

1. POLLUTANTS REMOVAL FROM INDUSTRIAL WASTE WATER:

Cost effective layered carbon based composite photocatalysts have been prepared for swift mineralisation of textile dyes (cationic, anionic and mixed).

CURRENT STATUS:

- A Z-Scheme heterostructured RGO-based catalyst was synthesized to photomineralised textile dyes in just 05 min under visible light illumination.

TRL level: 4

The image shows the cover of 'CHEMISTRY AN ASIAN JOURNAL' with a patent application notice. The notice is for a patent titled 'REDUCED GRAPHENE OXIDE-SILVER THIOCYANATE (RGO-MS) AND A PROCESS FOR THE PREPARATION THEREOF FOR THE PHOTODEGRADATION OF ORGANIC DYES'. The applicant is the Council of Scientific & Industrial Research, New Delhi, India. The patent was filed on September 24, 2013, and published on May 26, 2016. The journal cover includes a diagram of the Z-scheme photocatalytic process, showing the energy levels of Ag₃PO₄ and RGO, and the generation of reactive species (•OH, •O₂•) for dye degradation. The journal is published by Wiley-VCH and is indexed by ACS and other databases.

- A carbon quantum dot (CQD) based LDH composite was prepared which can photomineralised textile reactive dyes in just 02 mins time under visible light illumination and for higher concentration it takes 05 mins. In addition, its showing some anti-bacterial activity for removal of E-coli.

TRL level: 4

