

Nitrate and nitrite ion removal from water using activated carbon based on solid olive wastes

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Nitrate & nitrite contamination of surface and ground water has become one of the most serious environmental problems all over the world. Therefore simple and economic processes to purify water from those contaminants based on agricultural wastes are proposed.

Carbon has been prepared here based on solid olive stones, using different routes. Different carbon batches were then activated by different techniques. $ZnCl_2$, H_3PO_4 and $NaHCO_3$ were all used for activation under different treatment conditions. The resulting activated carbon surface was characterized by SEM and surface area measurement. Carbon activated by $ZnCl_2$ effectively adsorbed nitrate and nitrite ions from pre-contaminated water samples. Different methods of preparation and activation showed significant effects on the activated carbon adsorption efficiencies, which paralleled their porosities, surface textures and surface areas. Effect of different parameters on adsorptions processes such pH, concentration and others will be presented.

Key Words: Activated carbon, nitrate, nitrite, adsorption.