

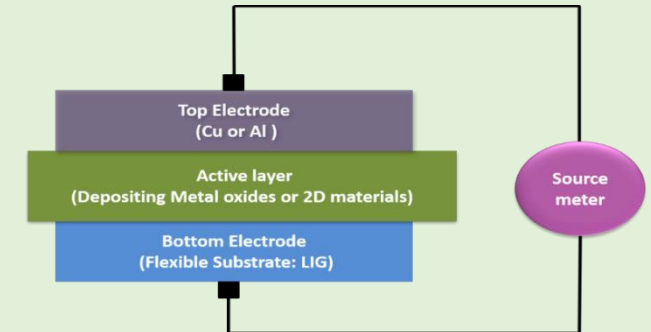
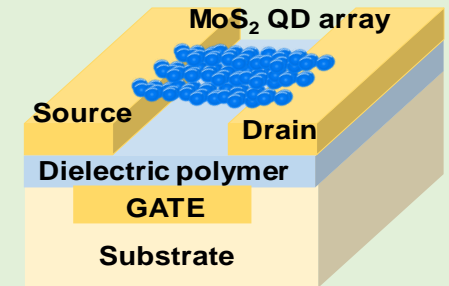
Quantum Dot Devices

1. Quantum Transport Study in arrayed QDs
2. Flexible Memristors for future sensing applications
3. Influence and control optical response of a novel hybrid Cavity-QED system

Our group currently is working on three areas: a) on the fabrication of controlled array of QDs to study the transport properties of the optimized MoS₂ QDs and their applications in electronic devices like FETs and rectifier diodes b) Fabricating flexible memristors for sensing applications c) To study the quantum-optical properties of QD based optomechanical photonic crystal microcavity.

Key research areas:

- Fabrication of transistor using MoS₂ QDs as semiconductor and evaluation of temperature dependence of current-voltage characteristics.
- Fabrication, characterization and optimization of memristors devices for neuromorphic and bio-sensing applications.
- Theoretical study of hybrid optomechanical systems and its optical responses.



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