

Date: September 16, 2019

Graduate Research Assistantship: Advanced SiC MOSFETs

Up to 3 graduate research assistantships are available in the area of advanced silicon carbide (SiC) power devices. SiC is a wide bandgap semiconductor with a high critical field, making it an exciting material for power electronic devices. SiC MOSFETs are now commercially available, but do not yet achieve their full potential. We are approaching this problem from several directions, including a radical new device geometry inspired by modern FinFETs, as well as a submicron, fully self-aligned trench UMOSFET, as well as atomic layer deposited gate dielectrics.

Research activities will include semiconductor device process development (including sub-micron electron beam lithography and deep reactive ion etch), complete device fabrication, electrical characterization and modeling, and 3D device simulations.

Requirements:

Must be enrolled in the ECE graduate program at Purdue, with an interest in microelectronics. Preference will be given to candidates demonstrating a familiarity with basic semiconductor physics, or those who have previous experience in device fabrication or characterization. Enrollment in or completion of any of the following courses or equivalents is desirable:

- ECE 305 (Semiconductor Devices)
- ECE 407 (Semiconductor Measurements Laboratory)
- ECE 557 (Integrated Circuit/MEMS Fabrication Laboratory)
- ECE 606 (Solid State Devices I)

For more information or to apply, send resume and contact information to:

Dallas Morisette
Research Assistant Professor
morisett@purdue.edu