

## **Preparation of magnetic iron oxide nanoparticles@carbon for adsorption of heavy metals**

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Magnetic nanoparticles have attracted great interest because of its unique chemical and physical properties as well as wide potential in technological and environmental applications. A promising environmental application it is their use as adsorbents in water treatment and effluents. In this work, magnetic nanocomposites were prepared from the junction of a magnetic phase ( $\text{Fe}_3\text{O}_4$ ) and porous amorphous carbon using the hydrothermal carbonization followed by thermal treatment. These materials would remove contaminants by adsorption and consequently could be separated from aqueous medium by presence of a magnetic field. So, in addition to preparing nanocomposites, we carried out a systematic study of chromium (VI) adsorption employing batch methods. First of all, nanocomposites were analyzed by X-ray diffraction (XRD), vibrating sample magnetometry (VSM), scanning electron microscopy (SEM) and transmission (TEM), energy-dispersive X-ray spectroscopy (EDS) and surface area (BET), after that, we evaluated the effect of some parameters such as contact time and concentration (adsorption isotherms) on the efficiency of chromium (VI) removal.

### REFERENCES

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