

# Andrey A. Voevodin

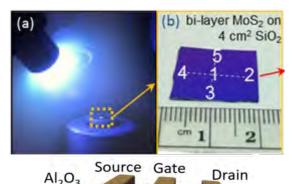
Professor of Materials Science and Engineering Department Associate Dean of Research, College of Engineering



Research: Plasma assisted growth of thin films, low temperature synthesis of electronic materials, tribology in extreme environments, additive manufacturing diagnostics, in-situ spectroscopy methods

#### Thin Films & Electronics

- Sputtering and PLD processing
- Laser writing/annealing
- Semiconductors: MoS<sub>2</sub>, WS<sub>2</sub>
- Dielectrics BN, BON, Al<sub>2</sub>O<sub>3</sub>



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PDMS

# DLC, CF, c.o.f.=0.10-0.15 Air or space 500-800 °C

### **Coatings & Tribology**

- Environment adaptive ambient and space
- High temperature sliding contacts
- Wear protective and friction reducing coatings
- In-situ Raman spectroscopy of tribology contacts

# Dry, Vacuum Ambient, Humid Environment: **Environment:** Thin Solid Films, 370 (2000) 223-231 MoS2, WS2 c.o.f.=0.01-0.03 adaptive transfer film tribo – "skin" ("tribo-skin") on contact wear debris gradient interface

#### In-situ Spectroscopy & AM

- Additive manufacturing monitoring
- Laser induced break down spectroscopy
- In-situ composition analysis
- Gradient and complex composition alloys

