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Application of Metal Nanoparticles in Drug Delivery and Anti-Bacterial Coating

There are different metal nanoparticles, for example; silver, they are used to treat burns, cuts and abrasions, infections, etc. Silver nanoparticles coating is used for clinical applications. Therefore, a gel-based substance composed of silver nanoparticles is a better choice to treat wounds. Generating Hydrogen Peroxide out of Zinc Oxide is an effective tool to inhibit bacteria growth. Zinc Oxide restrains bacterial infection by releasing Zinc ions, which impairs the cell membrane.

Carbon Cobalt nanoparticle is a good option to be applied in coatings as well. Its permeability decreases as the frequency increases and energy storage is high at the highest frequency as well. It shows the best impedance at low temperature and is more capable in reducing the capacity of magnetic energy. Hence, low temperature results in more absorption of EM waves and the microwave absorption mechanism takes place with less dielectrics, less conductivity, multiple reflections, flexibility of the complex and less permeability. High impedance can create higher EM waves in coating layers. The carbon layer surface acts as a polarized center, which increases resistance. Furthermore, the nanoporous structure decreases permeability.

Key words: Silver Structures, Zinc Oxide, Carbon Cobalt Nanoparticle, Coating, Energy Storage, High Absorption, Low Permeability

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