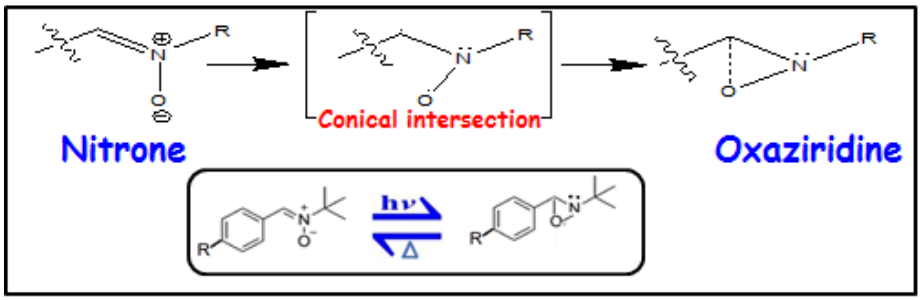
Research Page of Prof. Chattopadhyay

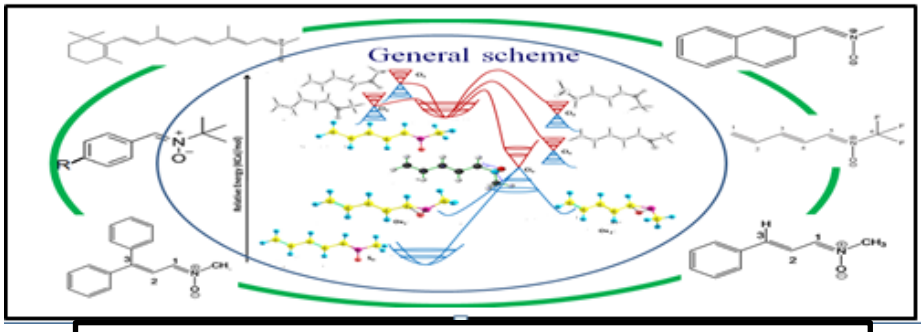
Computational Chemistry

Ultrafast Photochemical Reactions (through Conical Intersections), Fluorescence & its quenching, Phosphorescence processes, ESPT, ESIPT, FRET, TICT, AIE, ISC, RISC, ROS

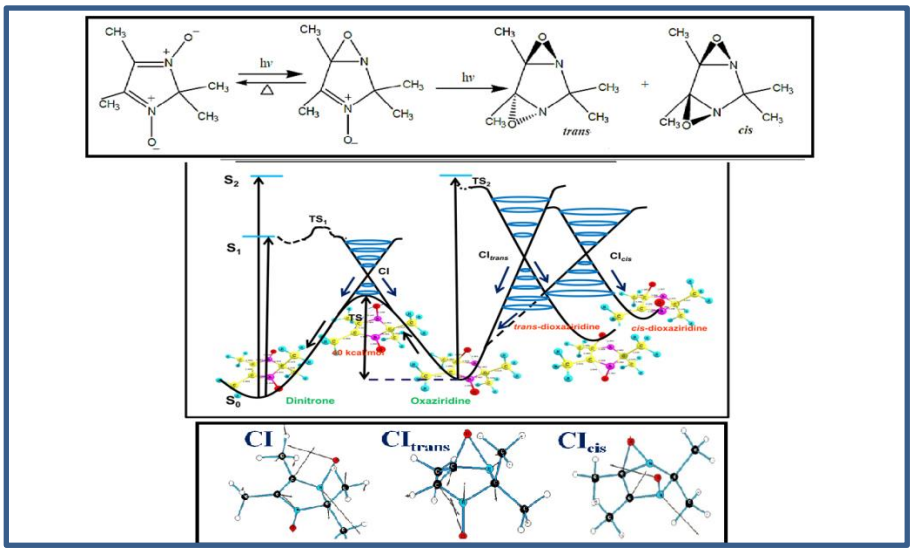
Nitrone (Cyclic & Acyclic) Photochemistry

Acyclic Nitrones Photochemical Path

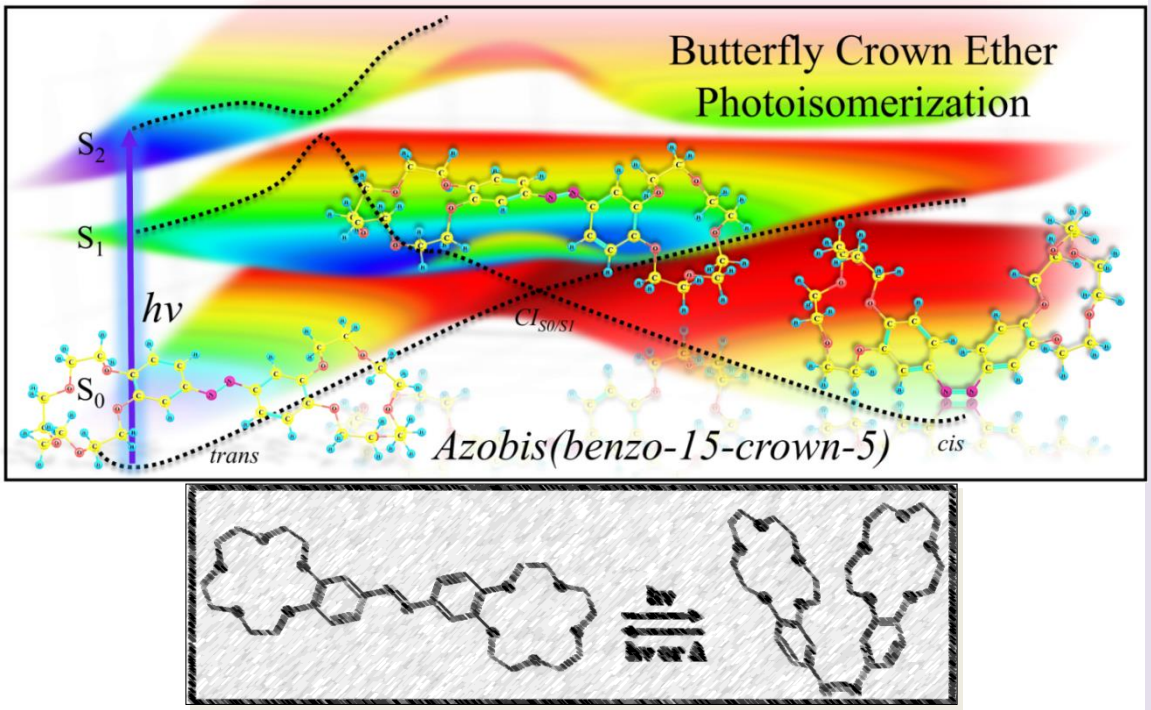




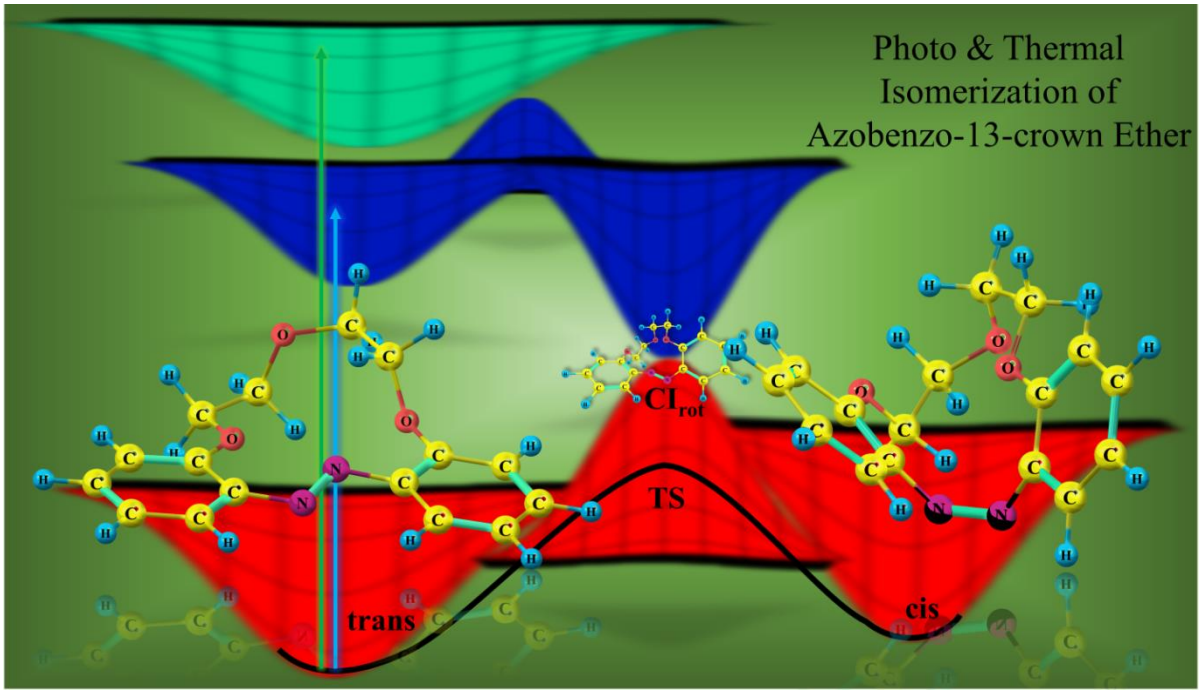
Cyclic Nitrones Photochemical Path



Butterfly Crown Photo-isomerization



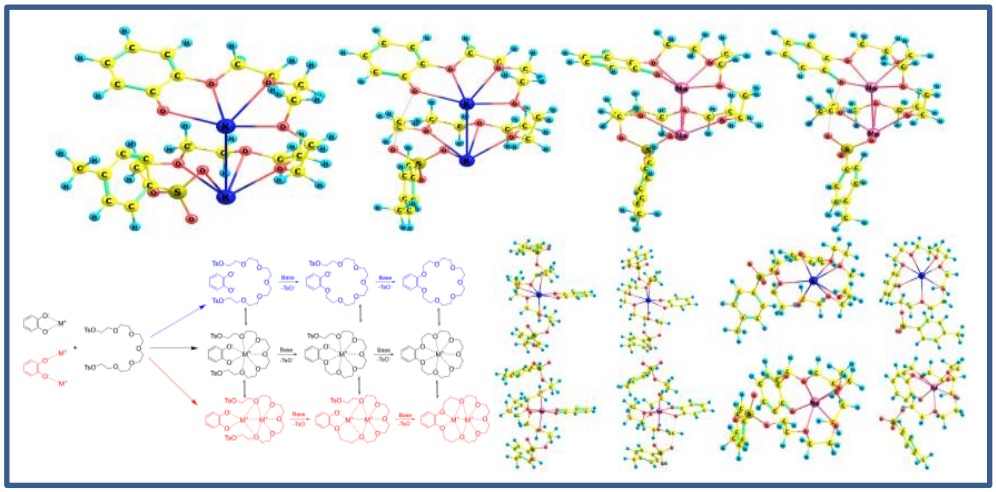
Strained Azo Crown Ether Photo-isomerization



Alkali metal ion Template Synthesis of Crown Ethers

Template & Non-Template Synthesis Mechanisms of DB18C6 (Pedersen's Method)

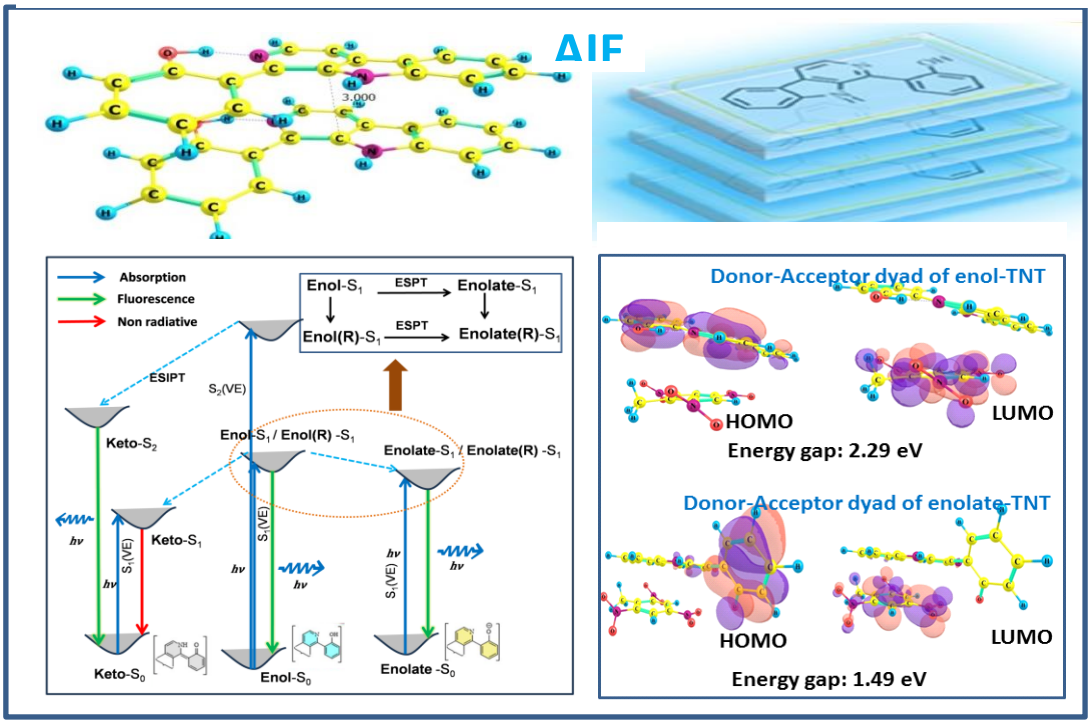
1:1 and 2:1 Template Synthesis Mechanisms of Crown ethers



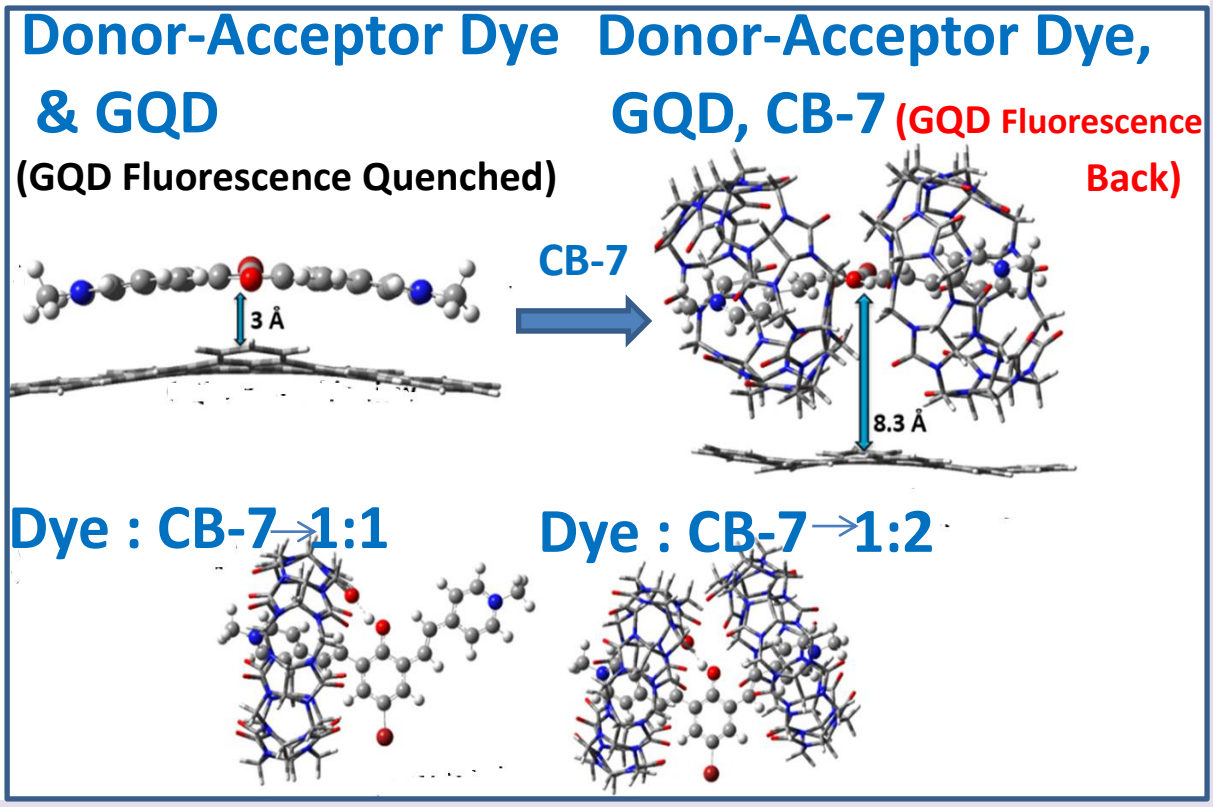
Photophysical Processes, Reaction Mechanisms

(In Collaboration with experimental groups)

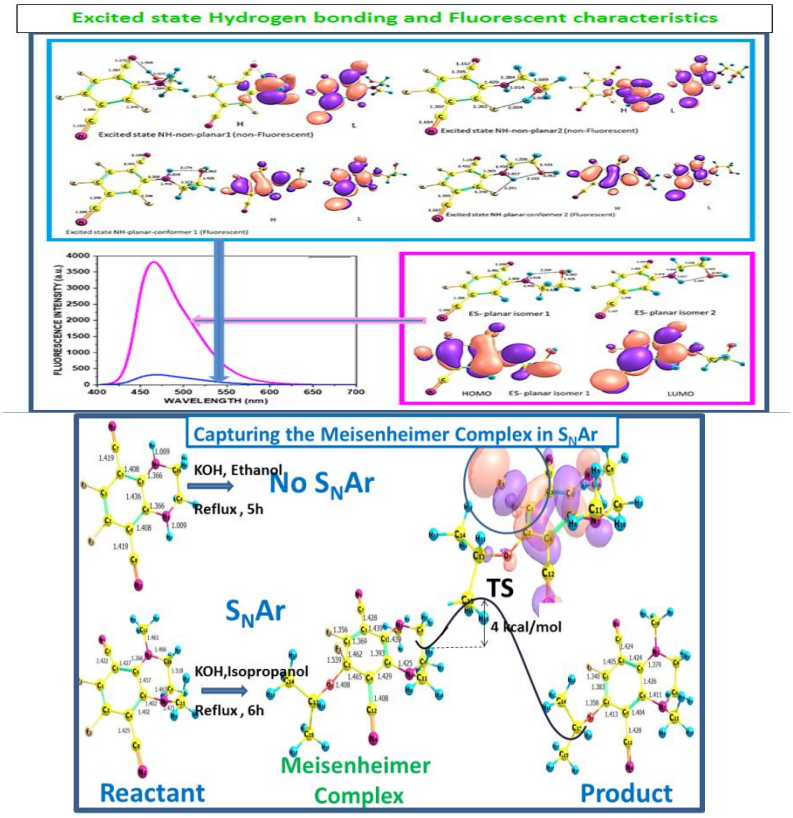
In collaboration with the experimental group of Prof. Anupam Bhattacharya (BITS-Pilani, Hyderabad)



In collaboration with the experimental group of Prof. Mainak Banerjee (BITS-Pilani, Goa)



In collaboration with the experimental group of Prof. Subhadeep Banerjee (BITS-Pilani, Goa)



Other Significant Studies

Low-lying & High-lying Excited Electronic states of Alkali metal-Rare gas (van der Waals) molecules Potential Excliplex Laser systems

Ph.D Thesis guided (as Supervisor):

Dr. Praveen Saini (Year 2017)

Dr. Praveen Saini

Title of Thesis: A Computational Investigation of Oxaziridine Photoconversion and *E*-*Z* Isomerization Processes of Some Acyclic Nitrone Systems

Dr. Sindhuja Sen (Year 2020)

Dr. Sindhuja Sen

Title of Thesis: A Computational Investigation of the Photochemical Oxaziridine Conversion and Subsequent Product Formation Pathways of Some Cyclic Nitrone Systems