

Watching paint dry

Paints and coatings are used for both protection and decoration of surfaces, and are found everywhere. PPG industries is a world-leading developer and global producer of paints and coatings. One of the key features of the protective and decorative capabilities of a coating is the dispersion of the pigment particles on the coated surface. Using time-resolved ultra small-angle X-ray scattering (USAXS), real-time structural data were obtained of the titanium dioxide pigment particles, giving a detailed movie of their dispersion during the drying process.



The drying of paint was investigated in real-time, revealing nanometer scale details of the process.

Through participation in the NXUS project, PPG managed to obtain significant insight into the crucial drying process, testing both different pigments and paint-binder types. Knowing the drying process in high detail helps PPG to produce more efficient paints and reduce the amount of pigment particles needed, hence reducing the cost and the environmental impact of their product. This knowledge is not obtainable by other characterization techniques due to the non-invasive nature of SAXS and the real-time capabilities of the technique.



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