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【134】 Colloidal Supercrystal Growth studied in-situ by X-ray Scattering

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When colloidal nanocrystals self assemble into ordered superstructures they form functional solids that inherit the electrical properties of the single nanocrystals (NCs). To what extent these properties are enhanced depends on the specific ordering of the NCs within the superstructure.

Here, the formation of supercrystals using faceted nanocrystals as building blocks was investigated by *in-situ* small angle x-ray scattering (SAXS) at lab and synchrotron (ELETTRA) sources. As building blocks we used magnetic FeO-nanocubes and -nanostars as well as faceted semiconducting PbTe/PbS nanocrystals. Additionally, we determined the atomic crystal structure (with XRD/WAXS) of the NCs within the supercrystals and demonstrated the connection between crystal structure and superstructure via the NCs' shape.

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