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**Microwave-assisted degradation of paracetamol drug using polythiophene/Ag–Ag<sub>2</sub>O heterogeneous photocatalyst derived from natural resource****Ufana Riaz***Jamia Millia Islamia, India***Abstract**

Ag–Ag<sub>2</sub>O nanoparticles were synthesized using Osmium sanctum plant extract. The nanoparticles were sensitized with polythiophene (PTh) and were characterized via scanning electron microscopy with energy dispersive X-ray and elemental mapping, transmission electron microscopy, X-ray diffraction (XRD), Fourier-transform infrared, and UV–vis spectroscopy analyses 1-2. The elemental mapping results revealed that the samples were composed of C, S, Ag, and O elements which were uniformly distributed in the nanohybrid. XRD analysis confirmed the crystalline nature of Ag–Ag<sub>2</sub>O nanoparticles, and the average particle size was found to be ranging between 36 and 40 nm. The optical band gap of Ag–Ag<sub>2</sub>O, PTh, and Ag–Ag<sub>2</sub>O/PTh was found to be 2.49, 1.1, 1.5, and 0.68 eV. The catalytic activity of Ag–Ag<sub>2</sub>O, PTh, and Ag–Ag<sub>2</sub>O/PTh was investigated by degrading paracetamol drug under microwave irradiation<sup>3-5</sup>. Around 80% of degradation was achieved during 20 min irradiation. All degradation kinetics were fitted to the pseudo-first-order model. A probable degradation pathway for paracetamol degradation was proposed based on liquid chromatography mass spectrometry analysis of degraded fragments.

**Biography**

Dr. Ufana Riaz has been working as Assistant Professor at Department of Chemistry, Jamia Millia Islamia, New Delhi-110025, India since 2009. She completed her PhD in 2007 on Conducting Polymers. She was nominated as a member of National Academy of Science (NASI) Allahabad in 2016. She teaches Crystallography and Elements of Materials Chemistry. She is currently working in the field of conducting polymers and has published more than 130 papers in international journals around 20 book chapters and 3 books. Her research interests include: Development of conducting polymers with outstanding opto-electronic properties for their potential application in photocatalysis, drug delivery, bioimaging and corrosion protective coatings.