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RESEARCH ARTICLE

Synthesis and Characterization of Bivalent Metal Oxide Nanoparticles

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ABSTRACT

Nanosized biomaterials stand out in the material sciences as a result of their likely applications and benefits over different synthetic and actual methodologies. Metallic nanoparticles (metal or metal oxide nanoparticles) have accomplished wonderful prevalence because of their intriguing natural, physical, chemical, attractive, and optical properties. The natural strategy is liked as it gives a green, upfront, effortless, ecofriendly, quick, and savvy course for the green blend of nanoparticles. Plants have complex phytochemical constituents like sugars, amino acids, phenolics, flavonoids, terpenoids, and proteins, which can act as decreasing and balancing specialists. In the current work, we detailed a blend of nickel oxide nanoparticles utilizing a natural product plant extract of *Bauhinia variegata* by ethanolic extraction. The nanostructures of the examples were portrayed utilizing UV-Visible spectroscopy, Fourier transform infrared red spectroscopy (FT-IR), X-ray diffraction (XRD) and Scanning electron microscopy (SEM). The spherical nature and size of nickel oxide nanoparticles were found at 151 nm to 217 nm.

Keywords: Nanotechnology, Nickel oxide, *Bauhinia Variegata*, FTIR, XRD, SEM

INTRODUCTION

Nanoparticles (NPs) are typically spherical particles with dimensions between 1-100 nanometers [1]. In order to gain access to new classes of functional materials with unheard-of features and uses, researchers have extensively studied nanostructured materials [2]. Conductive paints [3] , rechargeable batteries [4], chemical catalysts [5], optoelectronics [6], magnetic recording medium [7], ferrofluids [8], contrast-enhanced magnetic resonance imaging [9–11] and other applications all make use of magnetic nanoparticles. Improved biological therapy, wastewater treatment, and environmental remediation all greatly benefit from nanotechnology. Due to their chemical, physical, electrical,

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