

Multi-Walled Carbon Nanotube Based Water Filter for Virus Pathogen Removal

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Abstract : Diseases caused by contaminated drinking water are the worldwide problem, which leads to the death and severe illnesses for hundreds of millions of people each year. There is an urgent need for efficient water treatment techniques for virus pathogen removal. The aim of the research was to develop a safe and economic solution, which helps with the water treatment. In this study, the synthesis of copper-based multi-walled carbon nanotube composites is described. The proposed solution utilizes a combination of a low-cost material with a high active surface area and copper antiviral properties. Removal of viruses from water was possible by adsorption based on electrostatic interactions of negatively charged viruses with a positively charged filter material.

Keywords : multi-walled carbon nanotubes, water purification, virus removal, water treatment

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