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## POWDER RHEOLOGY OF NANOCRYSTALLIC PARTICLES *PRÁŠKOVÁ REOLOGIE NANOKRYSTALŮ*

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### Summary

*Pigments are mostly nanometric powder of anisometric particles providing complex rheological behaviour. The interparticle forces of grains ( $> 100 \mu\text{m}$ ) are based on direct contact, which is mainly influenced by the particle size and shape. On the other hand powder ( $< 4 \mu\text{m}$ ) and especially nanometric powder ( $< 100 \text{nm}$ ) is influenced mainly by electrostatic charges and by moisture (respectively by the liquid and solid bridges forming). However the morphology affects the surface area and thus the distribution of surface charge and the moisture content on/in single particle. Last but not least, it is also good to know the history of the powder, i.e. the effect of aging and the memory of the powder on the strength of the material. The nanometric powder  $\text{TiO}_2$  was chosen as a demonstration material and measuring device was FT4 powder rheometer.*

### Key words

FT4 Powder rheometer,  $\text{TiO}_2$ , moisture, electrostatic charging, powder history, powder stability and flowability