

IOWA

Toor Laboratory



The lab focuses on ultraviolet (UV) to terahertz (THz) photonics research. The synergy among the projects comes from a focus on designing photonic devices that detect, generate, or manipulate light. Example applications include environmental, such as developing high efficiency solar cells for low-cost renewable energy generation. Other research thrusts benefit biotechnology and medical sciences, such as compact high power lasers that could be used to obliterate tumors selectively, and nanowire probes to detect viruses and cancer biomarkers.

Who We Work With

- Environmental Health Sciences Research Center
- Iowa Energy Center
- UI Ventures
- U.S. Air Force
- U.S. Department of Energy
- U.S. Navy
- U.S. Army
- National Science Foundation
- National Institutes of Health

Lab Director: Fatima Toor



- Associate Professor of Electrical and Computer Engineering
- Lowell G. Battershell Chair in Laser Engineering
- PhD: Electrical Engineering, Princeton University
- MA: Electrical Engineering, Princeton University

IOWA

Technology
Institute

University of Iowa Technology Institute
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RESEARCH FOCUS & HIGHLIGHTS

The Toor Lab engineers the properties of electrons, photons, and phonons in micro- and nano-structured materials, such as semiconductors, metals, dielectrics, and polymers, to develop novel photonic devices and systems. The lab uses computer-based analytical modeling for optimized design, chemical processing for micro/nanofabrication, and various optical, electrical, and thermal testing techniques for performance characterization.

Select Research Includes:

- Photovoltaics and thermophotovoltaics
- Nanotextured biosensors for health and environment
- III-V nanowire optoelectronics
- Mid-infrared surface-emitting lasers and LEDs
- Metamaterials and metasurfaces
- Laser medicine

LEARN MORE



SCHEDULE A VISIT

by contacting Fatima Toor at fatima-toor@uiowa.edu or 319-335-6071

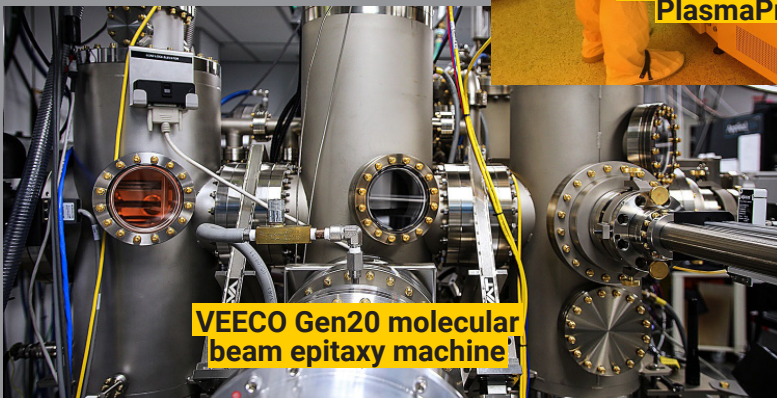


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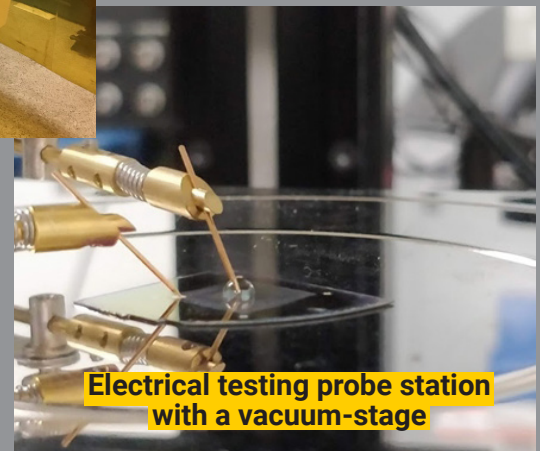
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Oxford Instruments PIE-ICP
PlasmaPro 100 Cobra



VEECO Gen20 molecular
beam epitaxy machine



Electrical testing probe station
with a vacuum-stage