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Application of Silver Nanoparticles for Natural Rubber Latex

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Antibacterial activity of silver nanoparticles (AgNPs) has been attracted many interests in several applications such as food packaging, medical devices, wastewater treatment and textile fabrics. In this work, antifungal activity of AgNPs for natural rubber latex has been investigated. A technique of green AgNPs synthesis route has been presented based on aqueous silver nitrate ($AgNO_3$) and Pistiastratiotes L. extracts acted as reducing agent. The antifungal activities of the AgNPs against Fusarium oxysporum, Geotrichum sp., Aspergillus oryzae, Rhizopus oligosporus, Penicillum sp. and Trichoderma sp. (fungi in natural rubber latex) were analyzed by disc diffusion method. The synthesized AgNPs were characterized by a UV/Visible spectroscopy (UV-Vis) and Transmission Electron Microscopy (TEM). The results exhibited the surface plasmon resonance at 395 nm. The average diameter of synthesized AgNPs was about 14-20 nm and spherical in shape. The synthesized AgNPs exhibited activity against fungi.

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