Interfacial Oxide Heterostructures: Converting and Manipulating Energy Quanta by Interfacing

- Designing interfacial oxides atom-by-atom by pulsed laser deposition
- Discovering artificial materials by controlling atomic-scale interfaces
- Understanding local behaviors for improving global functionalities
- Manipulating energy flow across interfaces

**Interface Electronic Reconstruction**

Electronic reconstruction for generating high mobility electrons at oxide interfaces

**Interfacial Polar Oxides for Next Generation PVs**

Focus areas:
- Solar light absorption
- Band gap engineering
- Carrier transport
- Charge separation

**Polar Heterointerfaces**

Atomistic rearrangements by electrostatic boundary conditions at the interface: Charge screening

**Interface Magnetism**

Spin coupled interfaces for exploring new magnetic oxides

**Thermoelectric Oxides**

Controlling thermal energy flow (i.e., filtering phonons) by zone folded superlattice crystals

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