



**S N BOSE NATIONAL CENTRE
FOR BASIC SCIENCES**
Block JD, Sector III, Salt Lake, Kolkata 700 106

DEPARTMENTAL SEMINAR

Chemical and Biological Sciences

05th January, 2024

11.30 AM

ONLINE / FERMION

SPEAKER



Dr. Debashish Adhikari
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TITLE OF THE TALK

**Exploring super-reducing behavior of simple organic molecules
and their application in photocatalysis**

ABSTRACT

In recent times there are many simple organic molecules emerging as a highly reducing species that perform reductive cleavage of a bond at a demanding potential. This talk will describe our effort to delineate the design principles. In this presentation, a super-reducing photocatalytic behavior for a simple pincer ligand will be described, which is ubiquitous in coordination chemistry literature. Furthermore, a series of organic molecules such as benzophenothiazine, naphthalene monoamide, and pyrene dione have been chemically modified to convert them as either super-reducing photocatalysts or hydrogen atom transfer catalysts. The photoexcitation and easy reduction lead to their excellent dehydrogenating ability of alcohol feedstock. The design principle, their photophysical studies, and their utilization for important chemical transformations will be described and discussed.

References:

1. Adhikari and co-workers; JACS Au 2023, 3, 1213-1220.
2. Green Chem. 2023, 25, 8019-8025.
3. Green. Chem. 2023, 25, 2840-2845.
4. J. Am. Chem. Soc. 2023, 145, 22403-22412.
5. Org. Chem. Front. 2023, 10, 5248-5253.

HOST FACULTY

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