

Surfaces, double layers, and adsorption V: models of specific or "Type 2" adsorption

Students of double layers have long noted that some mineral-solution interactions lead to adsorbed layers of ions that are more firmly bound than would be expected from only electrostatic adsorption, and/or the layers consist of specific ions, rather than a random

selection of the ions present as solutes in the solution. We thus speak of "specific" or "Type 2" adsorption, as opposed to the Type 1 adsorption presented in Panels 6 and 7 of this series.

The panels below show two possible explanations

of, or models for, specific adsorption. In Panel 8, the mineral surface has sites of a particular size in which specific ions nest most effectively (i.e., they "fit" the best). In Panel 9, the surface consists of ions with a bonding character that favors bonding (perhaps of a covalent nature) to specific ions with a similar bonding character.

