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## **INFLUENCE OF SURFACE IONIZATION ON THE ADSORPTION OF AQUEOUS ZINC SPECIES BY ACTIVATED CARBONS**

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**Abstract**-A surface ionization and adsorption model is used to simulate the adsorption of zinc species from aqueous solutions of varying pH on a number of different activated carbons and the results compared with experimental data. In all cases good agreement is obtained between theory and experiment. It is shown that for most of the carbons the uptake of zinc is due to adsorption of  $Zn^{2+}$  ions on ionized acid sites, the calculated equilibrium constants being of the order of  $10^{10}$ . On the other hand, one of the carbons used (NORIT AZO) contains virtually no acid sites, but a high concentration of strong basic sites, and the uptake of zinc in this case appears to be due to adsorption of a negatively charged hydroxy complex on protonated basic sites, the estimated equilibrium constant being  $10^7$ . © 1997 Elsevier Science Ltd. All rights reserved

**Key Words**-A. Activated carbon, adsorption, C. molecular simulation, D. surface properties.