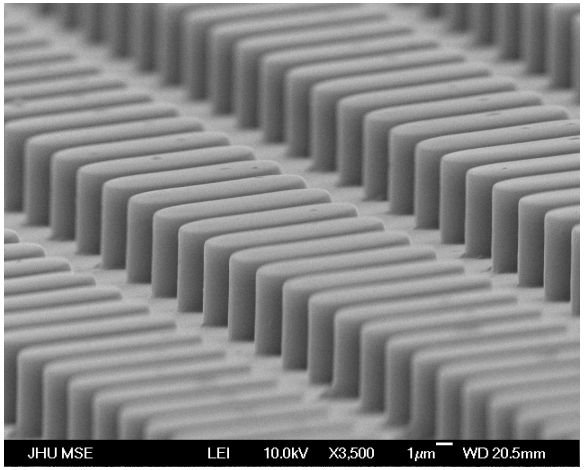
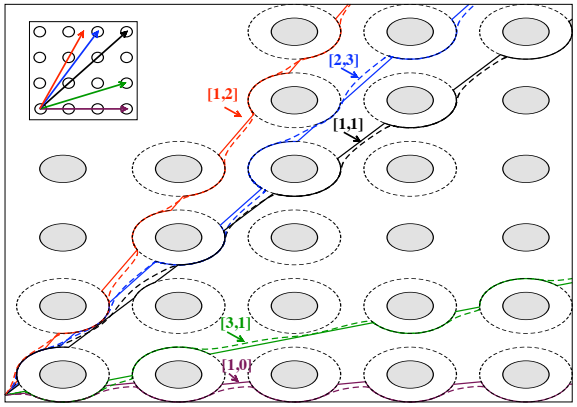
WHITING SCHOOL OF ENGINEERING
JOHNS HOPKINS UNIVERSITY

Transport of colloids in micromodels average motion and dispersion effects

German Drazer
Department of Chemical & Biomolecular Engineering



We study the transport of suspended colloidal particles in micromodels of porous media. In the picture, we can see an ordered array of *obstacles* in which we study the effect of anisotropic structures on the diffusive and convective transport of finite size particles.



We are also interested in the dynamics of transport in the limit of high Peclet numbers (deterministic transport). In the figure we see particle trajectories in ordered media exhibiting directional locking in the deterministic limit.

We also investigate macroscopic transport in periodic systems to understand the differences and similarities with the phenomena observed at the microscale. The picture shows the motion of a sphere through an ordered array of cylinders.