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Influence of Ag, Au and Pd noble metals doping on structural, optical and antimicrobial properties of zinc oxide and titanium dioxide nanomaterials

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Abstract

Oxide materials (ZnO, TiO₂) doped with noble metals were synthesized using the combustion technique. The results of the addition of Ag, Au, and Pd up to a concentration of 2 mol% on the structural, optical, morphological and antimicrobial properties was considered. X-ray diffraction experiments revealed that the crystal structure of the host materials remained unaltered despite doping with noble metals. From the scanning electron microscopy results, it was evident that the doped nanoparticles aggregated in chains of different sizes in the host