



# Professor Diana Berman

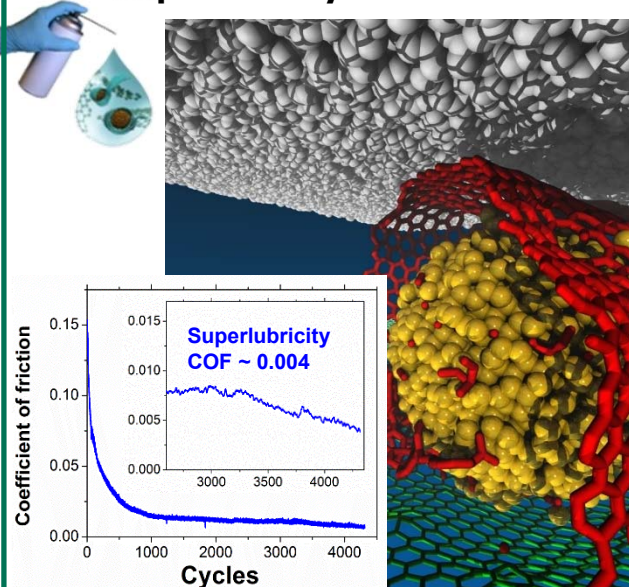
Department of Materials Science and Engineering

Assistant Professor

Tribology: Friction, Adhesion, and Wear; Nanostructured and Nanoporous Materials, 2D Materials for Tribological Applications, Antireflective Coatings

Research Group: 2 PhD students, Collaboration with Government Laboratories

## Nanocarbon-based Superlubricity Solution



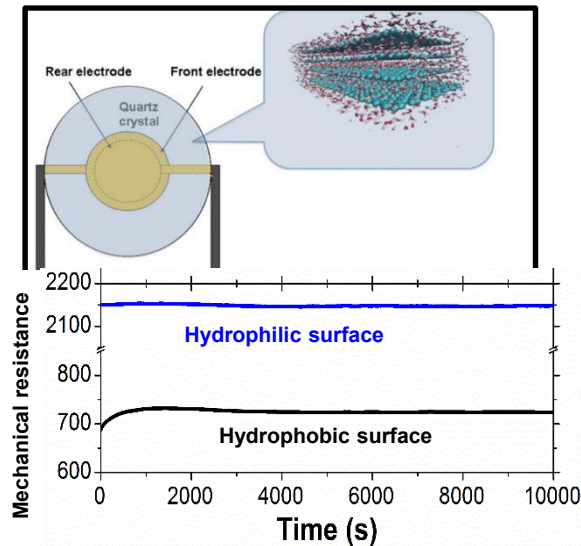
### Properties:

- Simple spray-coating deposition
- Eliminates friction and wear
- Reduces hazardous waste

### Applications:

- MEMS Devices
- Hard Disc Drives
- Wind Turbines
- Electrical Connectors

## Interactions at solid/liquid interface



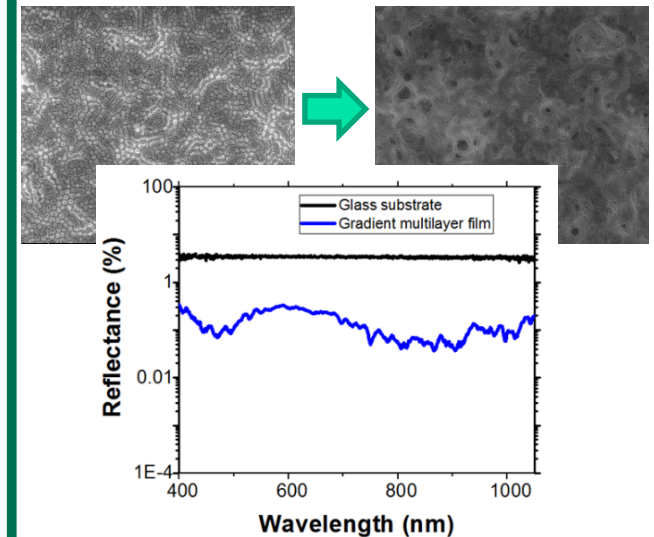
### Properties:

- Hydrophobicity/hydrophilicity
- Activation energy
- Friction and energy dissipation
- Mitigation of liquids in materials

### Applications:

- Corrosion Sensors
- Oil Lubricants
- DNA Sequencing
- Water filtration

## Nanoporous Antireflective Coatings



### Properties:

- Antifogging effect
- High wear resistance
- Stability at high temperature, UV light, and radiation

### Applications:

- Corrective Lenses
- Displays for Electronic Devices
- Solar Cells
- Telescopes