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Crystallization and micro-structure in high charged colloids EFRAIN URRUTIA-BAÑUELOS, Departemento de Investigación en Física, Unuversidad de Sonora, HELIM ARANDA-ESPINIZA, Bioengineering Deparment, University of Pennsylvania, ALVARO POSADA-AMARILLAS, Departemento de Investigación en Física, Unuversidad de Sonora, MARTÍN CHAVEZ-PAEZ, Instituto de Física, Univarsidad Autónoma de S.L.P. — Crystallization and micro-structure of the high charged colloids particles was studied by computer simulation, the particles interaction was modeled by a screened Coulomb potential. We used 3000 particles in our simulation cell to let them evolution from an initial random configuration, periodic boundary conditions was imposed to simulate the bulk. The time evolution of the excess entropy shows long-ranged self-ordering and a crystalline transition, the crystalline nucleation depends of the volume fraction as well as the particle charges. The common neighbor analysis (CNA) exhibit the competition of two micro-structure types, icosahedral and bcc. In the equilibrium bcc crystalline order is dominant with relative abundance between 80-90 per cent over the other micro-structures.

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