

Using nanotechnology to reduce bacterial and viral activities on metal products surfaces

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Abstract:

The surfaces of metal products are one of the most common surfaces that transmit bacteria and viruses from one user to another, and due to the increasing number of people using these products (such as handles, water control devices, metal control panels inside elevators, and others), especially in public places and hospitals, in addition to the outbreak of some types of bacteria. With viruses that have reached the level of a pandemic, such as the Coronavirus (COVID-19), it has become inevitable for the product designer to search for modern and sophisticated methods and methods for treating metal surfaces in order to improve their properties and give them the ability to resist bacteria and viruses. The main question of the study was: Can the results of nanotechnology be employed in avoiding some health problems that are transmitted to humans through the use of mineral products? Can the surfaces of metal products be treated using nanotechnology to give them the ability to resist bacteria and viruses? The study aimed: the use of nanotechnology in treating the surfaces of metal products to improve the efficiency of the surfaces of metal products and give them the ability to resist bacteria and viruses, as well as to determine the most appropriate methods for treating the surfaces of metal products using nanotechnology in line with the nature of the product. The research hypotheses included: Nanotechnology can be used to avoid some health problems that may be transmitted to humans through the use of products. The results of nanotechnology can be employed in treating the surfaces of metal products to give them the ability to resist bacteria and viruses. Electroplating layers treated with nano-silver improve the surface properties of metal products and make them resistant to bacteria and viruses. Research method: the descriptive and analytical approaches and the experimental method.

Keywords

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