

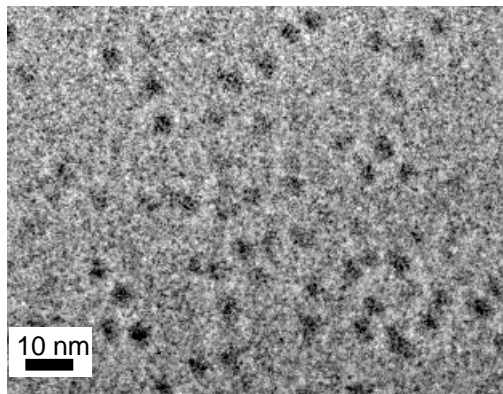
# Nucleation & Crystal Growth in Zeolites

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- What Do We Study?
- Nucleation and crystal growth of zeolites from aqueous sols

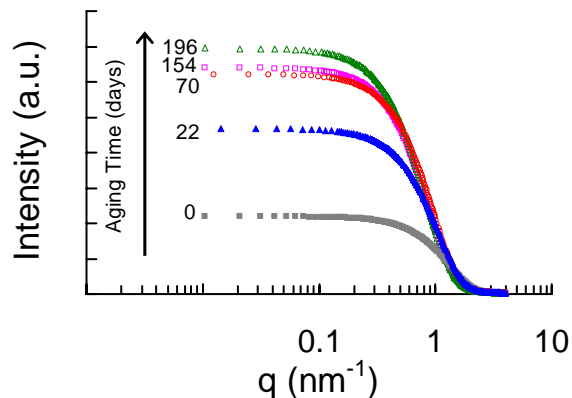
## Key Experimental Techniques Used at the CharFac:

Cryogenic Transmission  
Electron Microscopy (TEM)



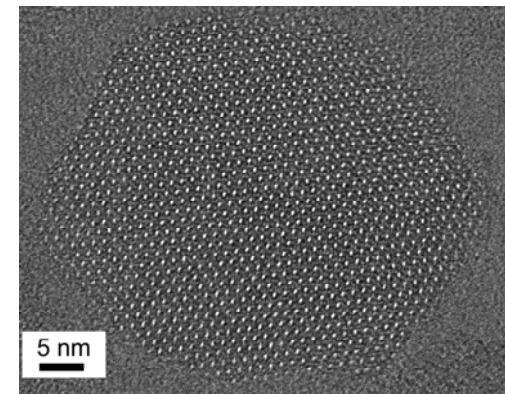
Silica nanoparticles present in precursor zeolite sols as imaged by cryogenic TEM<sup>1</sup>

Small Angle X-ray  
Scattering (SAXS)



The evolution of the silica nanoparticles in precursor zeolite sols leading up to crystal nucleation is monitored by SAXS<sup>1</sup>

High Resolution TEM



HRTEM image showing silicalite-1, an all silica zeolite, viewed along the *b*-axis<sup>2</sup>

1. Davis et al., 2006, *Nat. Mater.* **5**, 400-408
2. Kumar et al., 2007, *J. Phys. Chem. B* (accepted)