Eric Pop – Stanford

POETS

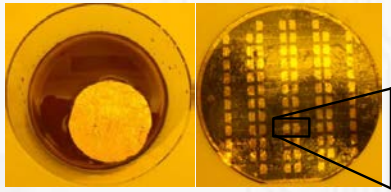
AN NSF SPONSORED CENTER

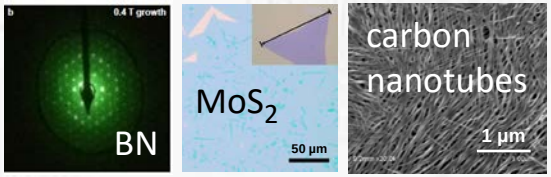
- High thermal conductivity nanomaterials: carbon nanotubes, graphene, BN
- Heterogeneous integration of nanomaterials
- Electro-thermal devices
- Modeling and Experiments

http://poplab.stanford.edu

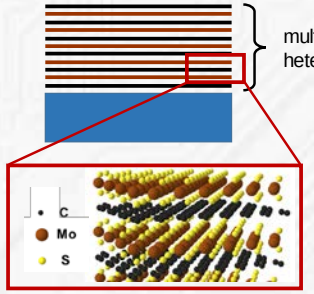
Nanomaterial Growth and Assembly

Large-scale growth of graphene on Cu



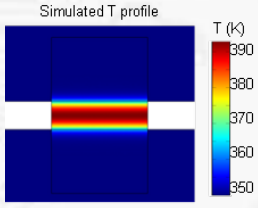


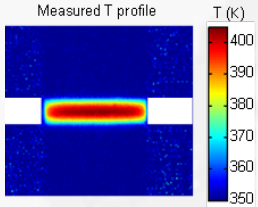
K ~ 500-2000 W/m/K



Heterogeneous Integration

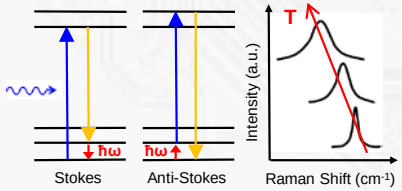
Thermal & Electrical Metrology





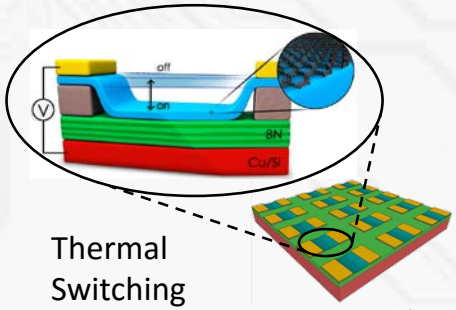
ASTM D5470

Raman thermometry

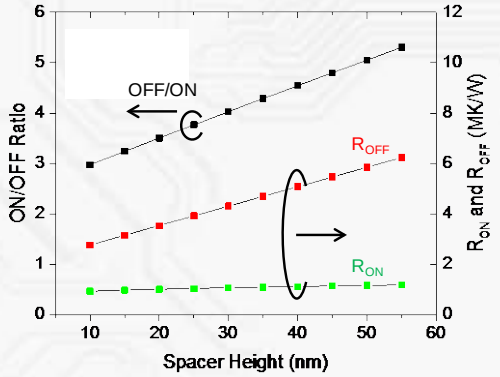


80 K to 800 K

Modeling & Device Design



Thermal Switching



Electrical & Thermal Co-Optimization