

# 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.

*As a reviewer for the manuscript titled "Synthesis of Nickel Nanoparticles Using Ionic Liquid-Based Extract from *Amaranthus viridis* and Their Antibacterial Activity," my comments are as follows:*

## **Reason for Choosing Nickel:**

*The authors should better explain why nickel was selected, focusing on its catalytic properties, stability, and relevance to antibacterial applications. This would add clarity to the introduction.*

## **Novelty of the Research:**

*The manuscript lacks a clear statement of novelty. Highlight what makes the use of *Amaranthus viridis* extract and the ionic liquid-based method unique compared to existing methods.*

## **UV-Vis Analysis (Section 3.1):**

*Section 3.1 should include a discussion of the characteristic UV-Vis absorption peak confirming the formation of Ni NPs, rather than focusing on applications.*

## **XRD Analysis (Section 3.3):**

*XRD data does not match the standard JCPDS file for nickel. Reanalyze the data to address discrepancies in peak positions and ensure correct phase identification.*

## **FESEM Images:**

*The images lack clarity, making it hard to analyze particle morphology. Provide images at different magnifications to better illustrate nanoparticle structure.*

## **Antibacterial Activity:**

*Include a comparison of the antibacterial performance with similar studies and discuss possible mechanisms to support the observed results.*

## **Discussion and Conclusions:**

*Clarify how the synthesis method affects the antibacterial performance, linking the use of *Amaranthus viridis* extract to nanoparticle properties.*

**Statistical Analysis:**

*Add standard deviations or error bars for antibacterial data to show variability and improve data reliability.*

*Based on these significant shortcomings, the manuscript is not currently suitable for publication in any journal. It requires major revisions and further experimental validation to meet the standards of scientific rigor and clarity.*