**Nanostructured surfaces**

**Relaxation in jammed monolayers of elongated particles**

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The relaxation processes in systems of elongated particles (discorectangles) adsorbed on a plane was studied numerically. The initial jamming state was formed using the random sequential adsorption (RSA) model [1]. In this model, particles are placed sequentially at random on a solid surface without overlapping with previously placed particles. An off-lattice model with continuous positional and orientational degrees of freedom was considered. The partially oriented systems with the preassigned order parameter *S*0 (*S*0∈ [0; 1]) were studied and the aspect ratio of particles (length-to-width ratio) was varied within the range *ε*=1÷12. After formation of jamming state it was relaxed via translational and rotational Brownian motions. For systems with relatively small aspect ratios (*ε*≤9) the relaxation into the isotropic state with *S*=0 was always observed. In the intermediate range, 9<*ε≤*12, the relaxation into the isotropic or nematic phase was observed (depending on the preassigned value of order parameter *S*0). In systems with higher aspect ratio (*ε*>12), the relaxation into the nematic phase was always observed. The changes in the order parameter, percolation connectivity and electrical conductivity of studied systems during the relaxation were also discussed.

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1. *Lebovka, N. I.; Tatochenko, M. O.; Vygornitskii, N. V.; Eserkepov, A. V.; Akhunzhanov, R. K. & Tarasevich, Y. Y.* Connectedness percolation in the random sequential adsorption packings of elongated particles // Phys. Rev. E, 2021, 103, 042113