

Biogenic Synthesis of Ag Nanoparticles, ZnO Nanoparticles, and Ag@ZnO

Nanocomposites as Photocatalysts for Degradation of Brilliant Blue Dye

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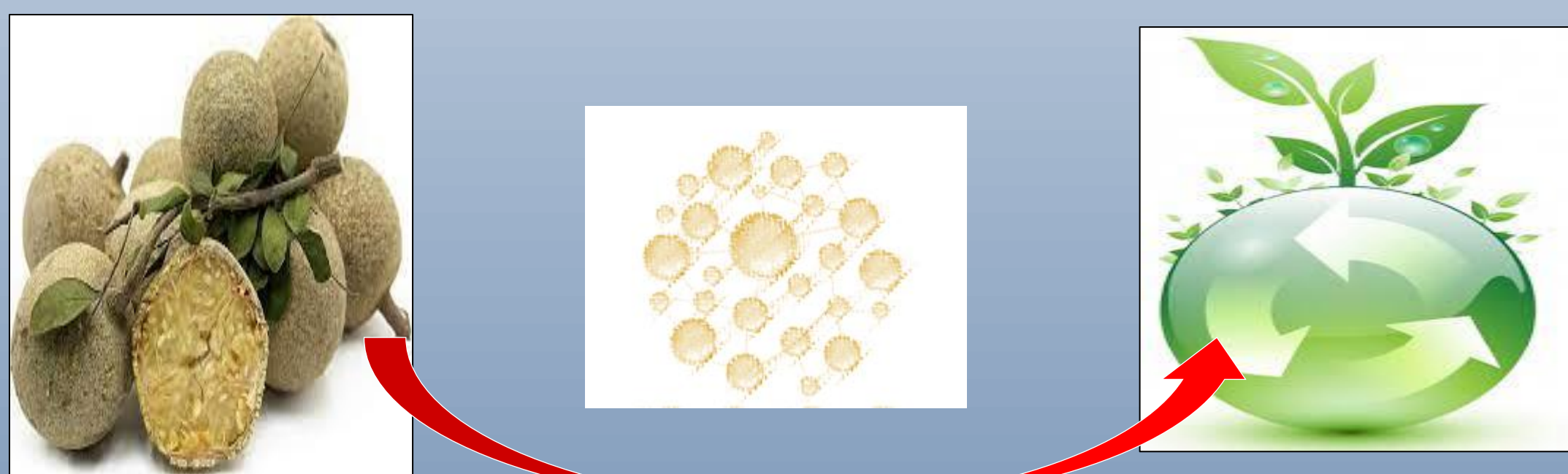
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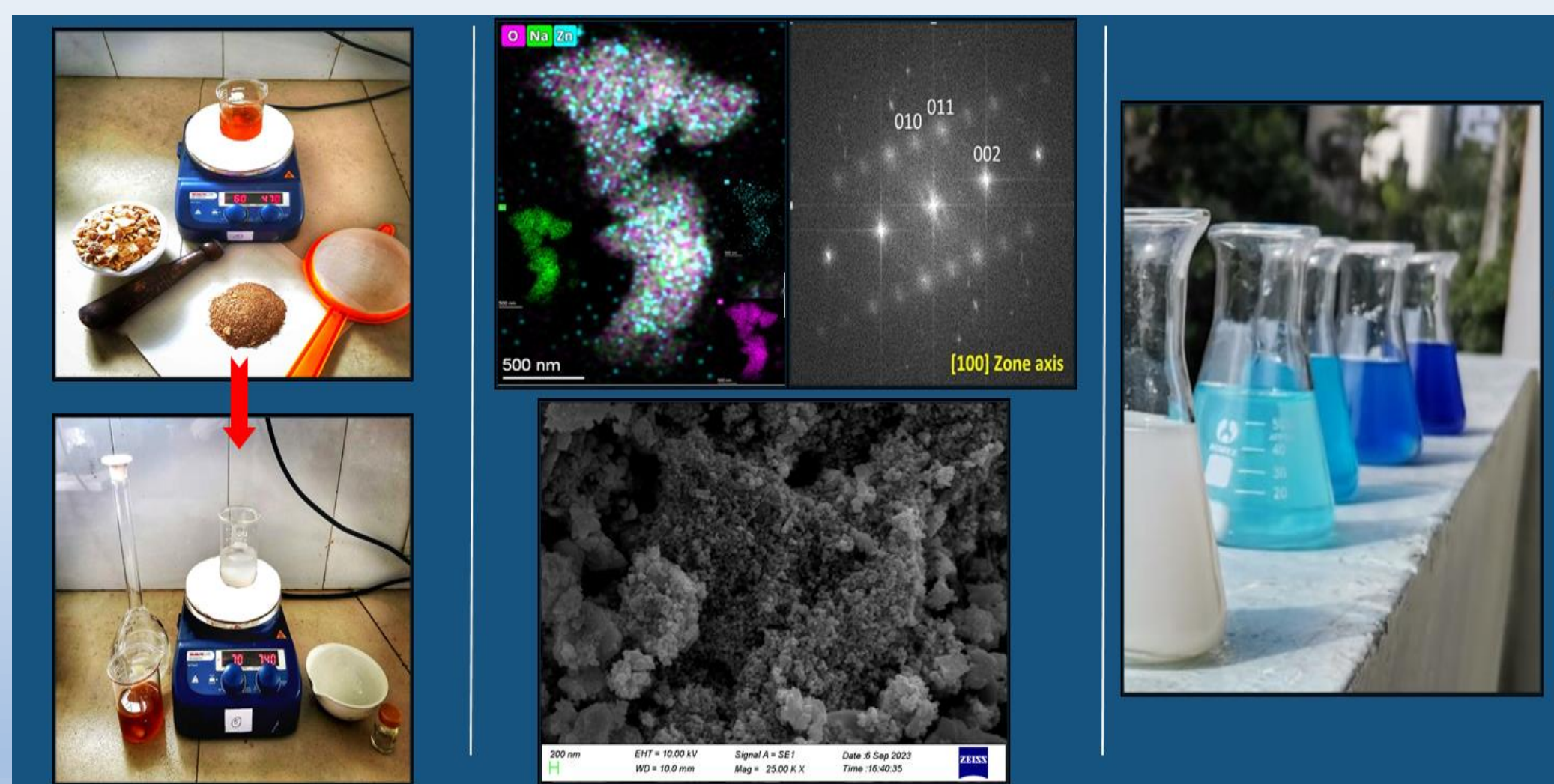
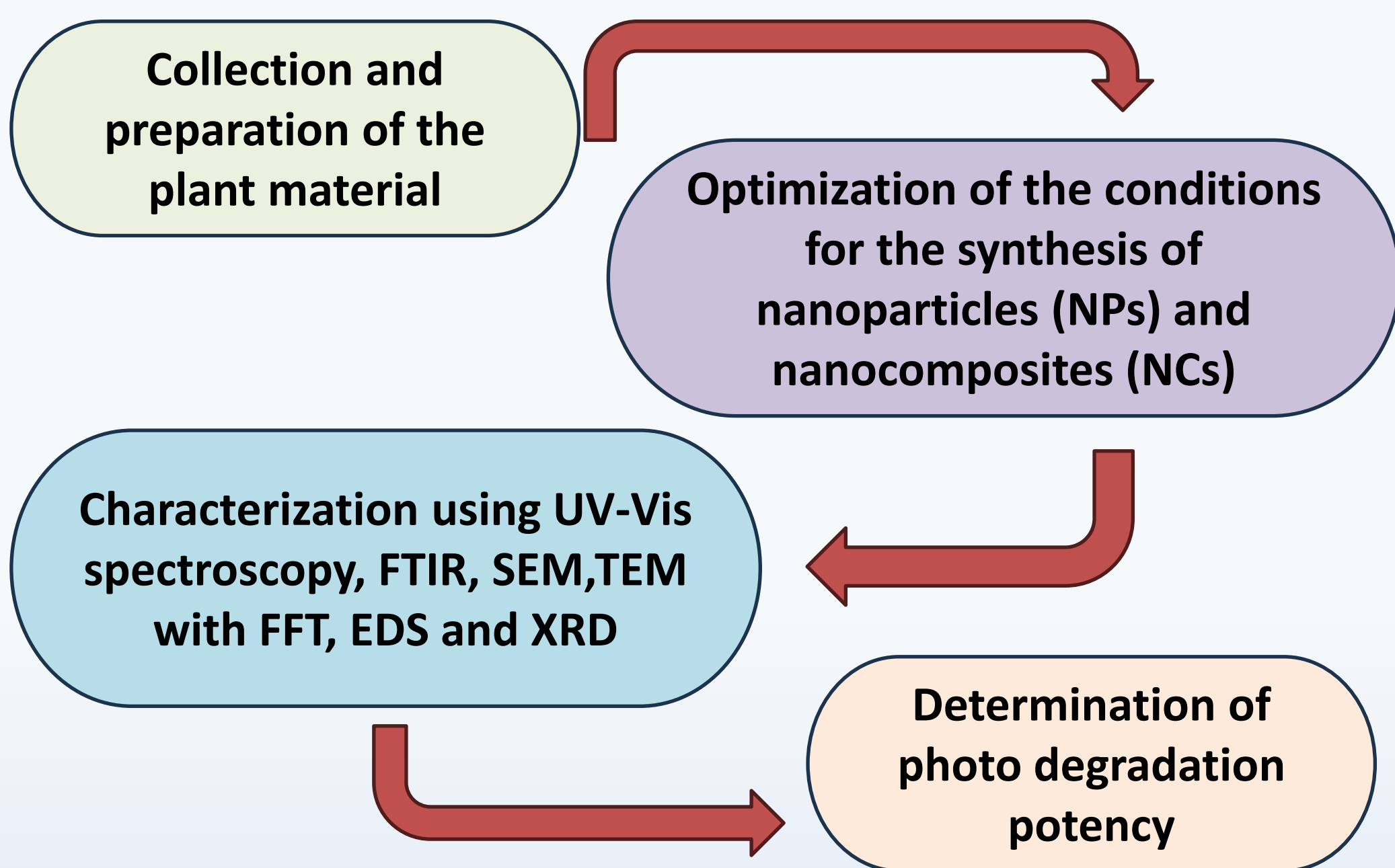


INTRODUCTION

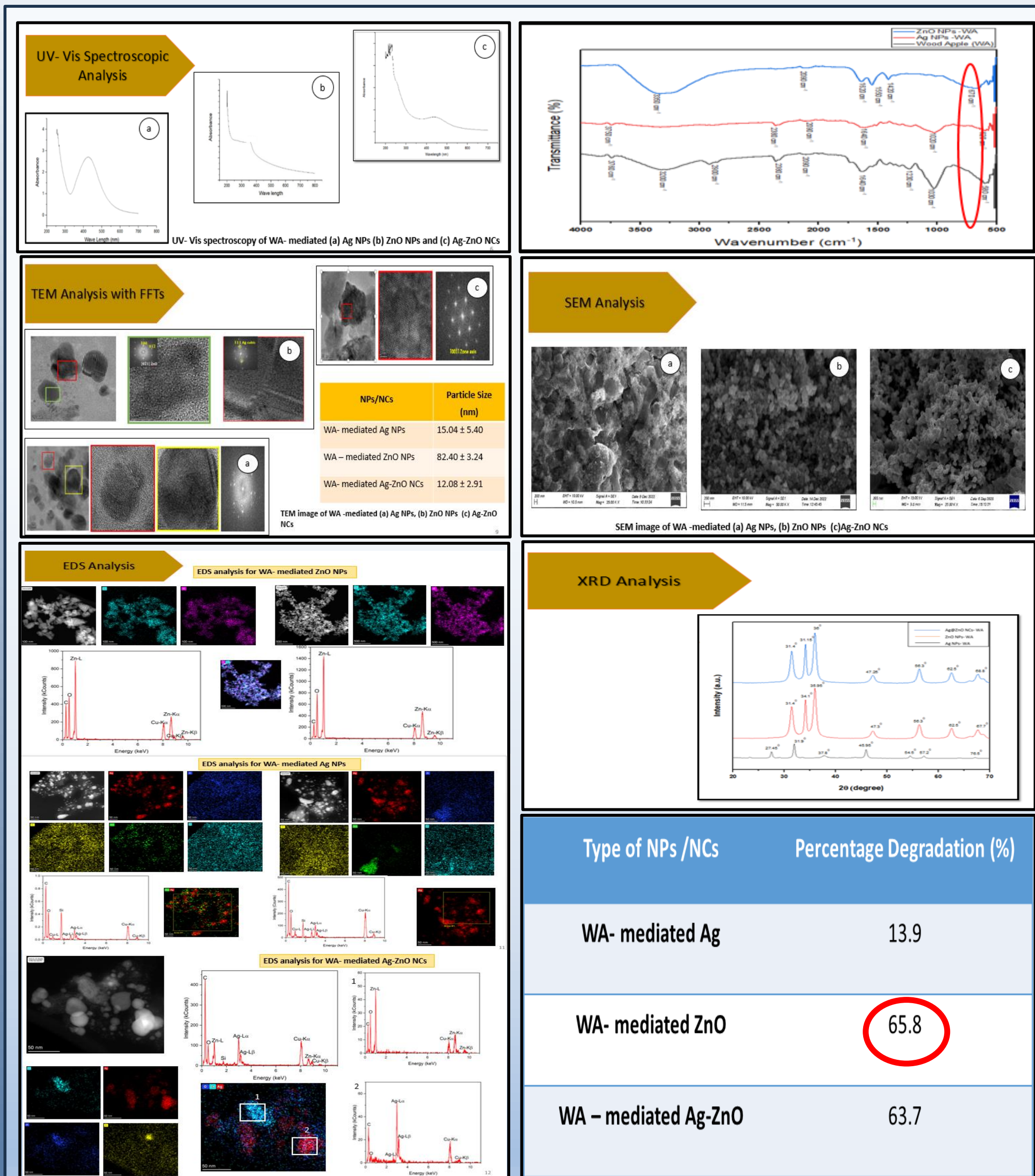
- Bio-synthesis of nanomaterials (NMs) offers eco-friendly solutions
- The outer shell of the wood apple (WA), also known as "bael"
- Wood apple (*Aegle marmelos*) is a fruit that contains various phytochemical constituents



METHODOLOGY



RESULTS & DISCUSSION



CONCLUSION

- The phytochemicals in the wood apple outer shell acted as capping and stabilizing agents, causing the formation of stable NP/NCs
- The chemical and physical properties of these NP/NCs depend on different parameters
- The SEM, TEM, EDS, and XRD analysis confirms the formation of stable NPs and NCs
- The study reveals that WA-mediated ZnO NPs and Ag@ZnO NCs exhibit nearly comparable photo-catalytic activity against Brilliant Blue dye
- ZnO NPs' exceptional photo-catalytic activity stems from their distinctive surface properties and efficient charge carrier generation
- This achieves environmental sustainability while adding value to WA outer shells, instead of disposing of them as waste

REFERENCES

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