

Electrochemically Active Biofilm-Mediated Green Synthesis of Silver Nanoparticles in Water

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Silver nanoparticles ranging from 1–2 nm have been synthesized when an electrochemically active biofilm (EAB) was challenged with a solution containing AgNO_3 as precursor and sodium acetate as an electron donor within 2 h in water. The electrochemically active bacteria present on the anaerobic biofilm act as a catalyst to oxidise the sodium acetate by producing electrons for the reduction of Ag^+ ions. High monodispersity, smaller nanoparticles, easy separation, fast and extracellular synthesis make this protocol highly significant in the area of nanoparticle synthesis. The nanoparticles were characterized by TEM, EDX, XRD and UV.

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