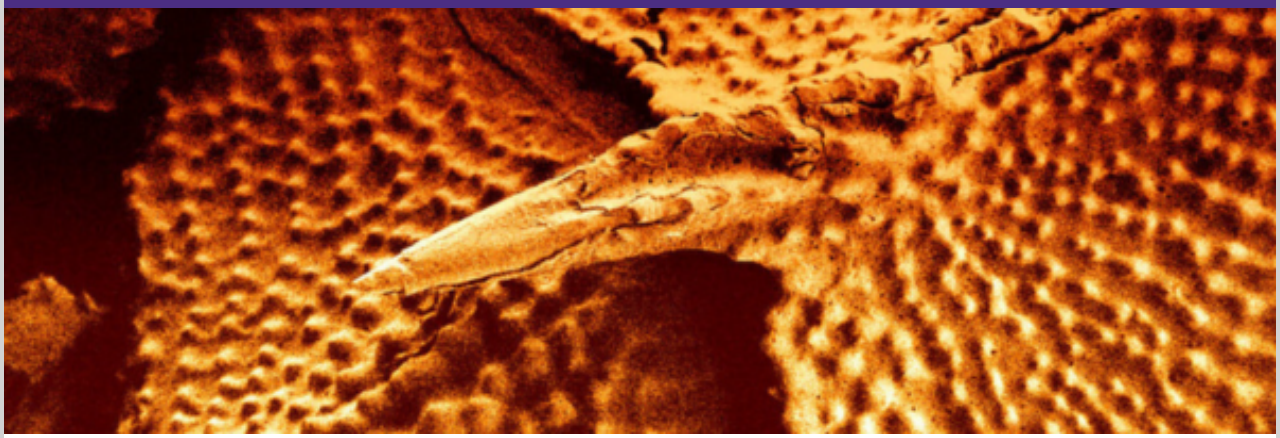
UNIVERSITY of WASHINGTON

INSTITUTE FOR NANO-ENGINEERED SYSTEMS

WINTER 2025

News



Ankush Nandi wins honorable mention in NNCI “Plenty of Beauty at the Bottom,” 2024 image contest

Ankush Nandi, a mechanical engineering Ph.D. student in the Vashisth Research Lab, was recognized for his photo, “Shai-Hulud and the Ripples in Sand,” which he took with an Apreo1 SEM by ThermoFisher Scientific.

WNF director in group to target billions in CHIPS and Science Act funding for Washington state

The state-wide group of leaders from universities, research institutions, technology companies and the government aim to strengthen the state's semiconductor industry.

WNF student lands dream internship at NVIDIA

Prithvi Krishnaswamy's work in the Washington Nanofabrication Facility as a lab assistant helped him land a summer internship at NVIDIA.

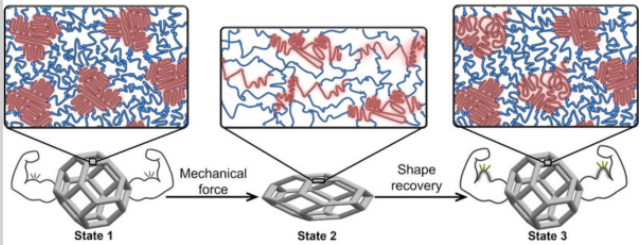
Research Highlights

Serena Eley — studying superconductivity, magnetism, and disorder in quantum materials

UW ECE professor and NanoES member Serena Eley examines superconductors and magnets, searching for ways to fine-tune the atomic disorder landscape in them and leverage their unique properties for quantum technology development.

New lens system for endoscopes could allow physicians to see inside the body like never before

A team of researchers led by NanoES member Arka Majumdar designed a new kind of lens system for the tip of an endoscope, which could enable physicians to view and treat areas deep inside the body.

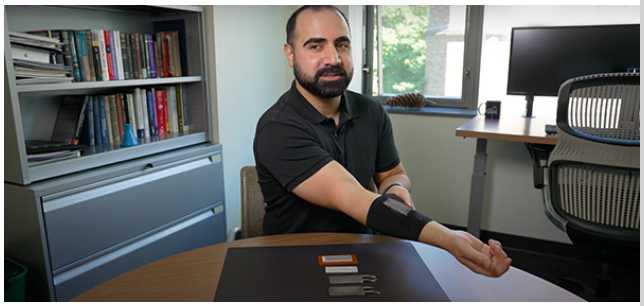


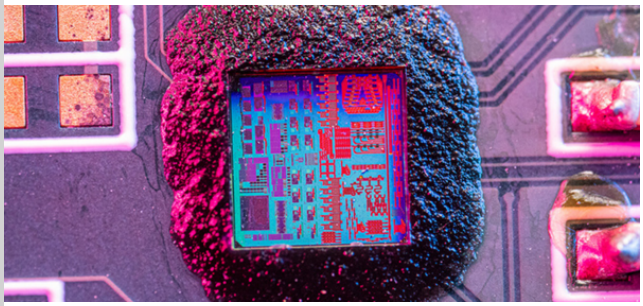
Revolutionizing sustainable materials: strain learning metamaterials inspired by nature

UW researchers have developed a new “strain learning” metamaterial that unexpectedly became stronger and stiffer after testing, instead of degrading over time.

UW researchers develop wearable device that lights up an LED using the warmth of your skin

Mohammad Malakooti's team developed a flexible, durable electronic that can harvest energy from body heat and turn it into electricity that can be used to power small electronics.





A new, 3D-imaging system for early detection of lung cancer

The imaging provides unprecedented access to small bronchial tubes inside the lungs and gathers high-resolution, 3D images that convey functional and structural information about tumors inside the lungs and whether they are benign or malignant.

Apply!

Accepting applications for 2025-26 NNI seed grants

To support the use of nanotechnology tools to develop innovative, new technologies, the Northwest Nanotechnology Infrastructure (NNI) is offering grants for work to be conducted in our fabrication or characterization facilities. These grants are designed to help users

build and characterize prototypes, obtain preliminary results and conduct proof of concept studies.

Applications for 2025 are due April 1. Winners will be announced at the May 8 NanoES Symposium.

Publications

Democratizing Access to Microfluidics: Rapid Prototyping of Open Microchannels with Low-Cost LCD 3D Printers
ACS Publications

Experimental Investigation of Active Flow Control of a Clark Y Airfoil Using Plasma Actuators
Aerospace Research Center

Expanding the capillarics toolbox: 3D-printed microfluidic phaseguides and self-coalescence modules
BioRxiv.org

Rapid enzymatic assay for antiretroviral drug monitoring using CRISPR-Cas12a enabled readout
BioRxiv.org

Autonomous Phase Mapping of Gold Nanoparticles Synthesis with Differentiable Models of Spectral Shape
ChemRxiv.org

Fabrication of Low-Cost, High-Resolution Open Capillary Microfluidics towards Self-Sustaining, Long-Term Hydration of Engineered Living Materials
ChemRxiv.org

Principles for demonstrating condensed phase optical refrigeration
Nature Review Physics

Probing Rotational Decoherence with a Trapped-Ion Planar Rotor
Physical Review Journal

Biomimetic mineralization of positively charged silica nanoparticles templated by thermoresponsive protein micelles: applications to electrostatic assembly of hierarchical and composite superstructures
Royal Society of Chemistry

Selective dissolution and re-precipitation by pH cycling enables recovery of manganese from surface nodules
Royal Society of Chemistry

Reverse transcriptase ACTivity (REACT) assay for point-of-care measurement of established and emerging antiretrovirals for HIV treatment and prevention
Springer Nature

Nano Engineering & Sciences Building, 3946 W Stevens Way NE, Seattle, WA 98195