World Academy of Science, Engineering and Technology
International Journal of Environmental and Ecological Engineering
Vol:17, No:11, 2023

Removal of Methyl Green by an Algerian Calcic Clay

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Abstract : The history of the environment and its chemistry is above all the history of its pollution. For a large part, it is the changes made in the air, water and soil by human beings. From there, we can define that pollution is an unfavorable modification of the natural environment that appears as a by-product of human action, through direct and indirect effects. The protection and preservation of the environment is one of the pillars of sustainable development, which is currently a major issue for the future of man and the planet. Currently, humanity is facing an alarming increase in the pollution of the natural environment by various organic or inorganic materials. The objective of our work is to study the adsorption of a textile dye which is known in the industrial environment, methyl green, on raw calcic clay. Our material was characterized by X-ray diffraction (XRD) Fourier transform infrared (FTIR), we also determined its cation exchange capacity (CEC), pHzc and specific surface by Methylene Blue method. The kinetic and thermodynamic study of the adsorption of methyl green was studied, these experiments resulted that the adsorption of the dye follows pseudo second order kinetics, and according to the thermodynamic study and the study of the probability we can say that we have a physisorption.

Keywords : calcic clay, dye, materials, environment
Conference Title : ICHWMWT 2023 : International Conference on Hazardous Waste Management and Water Treatment
Conference Location : Venice, Italy
Conference Dates : November 13-14, 2023