated application of organometallic compounds.

## **Useful Background Knowledge**

Organometallic Chemistry is a last-year course because it builds on:

- Organic chemistry: reactions mechanisms
- Inorganic chemistry: electronegativity; electron counting and stability, properties of transition metals
- Physical chemistry: orbitals and MO theory, thermodynamic and kinetic aspects