

**24 / 7 Access! Hands-on training!
Technical Assistance!**

By the Numbers

Publications

Over **280+** peer-reviewed publications supported annually



Users

887+ Annual Users



Capabilities

60+ Instruments & Tools



Space

12,000+ sq. ft. Research Space



Team

20+ Technical & Administrative Staff



Mission

Northwestern University's Atomic and Nanoscale Characterization Experimental (NUANCE) Center was established by Professor Vinayak Dravid in 2001 to integrate complementary analysis, fabrication, and characterization capabilities for soft, hard, and hybrid materials, structures, and devices.



Professor Vinayak P. Dravid
Director, NUAANCE & SHyNE

Diversity by Department

Biomedical
Chemistry
Education
Electronics
Geosciences
Life Sciences
Materials
MEMS/Mechanical Engineering
Physics

Outreach & Education

Activities

-  Academic Outreach
-  Workshops-Lectures
-  Corporate Outreach
-  K-12 & Community Outreach



Facilities

EPIC

Electron Probe Instrumentation Center

- TEM, SEM, FIB
- EDS, EELS, EBSD
- Sample Prep

BioCryo

BioCryo Facility

- Bio, soft & hybrid
- TEM, SEM, STEM
- EDS, EELS

Keck-II

Keck Inter-Disciplinary Surface Science

- ToF-SIMS
- FTIR
- XPS

SPID

Scanned Probe Imaging & Development

- AFM, SPM
- NanoIndentation
- Raman microscopy



THE NEXT FIVE YEARS

NUANCE 2030

From World-Class Instruments to a Platform for
Discovery, Learning, and Translation

HEAR → SEE → DO
→ UNDERSTAND

*We remember what we see.
We understand what we do.*

MEASURE

60+ instruments,
atoms to organisms

TRUST

Provenance from
birth to burial

LEARN

People and models,
on the same data

DISCOVER

Faster cycles on
harder problems

TRANSLATE

Industry, startups,
and society

THREE STRATEGIC PILLARS

PILLAR 01

INTELLIGENT SCIENTIFIC INFRASTRUCTURE

*Trustworthy AI begins with
trustworthy measurement*

Lead in both AI models and in
the trusted experimental data
those models depend on.

PILLAR 02

IMMERSIVE LEARNING & WORKFORCE

The facility itself is a classroom

Extraordinary hands-on
experience is how Northwestern
recruits, retains, and trains talent.

PILLAR 03

ECOSYSTEM, TRANSLATION & IMPACT

*A front door to Northwestern
Science*

A network of networks,
connecting Northwestern
outward.

A MODEL THAT SCALES



THE OPPORTUNITY

- Demonstrate locally.
- Coordinate regionally.
- Scale nationally.
- Interoperate globally.

Northwestern can connect instruments, people, trusted data, AI,
education, national laboratories, and industry into one platform for
discovery, learning, and translation.
The tools, the expertise, the users, and the partnerships are already here.

“Art of Science”

“Science of Art”

“NanoPines”



Image by Luis Fernando Ayala, Hitachi SU8030

“Spikeball”

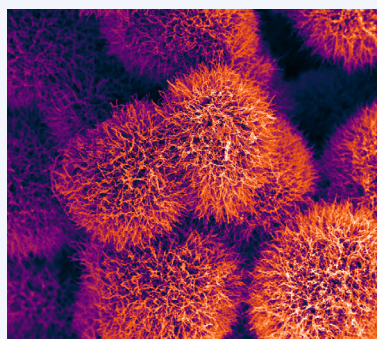


Image by Shelby Yuan, Hitachi S-4800

“A Roman Egyptian Painting Workshop:
Technical Investigation of the Portraits from Tebtunis, Egypt”



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