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.

In this paper, the authors explore the synthesis of Ni nanoparticles (Ni NPs) using an ionic liquid-based extract from *Amaranthus viridis* for antibacterial activity. I recommend rejecting this paper in its current form, with the possibility of publication only if it is entirely rewritten.

Comments

1. The authors need to rewrite the entire abstract and include key research findings.
2. The introduction must be revised to incorporate more previous literature and clearly state the research objectives. The introduction should follow a structured approach:
    - Introduce the topic
    - Provide background information
    - Establish the research problem
    - Define the research objectives
    - Summarize the methodology used
3. The authors should clarify why they chose *Amaranthus viridis* as the plant material for this study.
4. The drying time of the crushed *Amaranthus viridis* powder in the oven should be clearly stated.
5. The authors need to specify which part of the plant material was used for the extraction.
6. Details about the filtration process of the plant material (including the type of filter paper used) should be mentioned.
7. The authors should cite the literature that informed the synthesis method used in this study.
8. Section 3.1 on UV-visible spectroscopy for Ni NPs requires careful review and rewriting for clarity and accuracy.
9. The peaks in the FTIR spectra should be explicitly mentioned.
10. The 2θ values (33.3°, 45.5°, and 55.5°) should be written using a zero (0), not the letter 'O.'
11. The authors should include clear SEM images with appropriate scaling.
12. Authors should add EDS spectra (element ratio table).
13. Additional characterization techniques should be incorporated to thoroughly evaluate the synthesized material.
14. The authors should indicate whether they tested the synthesized material for any biological activity beyond antibacterial effects.