



Indian Institute of Science

Department of Organic Chemistry
Bangalore - 560 012, India

Tushar Kanti Chakraborty, FNA, FASc, FNASc
Honorary Professor

26 August 2024

Subject: Nomination of Dr. Mrinmoy De for the Sun Pharma Science Foundation – Research Fellowship 2024

To whom it may concern:

It gives me great pleasure to nominate Dr. Mrinmoy De, Associate Professor, Department of Organic Chemistry, IISc for the **Sun Pharma Science Foundation – Research Fellowship 2024**.

Dr. De has contributed very significantly to diverse areas of interdisciplinary research in chemical, material as well as biological fields. His work on the introduction of various functionalities on nanomaterials can change the efficiency of many applications related to antimicrobial activity, catalysis, sensing, etc. The functionalization methods developed by him, are being followed by several groups worldwide to modify the materials, enhance their stability under various circumstances and suitability in related applications as reflected in the citations of his publications. Moreover, the nanomaterial based antibacterial agents developed by his group are useful for many applications such as antimicrobial coating, bioremediation etc. More specifically, the in vivo applications and selective antibacterial activity hold the potential direction for the fight against multidrug resistance bacterial infections which is one of the major global threats. Moreover, he involved in exploring the mechanism of these nanomaterial-based drugs which involves the generation of oxidative stress and selective membrane permeability. Along with, the developed detection methods using similar materials helped to achieve a theranostic system, which has immense impact in improving public health.

His research, which is both fundamental and applied in nature, not only has led to an impressive list of publications in high impact journals, but also has great potential in industrial applications. **One of the sensing methodologies developed by his group has been adopted by an industry (Perfect Day India Pvt. Ltd.) for rapid detection of protein expression by bacteria.**

Overall, Dr. De is a very creative interdisciplinary scientist, who has brought to bear his remarkable chemical insights into a variety of interesting and potentially useful problems related to chemistry, biology, and material science. He has made very substantial contributions to his chosen area of work; this is evident from the fact that **he has over 60 publications (total 89 papers) in a short span of 10 years of his independent research career in highly reputed international journals, like J. Am. Chem. Soc., Angew. Chem. Int. Ed., etc. His papers are very well cited with total citations close to 13,000 and a remarkably high H-index of 40! – which is a big achievement.**

Dr. De is eminently deserving of this recognition. I strongly recommend him for the Sun Pharma Science Foundation – Research Fellowship-2024 and hope his nomination is considered favorably. With warm regards,

Yours Sincerely,

T. K. Chakraborty
Tushar Kanti Chakraborty

E-mail: tushar@iisc.ac.in; Tel: +91 80 2293 2215, Fax: +91 80 2360 0529