



## Objective

- Explore and demonstrate low surface-field high-voltage (up to 10kV) 4H-SiC DMOS power bipolar transistors with trench epitaxial refill technology

## Technical Approach

- Develop electrochemical polishing process for possible defect minimization
- Evaluate PiN and DMOS process technologies using trench epitaxial refill
- Optimize MOS properties using novel dielectric deposition and annealing processes

## Major Impact of Technology

- Development of polishing process and growth of thick epitaxial films with reduced defect densities
- Trench refilling using epitaxial regrowth to realize novel device structures
- Low surface-field DMOS power unipolar/bipolar transistors for improved ruggedness and reliability