

ABSTRACT

Green synthesis of nanoparticles is an emerging approach as it has several advantages such as less-time consumption, non-toxic by-products and good stability. This approach is eco-friendly and use widely over chemical and physical method to synthesize nanoparticles on large scale. Mn doped ZnO and Mn doped ZnS nanoparticles are prepared by green synthesis using two different extract cucumber fruit extract (*Cucumis sativus*) and mint leaves extract (*Mentha piperita L*). Each extract contains polyphenols, terpenoids, and flavonoids, which act as capping agents and can change metal ions into metal nanoparticles (NPs). Nanoparticles of ZnO and ZnS are prepared firstly after they are doped with Manganese. UV, FTIR, PL, XRD and SEM techniques are used for characterization of nanoparticles. Nanoparticles are used for development of latent fingerprints on various surfaces like paper, glass, and plastic. Fingerprints are unique from person to person and is most important evidence in forensic science. Fingermarks have unique ridge details. When a person touches a surface, it leaves trace. Latent fingerprints are developed by powder dusting method. Anti-bacterial activity of these nanoparticles is also observed.