

Joshua Robinson (Penn State)

Cindy Chen (Penn State, now at Lam Research)

Zheng Sun (Purdue)

Riccardo Torsi (Penn State, now at NIST)

Intel

- Nanosheets and nanoribbons involving atomically thin TMDs present a potential solution to the issues FinFets are facing. However, TMDs are prone to oxidation.
- Robinson and team have developed a new water-free manufacturing method using amorphous boron nitride (a-BN) to protect TMDs from oxidation.
- They developed a two-step ALD method which involves depositing a thin low-temperature a-BN "seed layer."
- This method resulted in a 30% to 100% improvement in transistor performance compared to devices not utilizing a-BN.

Prof. Robinson's Projects  
nCORE NEWLIMITS Center

