Green synthesis of zinc oxide nanoparticles using different plant extracts and their antibacterial activity against *Xanthomonas oryzae* pv. oryzae

Sample Preparation

Extracts were made from Olive leaves, Chamomile flower and Red tomato.

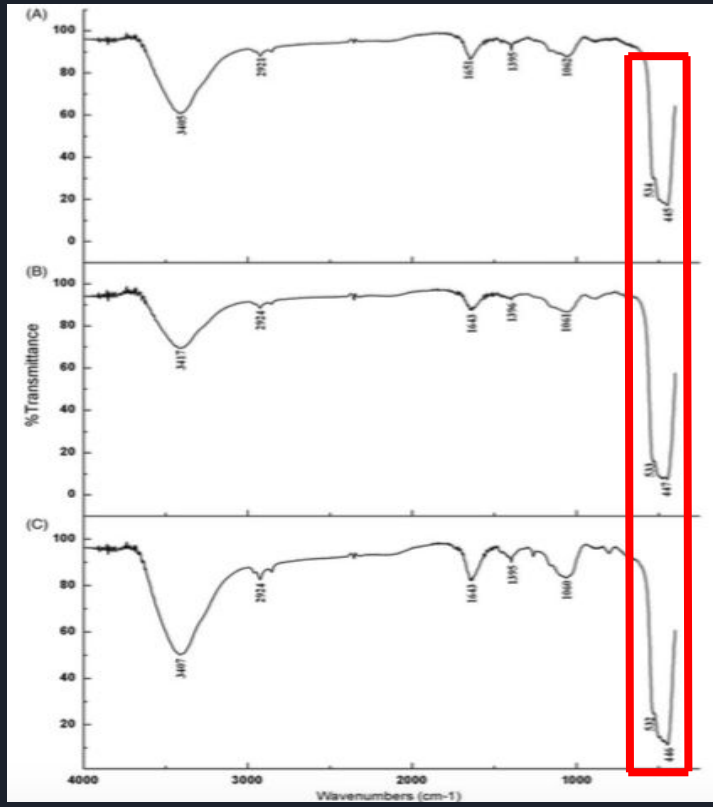
Then they were rinsed in double distilled water and then air-dried. 2 gr of finely powdered fruits, flowers, and leaves were extracted in a water bath (200 ml) at 60–70 C for 4 hrs. The extracts were then cooled at room temperature and filtered. The extracts collected were used for the synthesis of ZnO NP's..

A ratio of 1:1 of 1 M ZnO and the extracts were mixed in separate flasks, and the solutions were subjected to continuous heating and stirring at 100 rpm for 4 h. The resultant NP's solution was purified by centrifugation at 10,000 g for 20 min. Supernatants were discarded, and the NP's pellet were collected, washed with distilled water, freeze-dried and stored at -80 C.

Analytical Results

The spectra properties of ZnO NP's nanoparticles were observed using the dried powder of the synthesized ZnO NP's by FTIR spectrometer.. The pellets were scanned at 4 cm^{-1} resolution in the spectra range of 4000–400 cm^{-1} at room temperature.

The FTIR spectrum, absorption at 400 cm^{-1} to 600 cm^{-1} identifies the presence of ZnO NP's which further confirms the formation of these.



Fourier transform infrared spectra of ZnO NP's synthesized by (A) Olive leaves, (B) Chamomile flower, (C) Red tomato fruit.

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