



Faculty Member

Timken Foundation Center for Precision Manufacturing

Contact Information

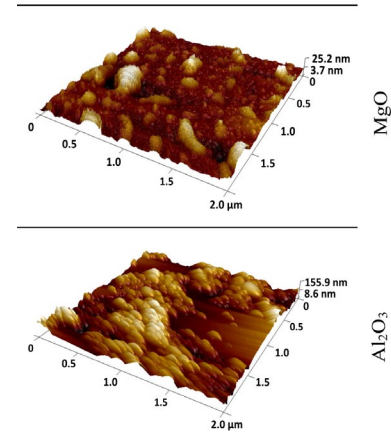


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Nano-Particle Coating for Enhanced Flow

- Mitigating **Fines migration** and associated **clogging** in porous media are very critical in many fields (Oil & Gas recovery, Contaminant transport, Drilling)
- Nanoparticle coating can address this by changing electrical surface forces
- Surface topology and force measurements
- Conducting experiments on surface modified systems in nano- and micro-scales



Research Interests

- Surface Topology and surface force measurement
- Nano-particle surface coating
- THMC Multiphysics Coupled Processes
- AFM and SEM imaging for surface measurements
- Enhanced fluid flow assurance (oil and gas recovery)
- Surface modified flow conduits and networks
- High-Resolution Distributed Sensing (Non-destructive testing)

High-Resolution Distributed Sensing

- Precision Engineering & Manufacturing requires precision testing.
- New non-destructive technology: Distributed Sensing using Fiber Optics
- To Measure: **Strain, Temperature, Vibrations, Acoustics and Acceleration**
- Continuous and high-resolution measurements by fibers over the entire geometry of the manufactured parts or machines

