Effectiveness Test of a Low-Cost and High-Efficiency Jordanian Micro Bentonite Filter To Remove Oily Pollutants From Water

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This project, in its current form, represents an attempt to treat water from organic oils using natural sources available in Jordan. The main idea was to use Jordanian Bentonite ore, whose surface has been modified to become micro-sized granules, to get rid of organic oils polluting water. Surface modified Bentonite, which was prepared by treating it with Hydrochloric acid (GBMs) was used. The (GBMs) showed a large surface area for the particles and positive surface charges, which made it a suitable adsorbent material for negatively charged oil drops. After various experiments, we found that 1g of (GBMs) showed better results in getting rid of approximately 94.7% of the oil, compared to 1 g of untreated Bentonite that didn’t get rid of the oil in a similar sample containing the same concentrations of oils. In order to reach the efficiency of our product to %100, another filter, which was made of charcoal from the plant of Inula helenium, was prepared in advance for this purpose. The idea of the project has been developed in its current model to include industrial applications that require the presence of treated water from organic oils in addition to treating sea and ocean water from the waste of ships and steamboat engines, as it is worth noting that the percentage of water pollution with toxic organic oil spots is constantly increasing due to human industrial activities.

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