

Effective Water Purification by Impregnated Carbon Nanotubes

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Abstract : Water shortage in many areas of the world have predominantly increased the demand for efficient methods involved in the production of drinking water, So purification of water invoking cost effective and efficient methods is a challenging field of research. In this regard, Reverse osmosis membrane desalination of both seawater and inland brackish water is currently being deployed in various locations around the world. In the present work an attempt is made to integrate these existing technologies with novel method, Wherein carbon nanotubes at the lab scale are prepared which further replace activated carbon tubes being used traditionally. This has proven to enhance the efficiency of the water filter, Effectively neutralising most of the organic impurities. Furthermore, This ensures the reduction in TDS. Carbon nanotubes have wide range in scope of applications such as composite reinforcements, Field emitters, Sensors, Energy storage and energy conversion devices and catalysts support phases, Because of their unusual mechanical, Electrical, Thermal and structural properties. In particular, The large specific surface area, as well as the high chemical and thermal stability, Makes carbon nanotube an attractive adsorbent in waste water treatment. Carbon nanotubes are effective in eliminating these harmful media from water as an adsorbent. In this work, Candle soot method has been incorporated for the preparation of carbon nanotubes and mixed with activated charcoal in different compositions. The effect of composition change is monitored by using TDS measuring meter. As the composition of Nano carbon increases, The TDS of the water gradually decreases. In order to enhance the life time for carbon filter, Nano tubes are provided with larger surface area.

Keywords : TDS (Total Dissolved Solids), carbon nanotubes, water, candle soot

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