



Research Spotlight Forum SAND2019-9168PE

8.6.19 Cybersecurity

Atomic Precision Advanced Manufacturing

PRESENTED BY:

Shashank Misra, 5229, smisra@sandia.gov

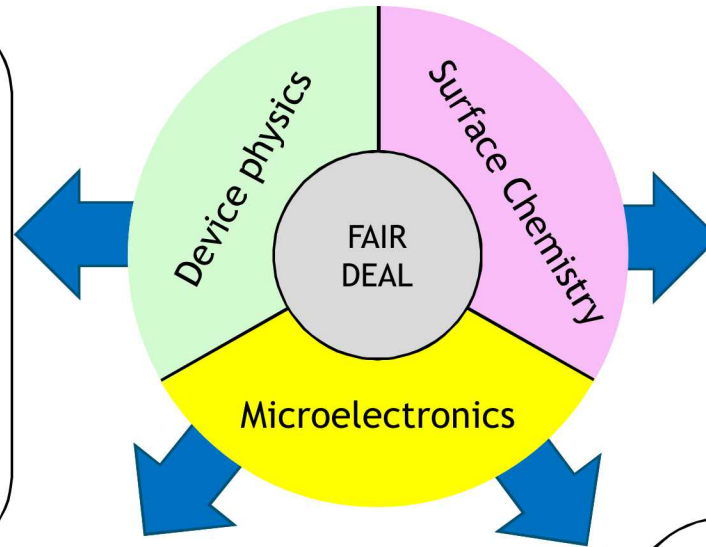
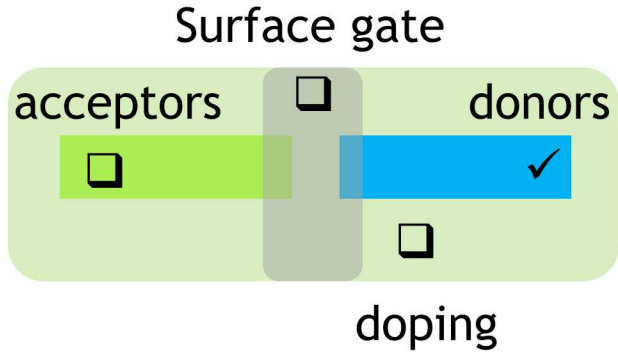
Sandia National Laboratories is a multi-mission laboratory managed and operated by National Technology and Engineering Solutions of Sandia LLC, a wholly owned subsidiary of Honeywell International Inc. for the U.S. Department of Energy's National Nuclear Security Administration under contract DE-NA0003525.

SAND2019-xxxx

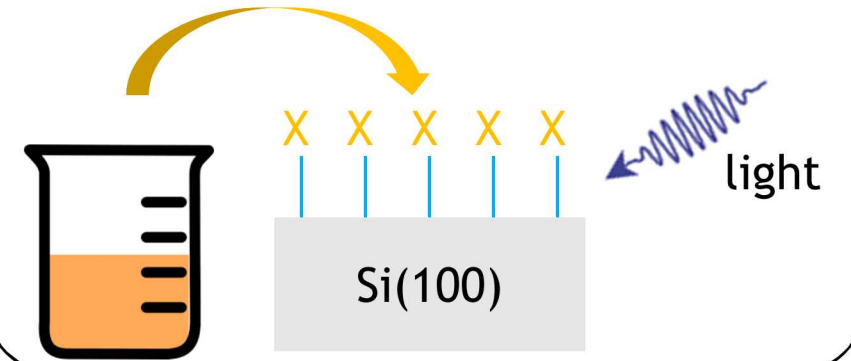


2 Digital electronics at the atomic limit (DEAL)

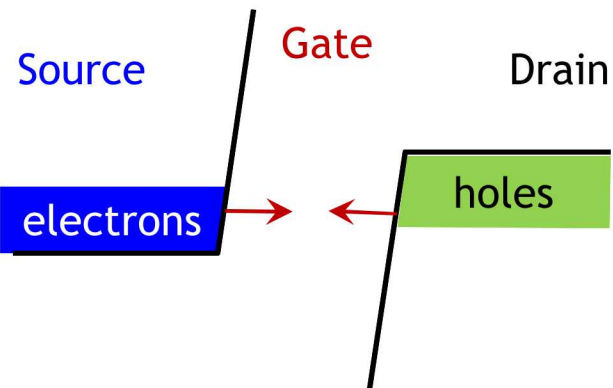
Thrust 1: APAM-enabled Devices



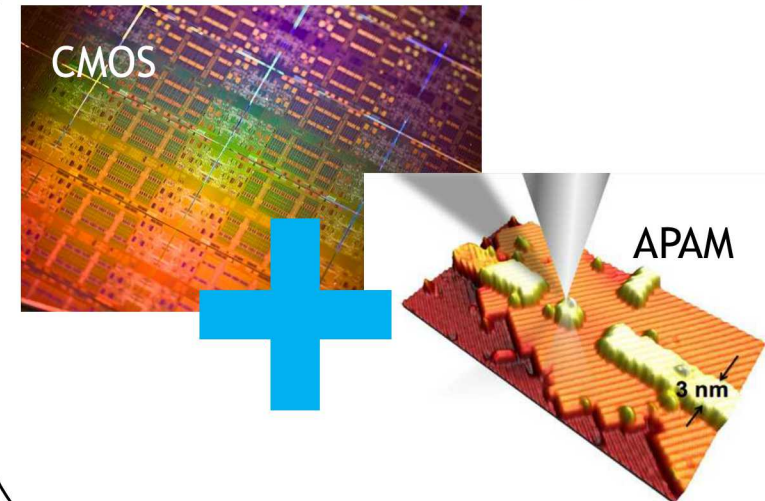
Thrust 4: Application Platform



Thrust 2: APAM Modeling



Thrust 3: CMOS Integration



Program Leadership
PI: Shashank Misra
PM: Robert Koudelka
Deputy PM: Rick Muller

#1 APAM-enabled devices
Lead: Shashank Misra

#2 APAM modeling
Lead: Denis Mamaluy

Support Team
Lead: Jennifer Woodrome
Financial: Laurel Taylor
Logistics: Lori Mann
Web: Dorean Chaleunphonh

#3 Integration
Lead: Dan Ward

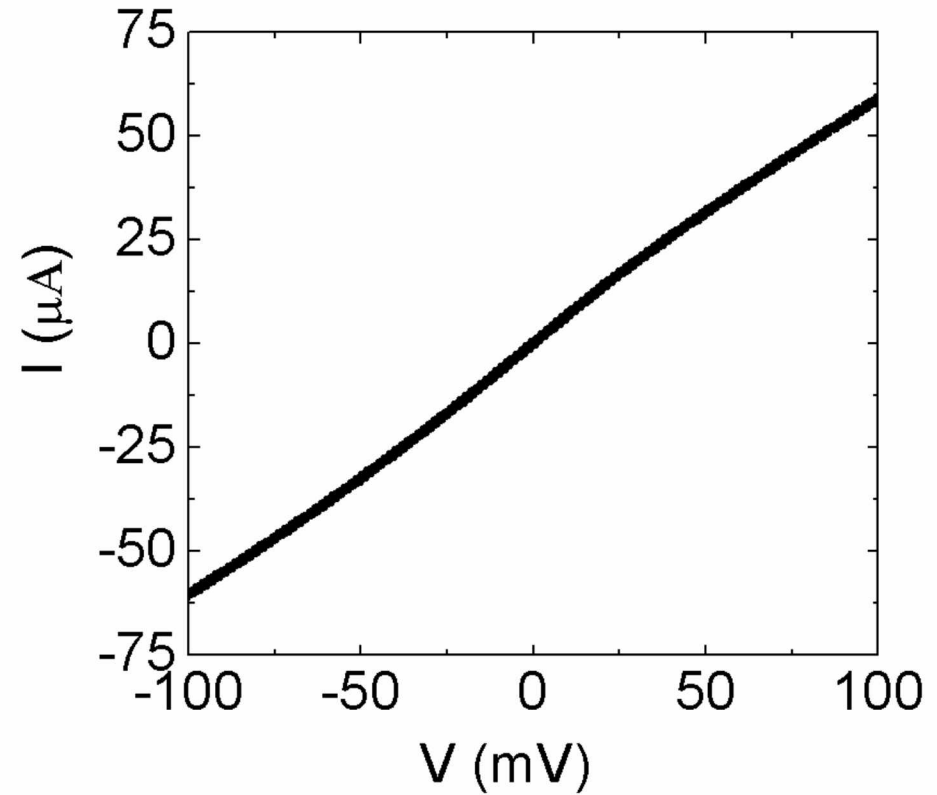
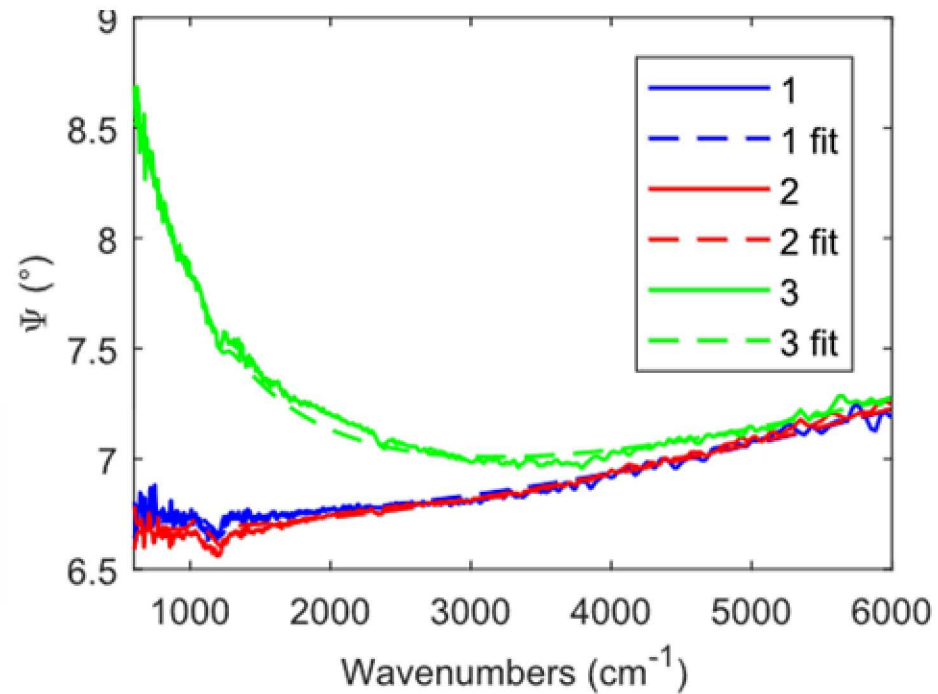
#4 Application platform
Lead: George Wang

Measurement: Lisa Tracy, Tzu-Ming Lu, David Scrymgeour, Ping Lu, Albert Grine

Microfabrication: Dan Ward, DeAnna Campbell, Mark Gunter, Philip Gamache, Steve Carr, Troy England, Reza Arghavani, Sean Smith

Modeling: Denis Mamaluy, Suzey Gao, Leon Maurer, Andrew Baczewski, Peter Schultz, Quinn Campbell, Juan Granado

Surface Science: Shashank Misra, Ezra Bussmann, George Wang, Aaron Katzenmeyer, Evan Anderson, Scott Schmucker, Esther Frederick, Fabian Pena, Dave Wheeler

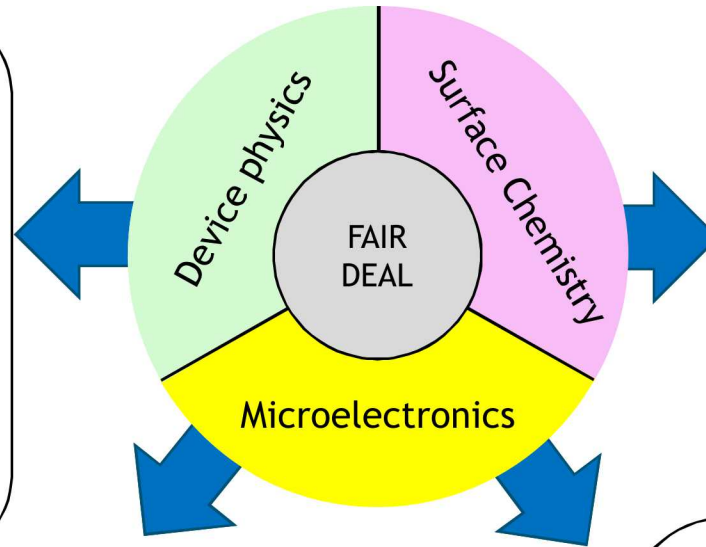
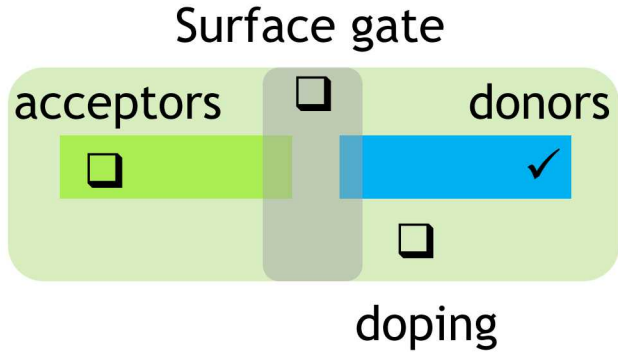


APAM creates devices with unique signatures

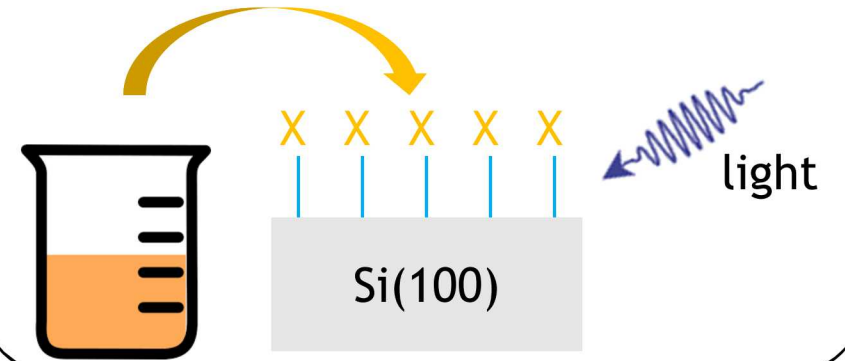
APAM enables integration of dopants into CMOS late in fabrication flow

Research needs

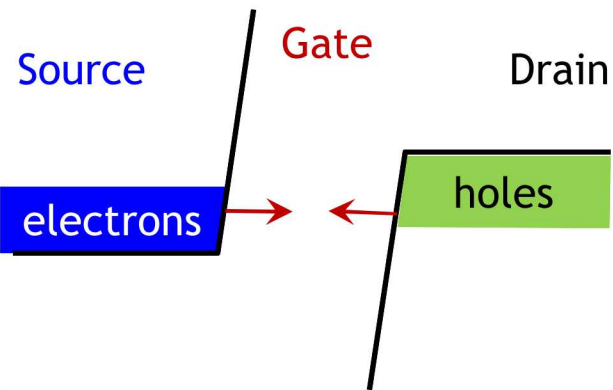
Thrust 1: APAM-enabled Devices



Thrust 4: Application Platform



Thrust 2: APAM Modeling



Thrust 3: CMOS Integration

