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COURSE MODULE INFORMATION

CH307: Inorganic Chemistry

Semester 2 | Credits: 5

This Module will provide insights into the specific roles of metals and ligands in the broad field of coordination chemistry. Specific areas to be discussed include the coordination and organometallic chemistry of transition metals, inorganic kinetics and principles of nuclear chemistry. The practicals related to the topics dealt with within the course are included in the laboratory-based Module CH334 - Experimental Chemistry II (see relevant module description).

(Language of instruction: English)

Learning Outcomes

1. recognize the basic principles of radioactivity and nuclear chemistry, to include radioactive decays, the interaction of radiations with matter, nuclear reactions and common applications of radioisotopes
2. explain the bonding and structural features of transition metal coordination compounds based on the Crystal Field Theory (CFT) and the Molecular Orbitals (MOs) model
3. predict the spectroscopic properties of transition metal coordination compounds using theoretical models
4. describe the structure, bonding and reactivity of organometallic complexes of d-block elements
5. classify the types of organometallic complexes on the basis of the coordinated ligands

6. illustrate the catalytic activity of selected organometallic complexes and draw the associated mechanisms of reaction
7. explain the structure, bonding and reactivity of transition metals in the various oxidation states
8. discuss in detail the mechanisms of dissociative, associative, interchange, ligand substitution and electron transfer reactions of selected transition metals

Assessments

i This module's usual assessment procedures, outlined below, may be affected by COVID-19 countermeasures. Current students should check Blackboard for up-to-date assessment information.

- Written Assessment (90%)
- Continuous Assessment (10%)

Module Director

- LUCA RONCONI: [Research Profile](#) | [Email](#)

Lecturers / Tutors

- KAREN KELLY: [Research Profile](#)
- LUCA RONCONI: [Research Profile](#)
- ANDREA ERXLEBEN: [Research Profile](#)
- PAU FARRAS: [Research Profile](#)
- CONSTANTINA PAPATRIANTAFYLLOPOULOU: [Research Profile](#)

Reading List

1. "Inorganic Chemistry" by C.E. Housecroft, A.G. Sharpe
Publisher: Pearson Education Ltd.

The above information outlines module CH307: "Inorganic Chemistry" and is valid from 2019 onwards.

Note: Module offerings and details may be subject to change.

ABOUT NUI GALWAY

Founded in 1845, we've been inspiring students for 175 years. NUI Galway has earned international recognition as a research-led university with a commitment to top quality teaching.



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