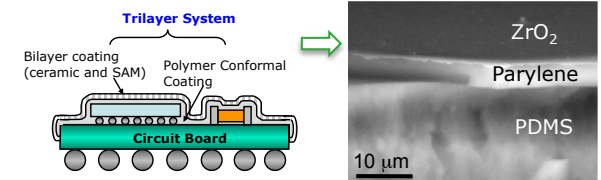
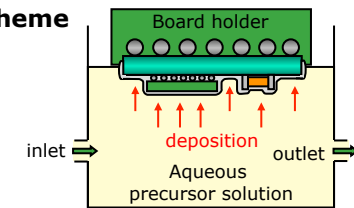


Processing & Microstructure Innovation

• Low-Temperature Processing for Ceramic Films and Coatings ($\leq 90^\circ\text{C}$)

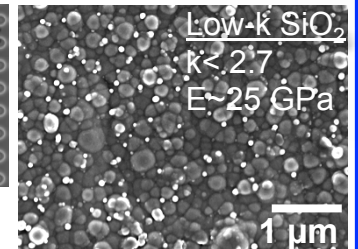
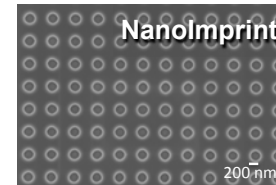
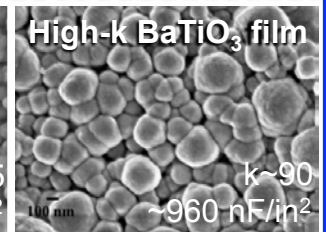
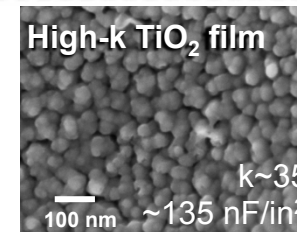
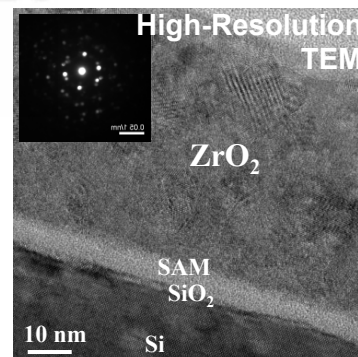
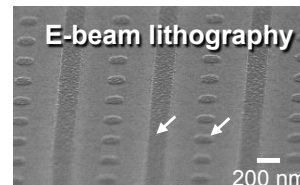
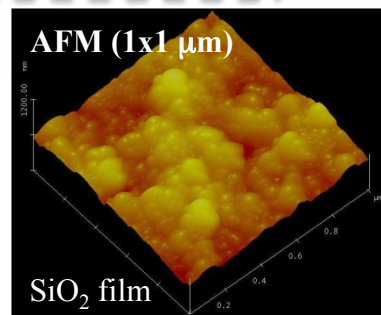
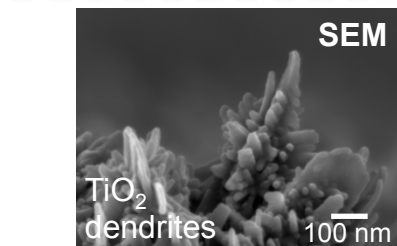
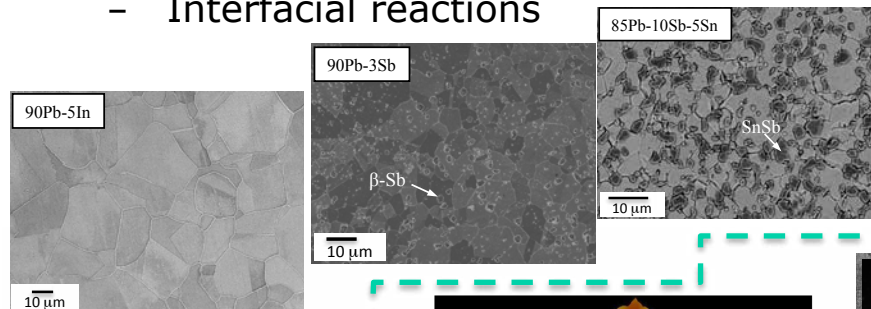
- Protective / Barrier / Hermetic coatings: ZrO_2 , SiO_2 , SiO_2 -Polymer Multilayer
- High-k dielectric films: TiO_2 , BaTiO_3
- Low-k dielectric films: F- SiO_2
- Embedded capacitors: TiO_2 , BaTiO_3
- Transparent conductive oxides (TCO): F- SnO_2 , Al-ZnO
- Thin film photovoltaics (PV): TiO_2 , ZnO

Coating scheme example



• Microstructure Design of Ceramics and Metals

- Oxides: nanoparticles, nanorods/wires, nanoblades
- Solder alloy design and developments
- Interfacial reactions



ZnO films (aligned rods)

