

Review of: "Synthesis of Nickel Nanoparticles Using Ionic Liquid-Based Extract from *Amaranthus viridis* and Their Antibacterial Activity"

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Potential competing interests: No potential competing interests to declare.

The paper is good. It discusses how to get nickel nanoparticles from a plant source. The plant extract is done using a green synthesis method to create Ni-nanoparticles, so it is an environmentally safe extraction.

All the analyses are well done, and the figures are clear.

I think UV-Vis analysis needs the results and discussion to be written and supported by references.

The same observation is for the FTIR analysis. The references needed can be obtained from previous literature for the groups you found in your work.

For example, the band located at 611 cm⁻¹ refers to the C-C stretching vibrations of the aromatic ring [20–23]. These references that can be added to your manuscript are:

[20] F. Luo, D. Yang, Z. Chen, M. Megharaj, R. Naidu, The mechanism for degrading Orange II based on adsorption and reduction by ion-based nanoparticles synthesized by grape leaf extract, J. Hazard. Mater., 296 (2015) 37–45.

[21] Z. Zhuang, L. Huang, F. Wang, Z. Chen, Effects of cyclodextrin on the morphology and reactivity of iron-based nanoparticles using Eucalyptus leaf extract, Ind. Crops Prod., 69 (2015) 308–313.

[22] T. Wang, X. Jin, Z. Chen, M. Megharaj, R. Naidu, Green synthesis of Fe nanoparticles using eucalyptus leaf extracts for treatment of eutrophic wastewater, Sci. Total Environ., 466 (2014) 210–213.

[23] Y.-y. Mo, Y.-k. Tang, S.-y. Wang, J.-m. Lin, H.-b. Zhang, D.-y. Luo, Green synthesis of silver nanoparticles using eucalyptus leaf extract, Mater. Lett., 144 (2015) 165–167. They are already in a previous paper of yours, H. Ullah et al. / Desalination and Water Treatment 125 (2018) 32–39

and so on for the other groups.

I have some questions:

1. Is *Amaranthus viridis* available in large amounts to be used for extractions in manufacturing nickel nanoparticles?
2. What is the yield you get from Ni nanoparticles?

3. Is it cost-effective? Here I mean
4. Can *Amaranthus viridus* be cultivated in your center instead of importing it?
5. *Can you add some applications for the use of the prepared nickel nanoparticles on a laboratory scale?*
- 6.