Product Presentation Anton Paar ECS 2023, Nürnberg

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Evaluation of coatings by using modern testing and analysis methods such as rheology, tribology, particle and powder characterization, gas adsorption, microscopy and robotics

This presentation will give a brief overview of modern laboratory instrumentation to characterize the properties of coatings and their components. Examples will be given:

- Flow and viscoelastic deformation behavior, thixotropy, long-term stability of dispersions, curing of powder coatings (using viscometers, rheometers, DMA/DMTA equipment and automated robotic systems)
- Mechanical surface properties, e.g. friction, stick-slip (using tribometers, scratch testers, mar-resistance, micro and nano indenters, adhesion, 3D morphology)
- Physical-chemical surface properties (e.g. zeta potential)
- particle size and particle size distribution PSD (by laser diffraction, dynamic light scattering DLS, electrophoretic light scattering ELS, zeta potential)
- Specific surface area (via gas adsorption, specific pore volume, porosity, bulk density)
- Powder (e.g. fluidization, flowability, cohesion strength, surface analysis)