

Preparation of Ceramic Membranes from Syrian Sand Loaded with Silver Nanoparticles for Water Treatment

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Abstract : In this study, Syrian sand was used to create ceramic membranes. The process of preparing the membranes involved several steps, starting with the purification of the studied sand using hydrochloric acid, sorting according to granular size, and mixing the sand with liquid sodium silicates as a binder. Next, the effects of binder ratio, pressure formation, treatment temperature, and sand grain size were studied. Further, nanoparticles of silver were added to the formed membranes to improve their ability to purify bacterially polluted water. Prepared membranes were quite successful in removing bacteria and chemicals from water, and the water's requirements were brought up to level with Syrian drinking water standards.

Keywords : ceramic, membrane, water, wastewater

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