

Title: Synthesis, Characterizations of Silver Nanoparticles (AgNPs) and Monitoring for Power Production Using Drumstick Leaves(Conference Paper)

Author

- Khan, K.A.,
- Haider, M.T.,
- Hossain, M.S.,
- Rasel, S.R.

Abstract

The drumstick fresh leaves in aqueous extract form have been used (*Moringa oleifera*) for green synthesis of silver nanoparticles (AgNPs). The green synthesis method has been conducted for the production of AgNPs for the application in power production. The different methods are developing for synthesis of AgNPs for multiple applications. It is found that green synthesis from *Moringa oleifera* leaves is cost-effective and eco-friendly. The synthesized AgNPs have been characterized through ultraviolet–visible spectroscopy (UV–Vis), Fourier transform infrared (FTIR), powder X-ray diffraction (XRD), field emission scanning electron microscope (FESEM). It is found that the UV–visible spectrum contains AgNPs in the aqueous medium, and it is also found that absorption peak was at around 332 nm. It is again found from the FTIR analysis that the bimolecular compounds were responsible for the reduction and capping material of AgNPs. It is also found that from the XRD study that the particles to be crystalline in nature, with a face-centered cubic (fcc) structure. The power production activity of AgNPs was assessed to find their potential use in an electrochemical cell. Most of the results have been tabulated and graphically discussed. © 2023, The Author(s), under exclusive license to Springer Nature Singapore Pte Ltd.

Author keywords

AgNPs Characterization Drumstick leaf Electrochemical cell Green synthesis Power production

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