Conclusions and Future Work

- The silicate shells are preventing some sintering during thermal annealing.
- Most of the shells appear to embody six to twenty nanoparticles. When annealed, the particles within each shell are sintering with each other.
- X-ray diffraction shows us that the particles are in the fcc phase as prepared. Annealing results in some transformation and grain growth within the shells, but transformation appear incomplete due to lack of super lattice peaks.
- Magnetometry shows a decreased coercivity in the silicated particles after annealing. Past experiments have shown that annealed, non-silicated particles may have a coercivity of approximately 11kOe.
- Future work will focus on synthesizing more individually silicated nanoparticles that form a self-assembled array, can be ordered, and maintains a uniform size distribution.

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