

How to assemble polydisperse nanoparticles into clusters with predefined fractal dimension?

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A generalized non-kinetic off-lattice algorithm to construct stochastic fractal clusters of polydisperse particles with tunable cluster parameters including dimension, is presented. The model is based on a hierarchical procedure and makes it possible to cover the full range of natural mass fractal dimensions between one and three. A morphological study of numerically generated clusters based on the correlation analysis in both direct and reciprocal spaces is given regarding small-angle scattering analysis.

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