National Institute of Technology Rourkela

Defence Seminar

Seminar Title	: Non-conventional Method of “Cation Pool” Generation from Dimethyl Sulfoxide and 1,2-Dihaloethanes and Their Application in Organic Synthesis
Speaker	: Kuntal Palit (Rollno : 518cy2015)
Supervisor	: Niranjan Panda
Venue	: Seminar Room, Department of Chemistry (Google meet link: meet.google.com/vkc-bsis-nwh)
Date and Time	: 09 Jul 2025 (11.00 AM)
Abstract	: Conventionally, carbenium and onium ions are prepared in the presence of nucleophiles due to their instability and transient nature. Nucleophiles that are unstable or inert in the reaction medium cannot be used for reactions with cationic species to access the desired compounds. To overcome these limitations, developing methods for generating organic cations irreversibly in the absence of nucleophiles is essential. The "Cation Pool" method developed by Yoshida and co-workers stands out as a reliable strategy to generate and accumulate the reactive cations in solution in the absence of nucleophiles. The cation pool method involves the electrolysis of the substrate in the absence of nucleophiles, usually at low temperature. Moreover, the generation of halogen and chalcogen cations through electrolysis needs extra care because of their low stability. The current thesis describes the development of a new protocol, unlike the conventional electrochemical redox process for the generation and accumulation of cation pools for halonium ions, methyl(methylene)sulfonium ions, chlorodimethylsulfonium ions, and their application in organic synthesis.