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## REMOVAL HYDROCARBONS FROM WASTEWATER OF PETROLEUM INDUSTRIES BY USING MWCNTS AFTER MODIFICATION WITH LOADING CERIUM OXIDE

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Multi-wall carbon nanotube (MWCNTs) could be one of the most important materials which got the attention of researchers in nanotechnology recently due to the surface area very high and the best adsorbent material. Several works are done in this field and they have recognized that flow rate and the temperature had a high impact on the removal efficiency and adsorption capacity. According to results, MWCNTs can be considered as the best adsorbent for hydrocarbons removal as compare to single wall carbon nanotubes and nano activated carbons. In this research, MWCNTs has been used to adsorb hydrocarbons from wastewater which is a by-product of petroleum industries. The modification to MWCNTs has been done by preparing nano metal oxides (e.g. CeO<sub>2</sub>) and loading at the surface of MWCNTs. Morphological characterizations, such as XRD, BET were done for newly prepared adsorbents. BET analysis has been used to determine the surface area. XRD, XRF was used to recognize the nano metal oxide at the surface of MWCNTs. According to the literature, metal oxide modified MWCNTs has shown more efficiency to adsorb hydrocarbons from wastewater. Metal oxide modified MWCNTs supposed to be more efficient to adsorb hydrocarbons from wastewater.

**Keywords:** MWCNT, Adsorption, Removal hydrocarbons.

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