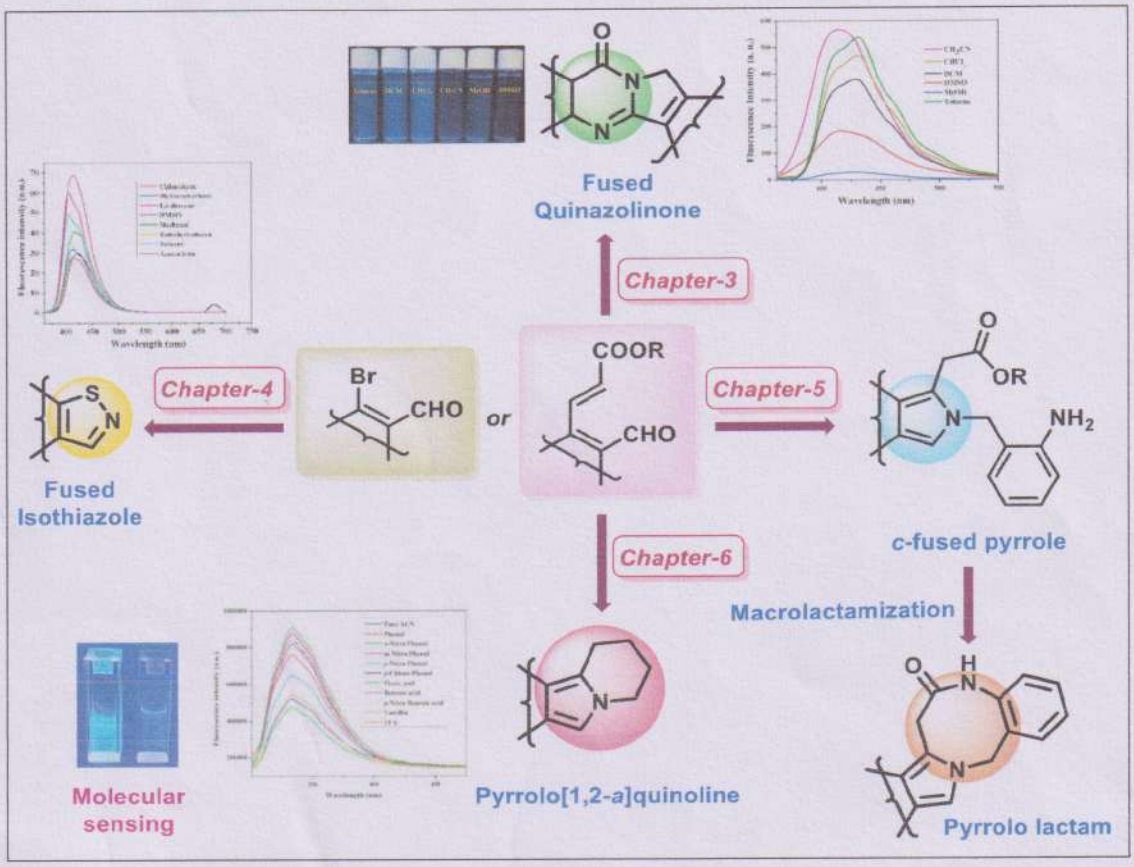
Abstract (Index No.- 235/18/Chem./26)

Environmentally benign synthetic routes to fused heterocycles and their photophysical studies

Heterocyclic molecules are highly significant as they possess biological, pharmacological, and industrial applications. Even though a number of excellent synthetic pathways for heterocyclic compounds have been identified, further research is needed on greener synthesis techniques such as microwave, grinding, ultrasonic, photochemical, and conventional heating route maps. Furthermore, these techniques become more eco-compatible when they generate value-added products without the use of solvents. Herein, we have synthesized fused quinazolinones, isothiazoles, fused pyrroles, pyrrolo lactam rings, and pyrroloquinoline moieties using solvent-free condition or by using green solvent in conventional heating techniques. The entire thesis contains the synthetic protocols of all these synthetic scaffolds and their photophysical applications and molecular sensing properties.



Overall graphical abstract of my entire thesis.

Amit Saha 28.06.2023
Dr. Amit Saha
Supervisor

Shubhankar Samanta 28/06/2023
Dr. Shubhankar Samanta
Joint-Supervisor

Anirban Bera 28.06.2023
Signature of the Candidate

Dr. Amit Saha
Assistant Professor
Department of Chemistry
Jadavpur University
Kolkata-700032, India

Dr. Shubhankar Samanta
Assistant Professor (WBES)
Department of Chemistry
Bidhannagar College
Salt Lake, Kol-64