

Silicon-Germanium Devices and Circuits



John D. Cressler's Research Team

Program Focus:

Fundamental device physics, fabrication issues, dc/ac characterization, cryogenic operation, noise, analog + digital + RF/microwave/mm-wave circuit design, profile optimization for specific circuit applications, device-circuit interactions, linearity, material issues, radiation effects, device simulation, compact modeling

Research Expertise:

- SiGe HBT and Strained Si CMOS device physics
- dc and broadband device/circuit characterization
- 2-D and 3-D device-level simulation
- low-frequency and broadband noise, and linearity
- compact modeling of advanced devices
- extreme temperature operation (4K to 500C)
- radiation effects (total dose + single event effects)
- analog, digital, and mixed-signal circuit design

Research Facilities:

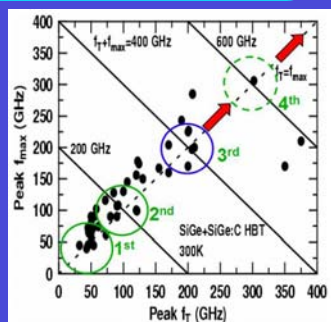
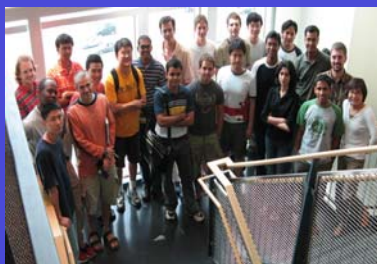
- exhaustive device/circuit measurement capabilities
- dc to 100 GHz, fA to A, uV to kV, 4K to 500C
- all major simulation and circuit design packages
- IC fabrication and packaging

Research Team:

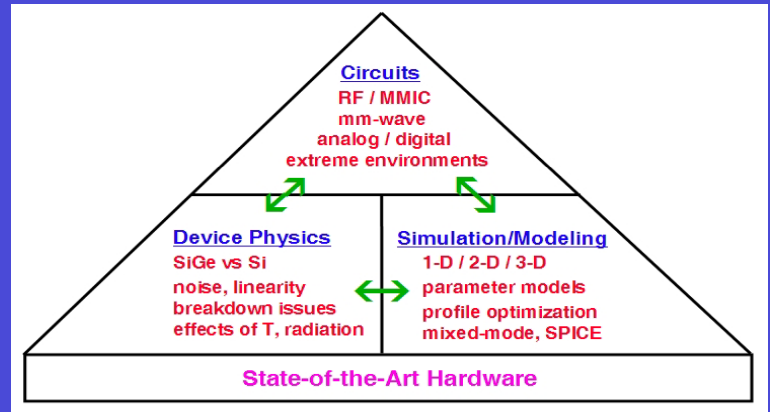
- 11 PhD, 10 MS, 1 UG, 1 research engineers
- Affiliations:
Georgia Tech Analog Consortium (GTAC)

Contact Information:

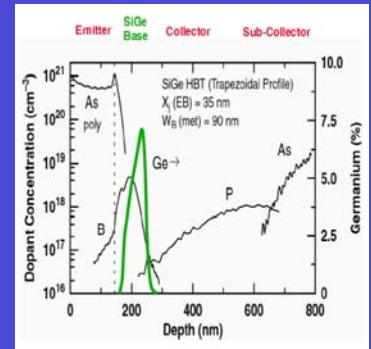
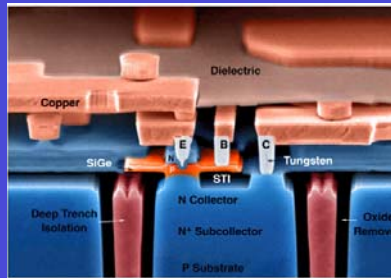
Dr. John D. Cressler
cressler@ece.gatech.edu / (404) 894-5161
<http://users.ece.gatech.edu/~cressler/>



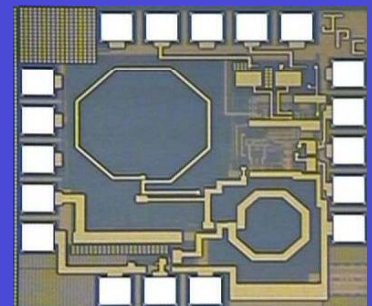
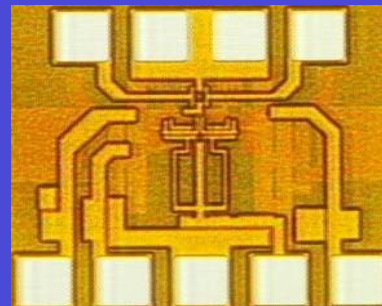
Research Program Overview



SiGe HBT Technology



SiGe Circuit Design



Radiation Effects

