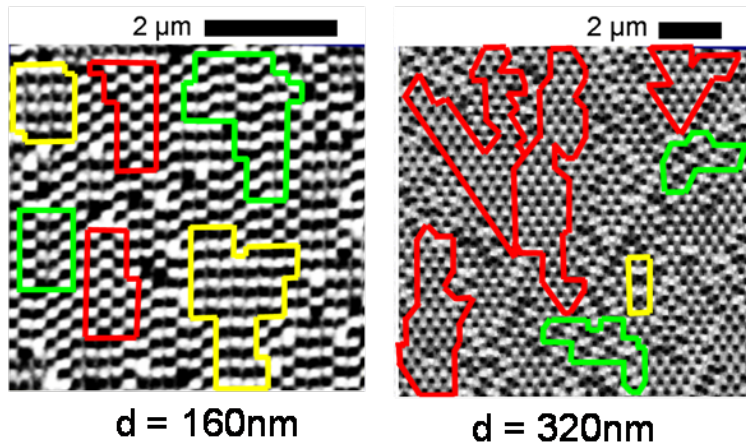


Triangles of Frustrated Nanomagnets

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Large scale magnetic force microscopy images of triangular lattices of single-domain ferromagnetic islands with different lattice spacings. The outlined regions correspond to different local ordering of the island magnetic moments.

Want to understand the nature of frustration in magnetic materials and other systems.

Use nanolithography and physical vapor deposition to make different geometrical lattices of single-domain nanomagnets to study the effects of different topologies.

Most recent efforts are on the simplest frustrated geometry, the triangular lattice, in which the moments order locally despite frustration of the interactions – presumably due to intrinsic anisotropy of the lattice.

See different regimes of ordered moments depending on the tuning of the lattice parameter.

“Tuning magnetic frustration of nanomagnets in triangular-lattice geometry”,
Appl. Phys. Lett. **93**, 252504-1-3 (2008).

Nanostructure magnetic arrays give insight into the fundamental nature of frustration.