

Removing Heavy Metals Using Different Types of Soils and Marble Powder in Oman

A. Wazwaz*, A. Al Jassasi, A. Al Balushi and A. Al Saifi[†]
Chemical Engineering Department, Dhofar University, Oman

Adsorption processes are being widely used in various researches for the removal of heavy metals from polluted water to make it safe as a drinking water. A simple adsorption technique followed by filtration is used for removing the heavy metals (Cu, Zn, Mn, and Cr) from polluted water. There are three types of Soils used as adsorbent (Silty, Sandy and Clay). Also, we used three types of marble powder (pure marble powder, impure marble powder, marble-granite mix powder) as adsorbent. The samples are collected from different regions of Oman. The maximum adsorption obtained is 96.01% in the case of pure marble powder with Zn heavy metal. The minimum adsorption value obtained is 6.70% in the case of impure marble powder with Mn heavy metal. In the case of soils, the best one is clay soil with Zn heavy metal (88.61%) and the worst one is Silty soil with Cr heavy metal (16.51%). In the case of marble powders, the best marble powder is the pure marble powder with Zn heavy metal (96.01%) and the worst one is marble-granite mix marble powder with Cr heavy metal (36.70%). Among all adsorbents, pure marble powder is the best as adsorbent and Zn heavy metal is the best heavy metal as adsorbate (96.01%) and the worst one is impure marble powder with Mn heavy metal as adsorbate (6.70%). The results are discussed details.

Biography:

A. Wazwaz finished his B. Sc and M. Sc from Yarmouk University (Irbid- Jordan). Wazwaz worked as TA and RA at Yarmouk University. He worked for four years in industry (Pharmaceutical Companies) as QC and Researcher. Wazwaz finished my PhD (Scholarship from European Union) from Paul Sabatier University (Toulouse – France). Wazwaz worked in teaching at different seven recognized Universities in Jordan, Palestine, and Oman. Wazwaz obtained Projects' Grants from Palestine Polytechnique University, Dhofar University, and TRC (The National Research Council of Oman). I am a member as editorial board in so many international journals. Wazwaz am a reviewer for so many international journals. Wazwaz participated in so many international conferences. Wazwaz worked in different fields of research: Solar Energy, Renewable Energy, Kinetics, Adsorption, Corrosion, and Pharmaceutical Generic Products.