

Abstract Submitted  
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**Observation of condensed phases of quasi-planar core-softened colloids** PRIMOZ ZIHERL, University of Ljubljana & Jozef Stefan Institute, NATAN OSTERMAN, DUSAN BABIC, IGOR POBERAJ, University of Ljubljana, JURE DOBNIKAR, Jozef Stefan Institute — We experimentally study the condensed phases of repelling core-softened spheres in two dimensions. The dipolar pair repulsion between superparamagnetic spheres trapped in a thin cell is induced by a transverse magnetic field and softened by suitably adjusting the cell thickness. We scan a broad density range and we materialize a large part of the theoretically predicted phases in systems of core-softened particles, including expanded and close-packed hexagonal, square, chain-like, stripe/labyrinthine, and honeycomb phase. Further insight into their structure is provided by Monte Carlo simulations.

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