

Multifunctional PLA/OLA blends containing Chitosan mediated Silver nanoparticles: thermal, mechanical, antibacterial and degradation properties.

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Supporting Information

Characterization of nanoparticles

Figure S1 shows the typical UV-vis absorption spectra of the resulting AgCH-NPs solution after lyophilisation of the reduced solution of silver nitrate with chitosan. The characteristic surface plasmon resonance (SPR) band centred at about 420 nm is indicative of the formation of silver nanoparticles [1].

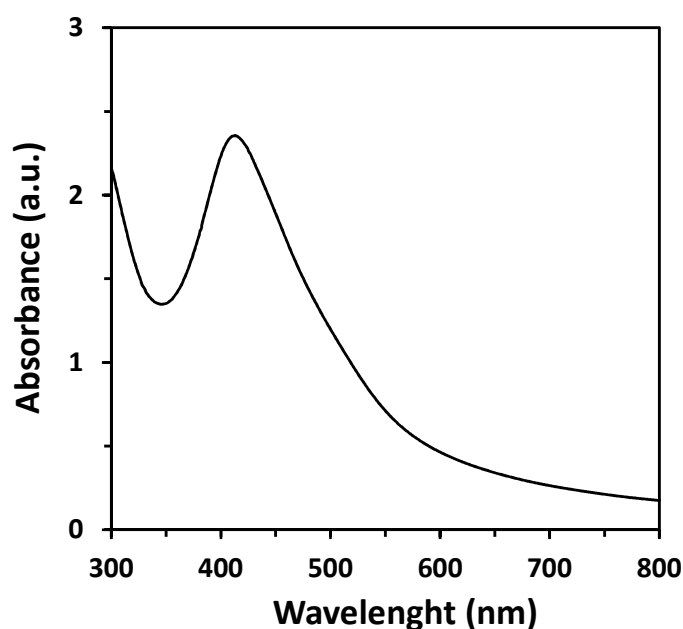


Figure S1. UV-vis absorption spectra of chitosan-based silver nanoparticles (AgCH-NPs) prepared by reducing AgNO₃ in a chitosan solution.

Figure S2 displays the XRD spectrum of silver NPs obtained by green chemistry method. It can be observed the characteristics peaks at 38° and 44°, which indicates face-centered cubic Ag crystals (-fcc- JCPDS 04-783). Besides, three intense peaks at around 28°, 32° and 46°, which corresponds to (110), (111) and (211) of Ag₂O, are also identified (JCPDS 76-1393) [2].

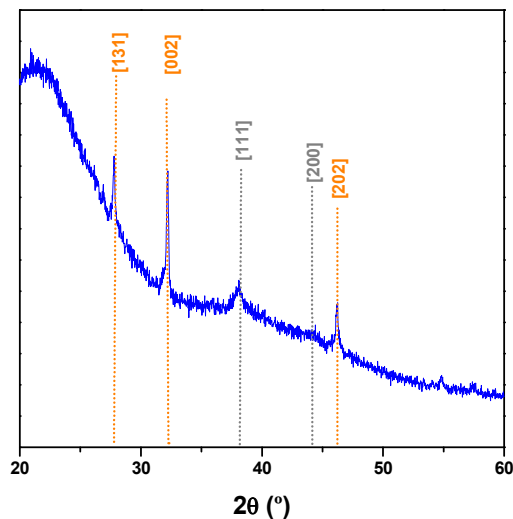


Figure S2. XRD spectrum of synthesized chitosan mediated AgCH-NPs.

References

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2. Pawar, O.; Deshpande, N.; Dagade, S.; Waghmode, S.; Nigam Joshi, P. Green synthesis of silver nanoparticles from purple acid phosphatase apoenzyme isolated from a new source *Limonia acidissima*. *J. Exp. Nanosci.* **2016**, *11*, 28–37.