

Nanostructured surfaces

Dynamical properties of 2D aggregates in patchy particle systems

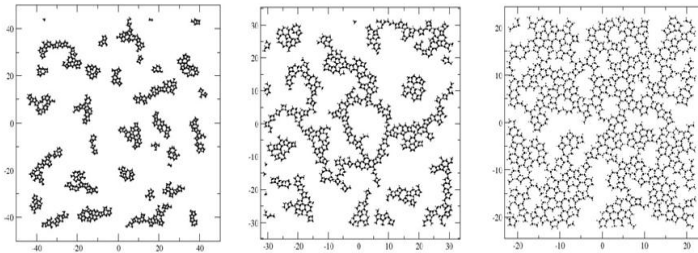
A. Chrzanowska¹, J. Kurzyk¹, P. Karbowniczek¹

¹*Institute of Physics, ul. Podchorążych 1, Kraków University of Technology, 30-084 Kraków, Poland.*

E-mail: achrzano@usk.pk.edu.pl

Particles with surface interaction spots may form temporal aggregates that depending on density, temperature, geometry and interaction type of the spots (or patches) may form different structures exhibiting their own static and dynamical characteristics. When confined to 2D such systems can be used to fabricate nanostructured surfaces/layers with prescribed and known properties.

Basing on the two-dimensional Monte Carlo obtained configurations of particles with square well potential interacting spots the Molecular Dynamics simulations are performed to provide the Mean Square Displacement and velocity correlations profiles. The aggregates are also shown to be formed not only by the bonded spots but also by a geometrical entanglement.



Different aggregates of patchy particles with 3 surficial interactive spots in 2D for different values of densities.