Cryo-SEM Studies of Latex/Ceramic Nanoparticle Coating Microstructure Development

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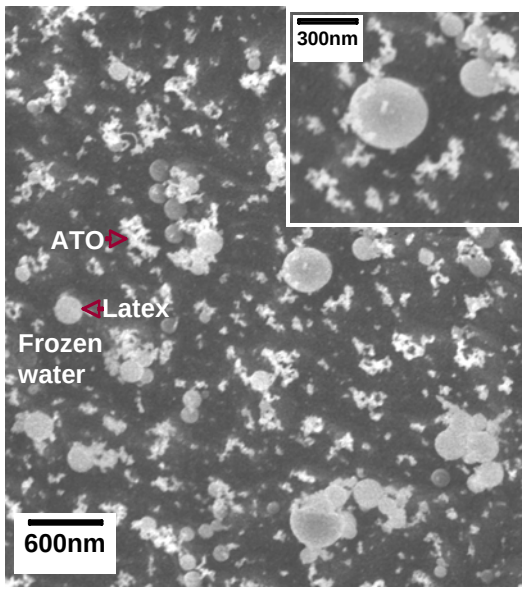
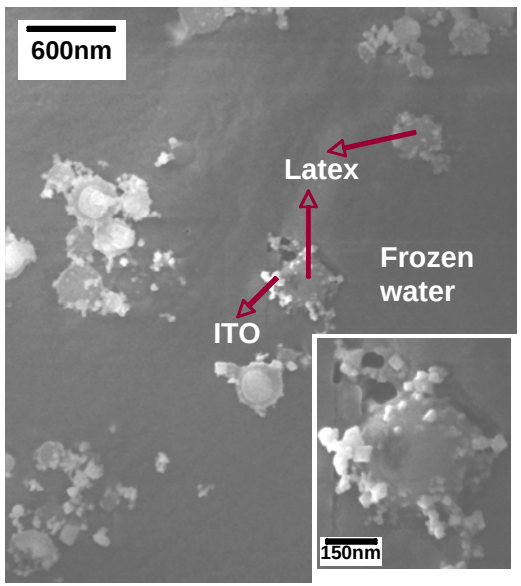
- **Nanoparticle dispersions frozen and imaged by cryo-SEM**
  - Dispersion of antimony doped tin oxide (ATO)/latex, indium tin oxide (ITO)/latex in water are frozen with high pressure liquid nitrogen.
  - Frozen dispersions are fractured, sublimed for a short time, coated with Pt and then imaged in FESEM on a cryostage.



ATO/Latex



ITO/Latex

- **Microstructure of dispersions revealed by cryo SEM**
  - Individual latex particles and small ATO clusters distribute homogeneously in ATO/latex dispersion.
  - Small ITO particles adsorb onto surfaces of large latex particles in ITO/latex dispersion.
  - Cryo-SEM images of coatings show the consolidation, compaction and partial coalescence regimes on the same partial dried coating.

- Publication

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