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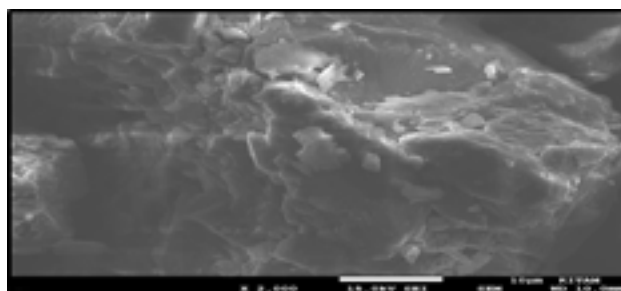
# RECYCLING

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## Color removal from textile dyeing effluent by natural and activated clay adsorbents

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Colored organic effluents are produced in different industries, i.e. textiles, paper, leather, plastics, rubber, cosmetics, etc. Discharging of dye effluents into water resources even in a small amount can affect the aquatic life. Dye ions are commonly removed from aqueous streams through coagulation-precipitation, ion exchange, ultrafiltration, nanofiltration, reverse osmosis, electro dialysis and solvent extraction. These methods are expensive. Adsorption is the most popular method for wastewater treatment due to its easy and inexpensive operation. In this study removal of malachite green dye ions from aqueous solutions using natural and activated clay adsorbents was studied. The effects of contact time, initial dye concentration and adsorbent dosage on malachite green dye removal efficiency were examined in a batch system. The equilibrium adsorption data were analyzed by Langmuir, Freundlich and Temkin adsorption isotherm models. The pseudo-second order, Elovich and intraparticle diffusion kinetic models were applied to the experimental data in order to describe the removal mechanism of dye ions using natural and activated montmorillonite clay. The results show that natural and activated montmorillonite is an alternative low-cost adsorbent for removing malachite dye ions.



**Figure 1:** Scanning electron microscope (SEM) micrograph of montmorillonite

### Biography

Handan Akülker graduated from Chemical Engineering and Genetics and Bioengineering double major program at Yeditepe University with full-scholarship in 2012. She worked at State Hydraulic Works as an Analyst for 3 years. Then, she started to work as a Research Assistant at Ondokuz Mayıs University in 2016. She is still a Master's student at Chemical Engineering Department.

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