

# Sunday Afternoon, September 21, 2025

## Nanoscale Science and Technology Plenary Session

Room 206 A W - Session NSP-SuA

### Nanoscale Science and Technology Plenary Session (ALL-INVITED SESSION)

Moderator: Nikolai Klimov, NIST

3:00pm **NSP-SuA-1 Wide Bandgap III-Nitride Nanostructures: Epitaxy, Properties, and Emerging Device Applications**, *Zetian Mi*, University of Michigan, Ann Arbor **INVITED**

In this talk, I will present recent advances on the molecular beam epitaxy of (ultra)wide bandgap III-nitride nanostructures and their unique optical, electronic, catalytic, piezoelectric, and ferroelectric properties. I will further discuss their emerging applications in ultraviolet optoelectronics, micro/nanoscale LEDs, high power, high frequency and high temperature electronics, and artificial photosynthesis.

3:30pm **NSP-SuA-3 NSTD Graduate Award Finalists Presentations**,

4:00pm **NSP-SuA-5 NSTD Early Career Award Finalists Presentations**,

4:45pm **NSP-SuA-8 The Gas Field Ionization Source - An Overview of the Physics and the Future of this Technology**, *John Notte*, Carl Zeiss **INVITED**

Beyond all reasonable expectations, the "pointy end of a needle" has spawned a remarkable collection of technologies, including the world's highest brightness charged particle beam, the gas field ionization source (GFIS). This talk endeavors to provide a complete overview of the physics that enables and limits the performance of the GFIS technology. Additionally, this talk frames a timeline of the GFIS technology from its first realization, to commercialization, and several possible futures.

5:15pm **NSP-SuA-10 Nanoscale Science and Technology Plenary Reception**,

## Author Index

**Bold page numbers indicate presenter**

— M —

Mi, Zetian: NSP-SuA-1, **1**

— N —

Notte, John: NSP-SuA-8, **1**