

Property of spherical activated carbon contained zinc oxide

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In this study, zinc was immobilized on spherical activated carbon to remove humic acid(HA) by photochemical mechanism. The spherical activated carbon starting material was weak acid ion-exchange resin that was treated by $[Zn(NH_3)_4]^{2+}$ aqueous solution. The treated resins and raw resins were carbonized under nitrogen condition for 0.5hr from 500 to 900 to convert into spherical activated carbon. The spherical activated carbon samples were measured physical characteristic such as X-ray patterns, SEM image, EDS, EPMA, BET, intensity and zinc content. The X-ray diffraction peaks corresponding to ZnO type appeared and the shape was spherical with a diameter about $150\mu m \sim 200\mu m$. The spherical activated carbon samples were used to remove humic acid(HA) in batch reactor for measuring photochemical activity. The HA removal efficiency was about 80%.