

### Characterization of the synthetic reverse osmosis membranes containing hyperbranched aromatic polyamide particles

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Membrane technologies, especially reverse osmosis and nanofiltration, have superseded other water-treatment processes for removal of dissolved salts, notably in desalination of seawater. In this study, new particles are synthesized by grafting of hyperbranched aromatic polyamide onto silica nanoparticles and polyamide composite reverse osmosis membranes were prepared by adding them. Hyperbranched polymers are highly branched macromolecules with three-dimensional spherical architecture. These particles were successfully characterized for confirming the properties by the FT-IR. The surface of membranes were observed by the scanning electron microscope(SEM). The performance of the resulting composite membranes in reverse osmosis was tested and the filtration experiment was carried out.