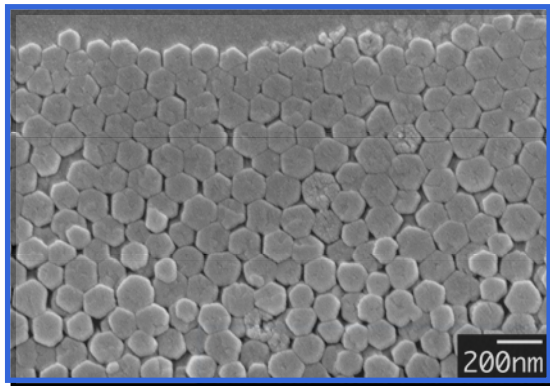


Convective Nanoparticle Assembly Into Colloidal Crystals

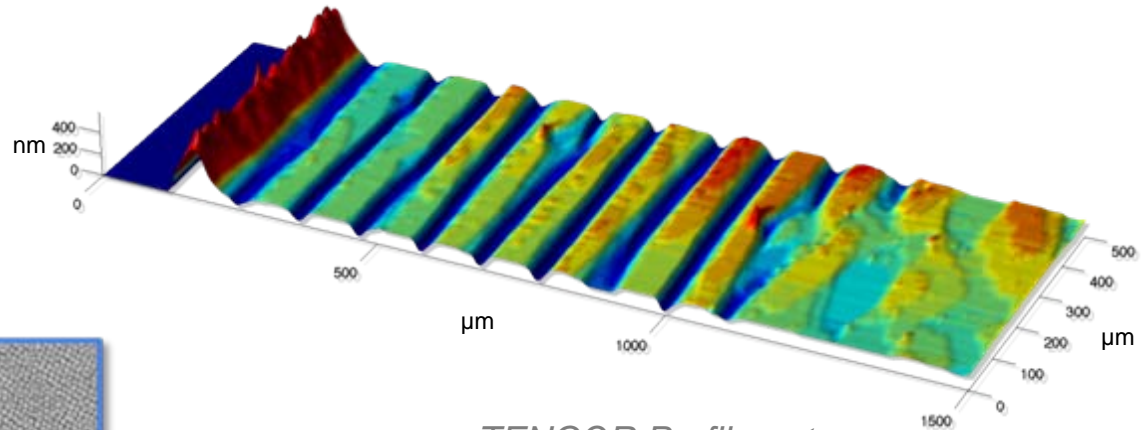
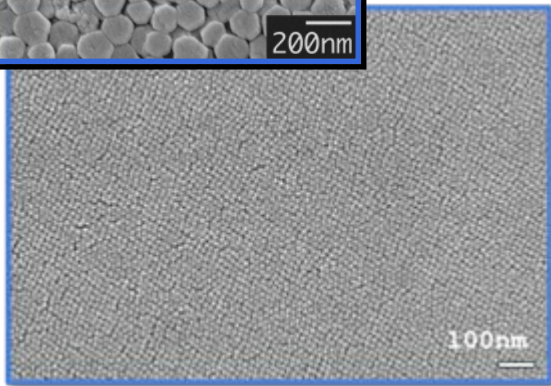
L. E. Scriven (PI), Michael Tsapatsis (PI), J. Alex Lee & Mark A. Snyder
Chemical Engineering & Materials Science, University of Minnesota
NNIN Facility utilized: Characterization Facility

- The method of convective assembly has been adapted to
 - ◆ improve coating uniformity
 - ◆ allow scaled up production

- Particles display order on the interparticle scale
- Coatings display interesting macroscopic morphologies, as captured below



SEM: JEOL 6700



TENCOR Profilometer

- **Publications**
 - ◆ Lee, J. A., Meng, L., Norris, D. J., Scriven, L. E., and Tsapatsis, M. *Langmuir* **22** (2006) 5217–5219
 - ◆ Snyder, M. A., Lee, J. A., Davis, T. M., Scriven, L. E., and Tsapatsis, M. *Langmuir* **23** (2007) 9924–9928