Improving Silicon Carbide Transistor Performance

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**GOAL**
To improve electron mobility at the SiO$_2$/SiC interfaces in high power, high temperature SiC-based metal–oxide–semiconductor field-effect transistor (MOSFET) devices by decreasing the number of interfacial traps.

**KEY ACCOMPLISHMENTS**
Reduced the carbon and oxygen diffusion between the SiC substrate and the SiO$_2$ layer by annealing the substrate in heated nitric oxide.
Improved the electron mobility at the SiO$_2$/SiC interfaces.

**KEY NANOFAb PROCESS**
Focused ion beam preparation of thin samples from MOSFETs processed under varying conditions.

**REFERENCE**