

Biosynthesis of gold and silver nanoparticles using dried peel of Citrus sinensis

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We have produced fast, ecofriendly and cost effective method for synthesis of gold and silver nanoparticles in aqueous medium using sundried peel of Citrus sinensis. Stable, monodispersed and predominantly spherical nanoparticles of size ranging from 14 to 20nm were observed using dynamic light scattering and transmission electron microscopy techniques. The UV-Vis spectrum of aqueous solution containing silver and gold ion showed a peak at 431 nm and 535nm respectively corresponds to their surface plasmon resonance peaks. Rapid formations of gold and silver nanoparticles were reported within 3 and 5 minutes at 85°C respectively. X-ray diffraction (XRD) – spectrum results predicted crystalline nature of gold and silver nanoparticles. FT-IR peaks confirmed that terpenoids and protein amide bonds are responsible for stabilization as well as reduction of nanoparticles. Since the peel part of Citrus sinensis is treated as waste and there is no use of it, we can make best utilization of dried peel of Citrus sinensis by exploiting their reducing and capping properties.

Biography

Saba Naqvi obtained her BSc Degree from Kanpur University. She did her Masters in Toxicology from Jamia Hamdard University, New Delhi in 2005. She worked as a research fellow at A.I.I.M.S., New Delhi on ophthalmic drug formulations using nanoparticles as polymeric carriers. She is currently working on her PhD in Faculty of Engineering and Interdisciplinary Sciences, Jamia Hamdard University in collaboration with research group of Dr. A.K. Dinda, at All India Institute of medical Sciences. Her current research focus is on synthesis of various polymeric, metallic and ceramic nanoparticles and their application in biomedicine and agriculture and She has published 5 papers in reputed journals

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