Technique for adsorption of contaminants by nano clays

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The extended use of toxic organic compounds in many industrial or agricultural activities and their frequent presence in water, soils and sediments represents an important environmental concern nowadays.

Among the strategies used at present to preserve the quality of the water and soil and this way to diminish the environmental risk that supposes the chemical pollution, stands out the use of adsorbents of under cost, already they are natural or modified, to immobilize these compounds and to avoid the pollution of the water with the consequent reduction of environmental and economic costs. (del Hoyo et al. 2014)

Clay minerals and clays are very extended compounds on the earth surface so they constitute the main component of soils and sedimentary rocks. Due to their presence and special properties that they have, mankind has used for different applications, not being rare to find references to this subject in works of classic authors. (del Hoyo. 2007)

We have studied the adsorption of several contaminants related to water by natural or modified nano-clays, searching their interaction mechanisms and the possible recycling of these materials for environmental purposes and prevention of the health using ultrasounds techniques as it has been proved to be a very useful tool in enhancing the reaction rates and enhances the mass transfer or sorption processes. (Breitbach. 2001)

We also have used the FT-IR spectroscopy and DTA/TG studies to confirm the reciclability of these materials and the possible application in the industry to prevent the contamination.

References

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