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Environmental Monitoring through Ag and Au Nanoparticles: A Mini Review

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Abstract*: A promising approach to enhance environmental monitoring capabilities is the use of nanomaterials, particularly silver (Ag) and gold (Au) nanoparticles. An overview of the uses of Ag and Au nanoparticles in environmental monitoring is given in this publication. Ag nanoparticles are useful tools for monitoring water quality and air pollution because they provide improved sensitivity, multiplex detection, and real-time monitoring capabilities. Au nanoparticles, on the other hand, have unique optical and electrical properties that make it possible to utilise them in the development of nanosensors for environmental parameter monitoring and the assessment of soil contamination. While these nanoparticles have many advantages, challenges such nanoparticle toxicity, environmental destiny, standardisation, and cost need to be resolved if they are to be used in a safe and sustainable manner. Ag and Au nanoparticles can greatly enhance environmental monitoring procedures and contribute to a more sustainable future by finding a balance between utilising the advantages and tackling the obstacles*

Keywords: monitoring, nanoparticles, surface-enhanced raman scattering , functionalized nanoparticles

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