

## **CURRENT KNOWLEDGE ON THE LAYER CHARGE OF CLAY MINERALS**

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Presentations given on the preconference workshop devoted to layer charge, one of the most important characteristics of clay minerals, to be held in Smolenice, Slovakia, on 18 and 19 September 2004, will be summarised.

The invited lectures include:

- cation exchange capacity and layer charge of clay minerals;
- use of the  $\text{NH}_4^+$  – IR signal to study the layer charge of clay minerals;
- a new method for determination of layer charge and charge distribution of smectites;
- influence of layer charge on hydration, swelling and cation exchange properties of smectites in aqueous systems;

- structural Fe(III) reduction in smectites;
- charge of component layers in illite-smectite;
- distribution of atomic charges in models of smectite layers;
- the alkylammonium method in the lab: From preparation to calculation of the layer charge of smectite;
- effect of the layer charge of smectites on optical properties of organic dyes;
- critical evaluation of methods of determining layer charge;
- optimising layer charge for sorption, catalysis and composites.