

# Top-Down Formulation of Goethite Nanosuspensions for the Production of Transparent, Inorganic Glass Coatings

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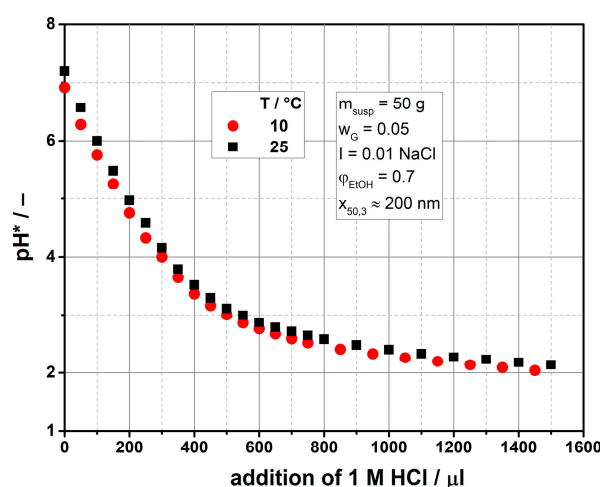


Figure S1. Titration curves for goethite suspensions at different temperatures.

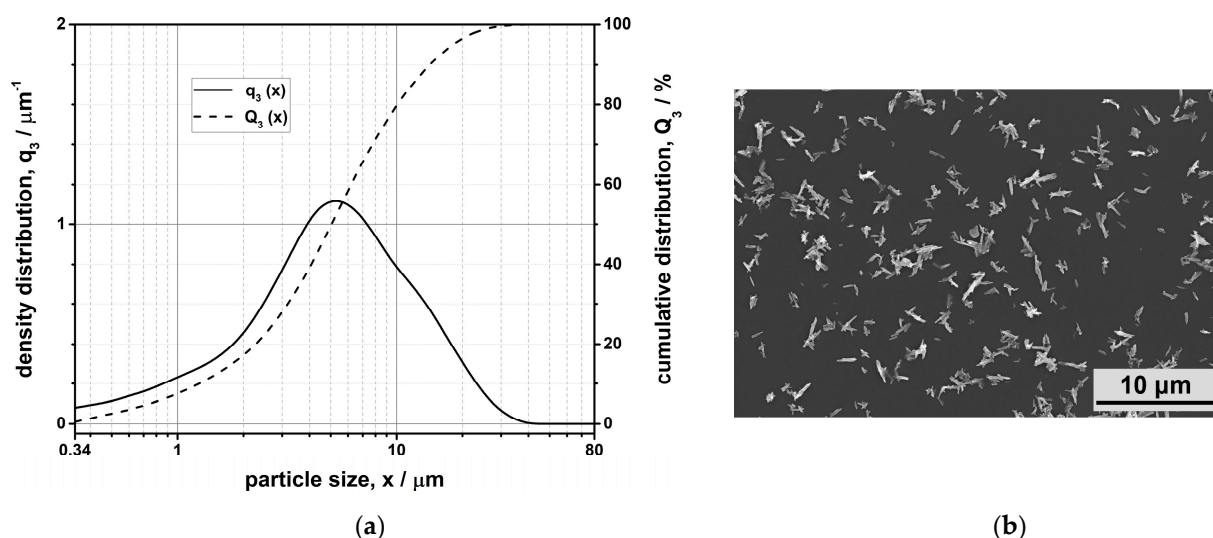


Figure S2. (a) Particle size distributions of goethite feed material. (b) SEM image of goethite feed material.

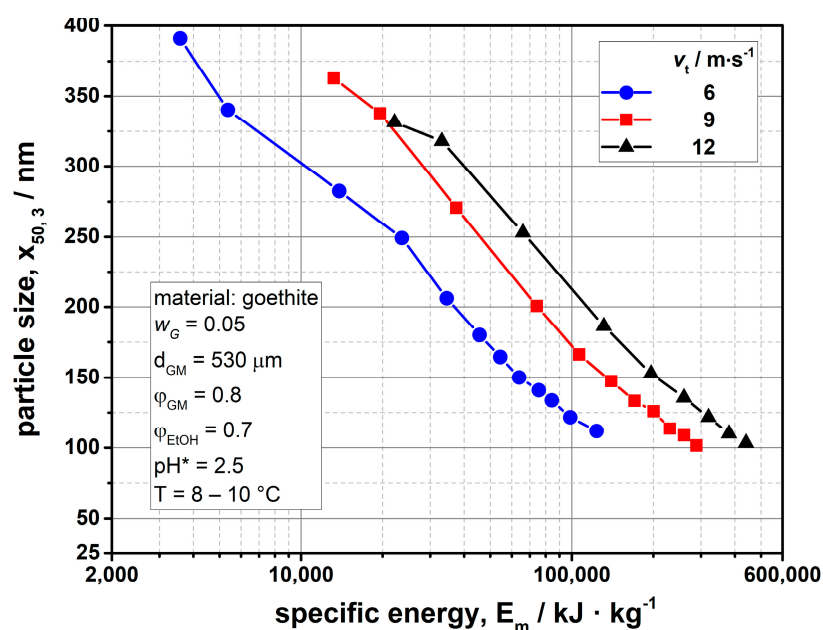


Figure S3. Grinding curves for different stirrer tip speeds applying a grinding media size of  $d_{GM} = 530 \mu\text{m}$ .

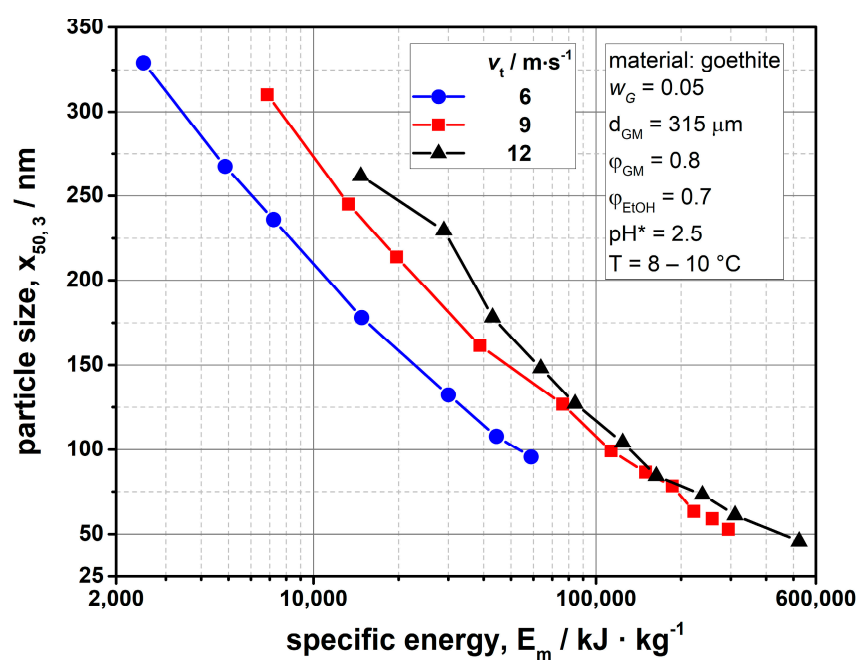


Figure S4. Grinding curves for different stirrer tip speeds applying a grinding media size of  $d_{GM} = 315 \mu\text{m}$ .

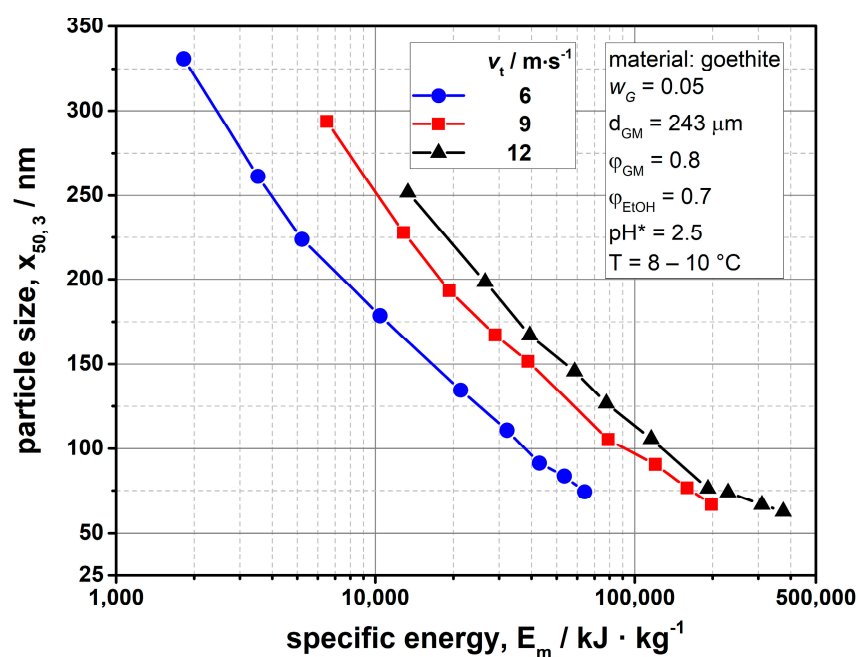


Figure S5. Grinding curves for different stirrer tip speeds applying a grinding media size of  $d_{GM} = 243 \mu\text{m}$ .

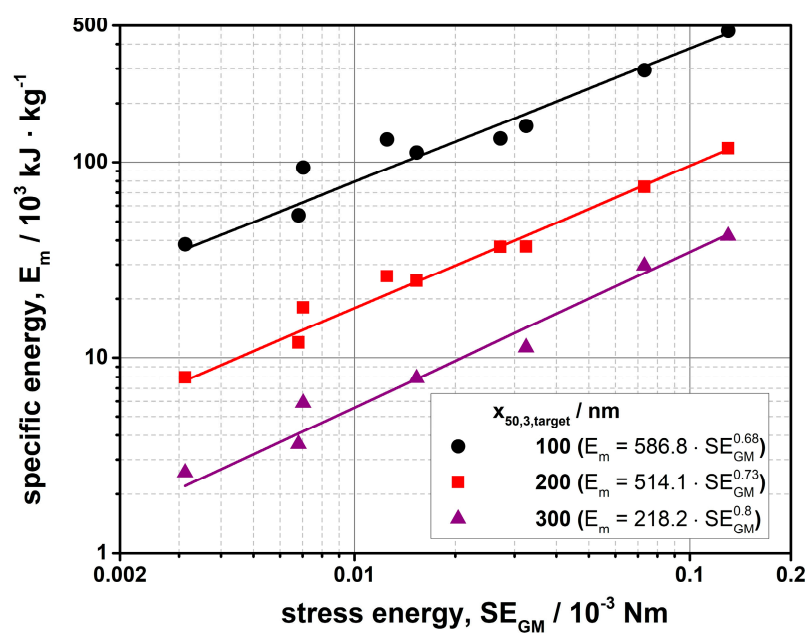
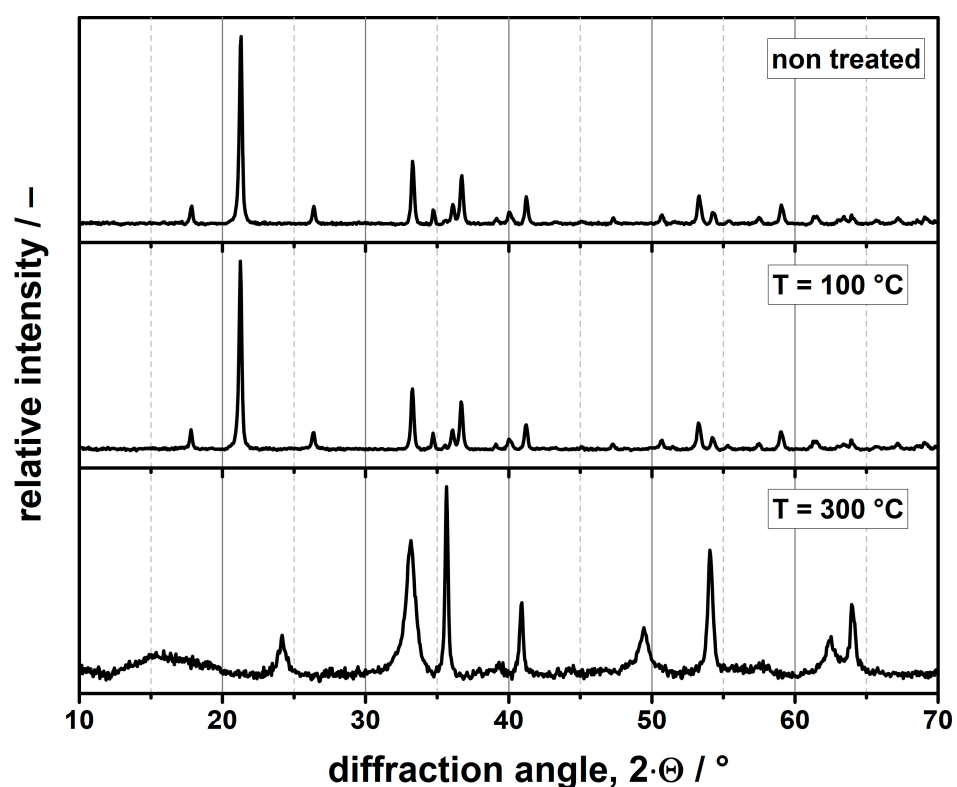


Figure S6. Log-log representation of the dependence between specific energy and stress energy.



**Figure S7.** X-ray powder diffraction patterns for nontreated and heat treated goethite feed material. All reflections observed for the untreated sample as well as the sample treated at 100 °C match the goethite reference pattern (ICSD No. 98-003-7156), whilst after drying at 300 °C, all reflections except for the broad signal centered at about 15.5°  $2\cdot\theta$  can be assigned to hematite (ICSD No. 98-001-5840). Notably, whilst most reflections are significantly broader compared to the initial material, several reflections show higher sharpness, pointing to strong anisotropy of the formed particles.