

Report on participation of the ICMR International Fellow (ICMR-IF) in Training/Research abroad.

1. Name and designation of ICMR-IF Professor : Dr. Debayan Sarkar, Associate
2. Address : Department of Chemistry, National Institute of Technology Rourkela
3. Frontline area of research in which Training/research was carried out : Chemical Sciences
4. Name & address of Professor and host institute : Prof. Burkard Koenig, University of Regensburg, Germany
5. Duration of fellowship with exact date : 08-01-2020 to 15-06-2020

6. Highlights of work conducted

i) Techniques/expertise acquired : The techniques learnt are mainly based on interdisciplinary sciences. In one dimension, it is employability of visible light catalysis towards generation of fine chemicals. The methodology developed employs renewable source oxygen as the oxidant thus derivation of complex molecules with oxygen enrichment.

On the other hand, the training was also dedicated towards development of a visible disinfection lighting system for the sterilization in the large-scale industry, warehouses and large-scale application of surface purification with a combination of chemical and visible lighting while keeping it human friendly and IOT enabled for the benefit in energy efficiency, support in decision making, responsive service, enhanced experience and product personalisation.

The system is based on principle of photodynamic inactivation (PDI) employing Vitamin Photosensitisers, it is absolutely non-toxic and can be used to disinfect food items too.

ii) Research results, including any papers, : One Research Publication and One Patent prepared/submitted for publication

iii) Proposed utilization of the experience : The India

INDO/FRC/452/Y-88/2019-20-IHD dated 17th December 2019

ICMR Sanction No.

Debayan Sarkar
25/3/21
Signature of ICMR-IF

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