

Semester	JAN 2022
Open to semester	6,8,12
Course code	<b>CH3253</b>
Course title	<b>Advanced Inorganic Chemistry Laboratory</b>
Credits	3 /
Course Coordinator & participating faculty (if any)	Nirmalya Ballav* and V. G. Anand
Nature of Course	Lab
Pre-requisites	<p>Safety Instructions:</p> <ol style="list-style-type: none"> <li>1. All Students must wear lab coat, safety goggles, hand gloves and shoes.</li> <li>2. Students should not bring or eat anything inside the chemistry lab.</li> <li>3. In case of any accident (e.g., breakage of glass ware or injury such as burns) the respective student or his/her partner should immediately inform the faculty in-charge.</li> <li>4. Utmost care should be taken while working in the chem</li> </ol>
Objectives (goals, type of students for whom useful, outcome etc)	<p>Main goal of this course is to introduce the students to synthesis and analytical techniques in Inorganic Chemistry. Particularly, the emphasis will be on understanding the principles of synthesis to obtain maximum yields in a given reaction. Further, the students will be also introduced to both qualitative and quantitative analytical methods with a major emphasis on spectroscopic tools such as electronic spectroscopy (UV-vis), IR and NMR spectroscopy. It is expected that the students after attending this course will be able to appreciate the synthetic process and also identify suitable spectroscopic techniques for characterization of molecules/compounds.</p>
Course contents (details of topics /sections with no. of lectures for each)	<p>Experiments:</p> <ol style="list-style-type: none"> <li>1. Spectrochemical analysis of a coordination complex</li> <li>2. Determination of the stoichiometry of a coordination compound by Job's method of continuous variations</li> <li>3. Determination of Iron by reaction with Permanganate - a Redox Titration</li> <li>4. Preparation of 'bouncing putty' a silicone polymer with unusual properties</li> <li>5. Synthesis and observation of phosphorescent emission of</li> </ol>

	<p>Tris(2,2' bipyridine) ruthenium- (II) dichloride hexahydrate</p> <p>6. Synthesis of SnI<sub>4</sub> and analysis by Sn119 NMR</p> <p>7. Preparation of Copper (I) Chloride</p> <p>8. Determination of Chloride by Mohr's Method: Precipitation titration</p> <p>9. Solvent Extraction: Determination of copper as the 'neo-cuproin' complex</p> <p>10. The preparation of Potassium tris(oxalato)ferrate(III)trihydrate and analysis by IR spectroscopy</p>
Evaluation /assessment	<p>End-Sem Examination-30%</p> <p>Mid-Sem Examination-30%</p> <p>Others-40% (viva)%</p>
Suggested readings (with full list of authors, publisher, year, edn etc.)	<p>Lab manual will be provided.</p>