World Academy of Science, Engineering and Technology
International Journal of Environmental and Ecological Engineering
Vol:9, No:08, 2015

Isotherm Study of Modified Zeolite in Sorption of Naphthalene from Water Sample

Authors : Homayon Ahmad Panahi, Amir Hesam Hassani, Akram Torki, Elham Moniri

Abstract : A new sorbent was synthesized through chemical modification of clinoptilolite zeolite using 2-naphtol, and characterized with fourier transform infrared spectroscopy and elemental analysis methods and applied for the removal and elimination of trace naphthalene from water samples. The optimum pH value for sorption of the naphthalene by modified zeolite was in acidic pH. The sorption capacity of modified zeolite was 142 mg. g−1. Isotherm models, Langmuir, Frendlich and Temkin were employed to analyze the adsorption capacity of modified zeolite, which revealed that naphthalene adsorption by this zeolite follows Langmuir model.

Keywords : zeolite, clinoptilolite, modification, naphthalene
Conference Title : ICESE 2015 : International Conference on Environmental Science and Engineering
Conference Location : Istanbul, Türkiye
Conference Dates : August 17-18, 2015