Is Alfalfa Seedling a Nano-Silver Green Maker?

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Abstract

Searching for new methods for green synthesis of nanoparticles is a common interest among nanotechnologist. In the present study, we test the potentiality of using alfalfa seedling for biosynthesis of nanoparticles. After exposure of seedling to aqueous solution of silver nitrate, spherical silver nanoparticles are biosynthesized with size ranges from 5 to 30 nm. The main reducing agent is supposed to be an antioxidant. The stabilizing agent could be polyphenols in aliphatic mode. So, alfalfa seedling can be used as a green maker for nano-silver.

Keywords

Silver Nanoparticles – Alfalfa – Biosynthesis – Green Nanotechnology

Abbreviation

Ag^0 = Silver Nanoparticle(s)

References

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Figures

Figure [1]: Color of Ag^0 Biosynthesized by Seedling Exudates

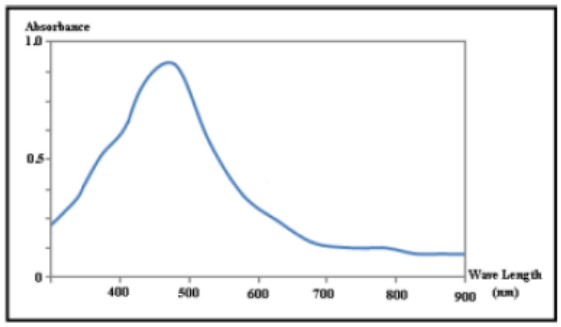
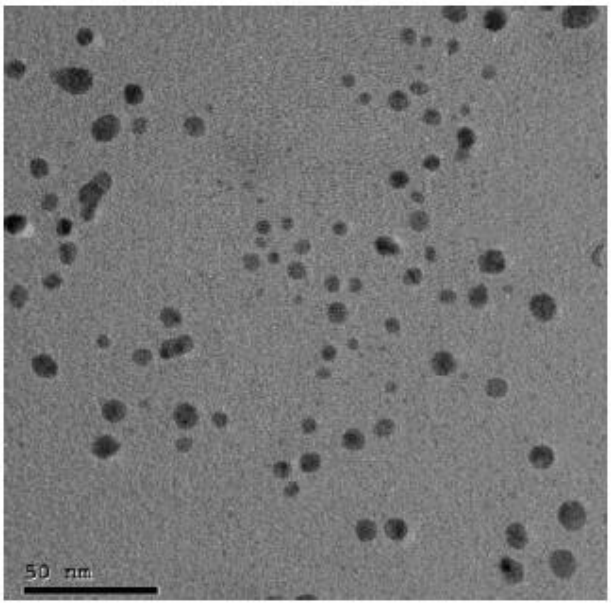


Figure [2]: Surface Plasmon Absorption Band of Ag^0 Biosynthesized by Seedling Exudates



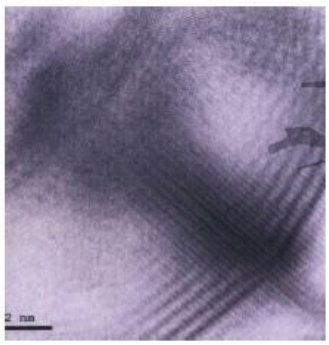


Figure [3.2]: High Resolution TEM Image of Ag^0 Biosynthesized by Seedling Exudates

Figure [3.3]: SAED (Selected Area Electron Diffraction) Pattern of Ag^0 Biosynthesized by Seedling Exudates

Figure [3.1]: TEM (Transmission Electron Microscope) Image of Ag^0 Biosynthesized by Seedling Exudates

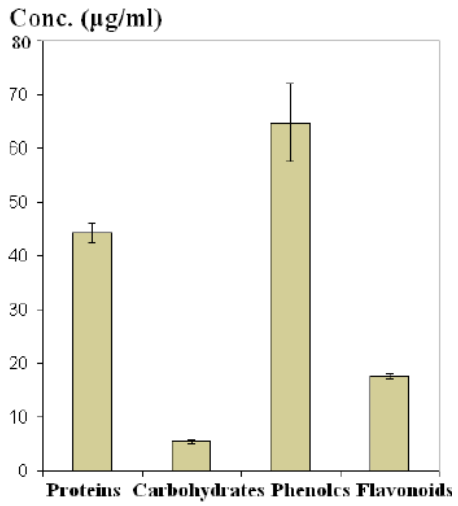


Figure [4]: Quantitative Assay of Possible Reducing Agents Present in Seedling Exudates

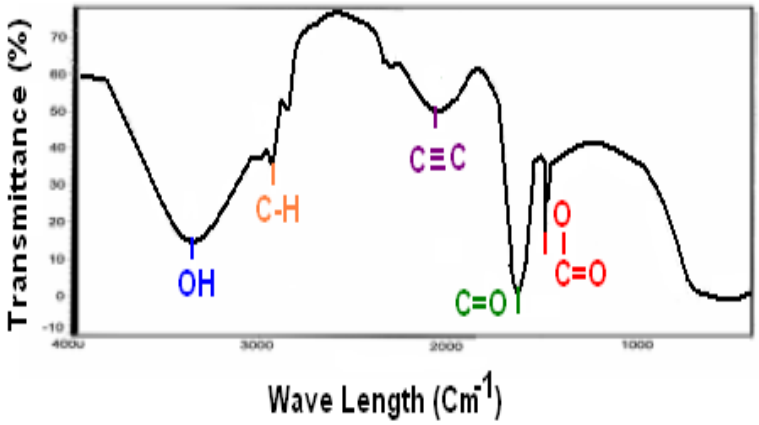


Figure [5]: FTIR (Fourier Transform Infrared Spectroscopy) Spectrum of Ag^0 Biosynthesized by Seedling Exudates