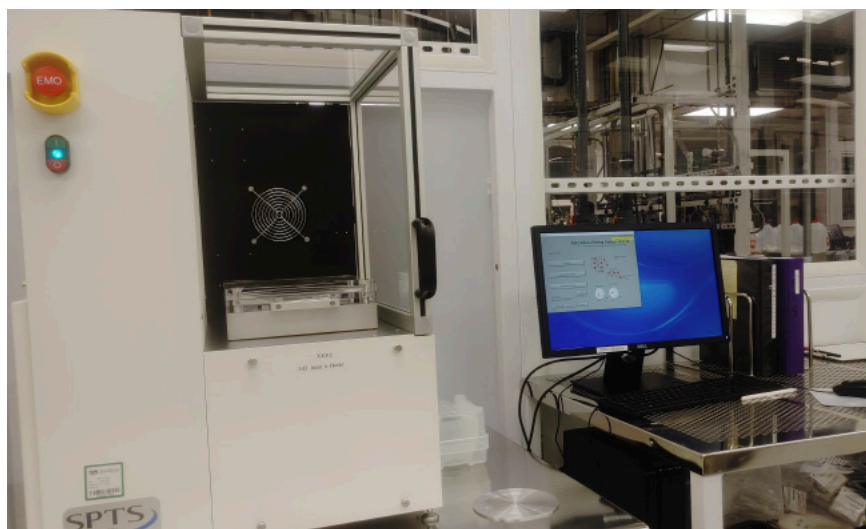


Equipment spotlight:

XeF₂ Etcher



The Xeactive e² model

Precision release in microfabrication

Added to the MTTC in 2024, the SPTS XeF₂ etcher is a specialized piece of microfabrication equipment designed for isotropic etching of materials such as Si, Mo, Ge, Nb, polysilicon, Ti and W. Utilizing xenon difluoride (XeF₂) gas, this etcher provides precise and controlled etching capabilities and can be used to make very long undercuts with little or no degradation of the etch stop, mask or device layers. This makes it ideal for releasing intricate structures in advanced micro and nanotechnology applications. Its high selectivity, non-plasma process, and ability to etch without physical contact make the XeF₂ etcher a crucial tool for achieving high-resolution and damage-free etching.

Key features

No stiction: No surface tension or bubble issues: XeF₂ can etch through small holes and tight spaces without problems - stiction free release! Residuefree etching: provides controlled etching without leaving residue.

High selectivity: One can use a variety of masking and structural materials exceeding 100:1 selectivity.

User-friendly interface: Simplified control systems for easy operation and minimal training.

Applications

The SPTS KLA XeF₂ Etcher is perfect for:

MEMS devices: Ideal for the fabrication of micro-electromechanical systems with complex geometries.

Nanotechnology research: supports cutting-edge research and development in nanotechnology.

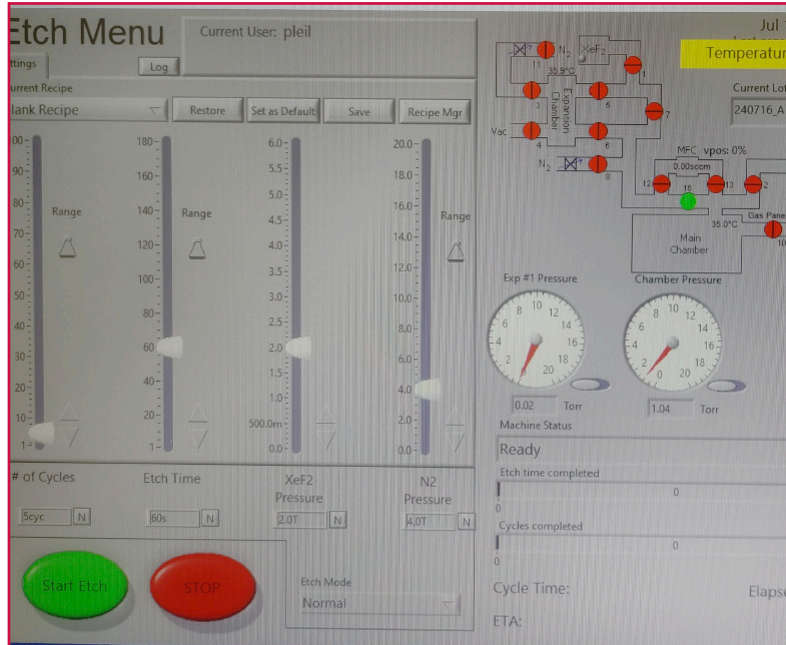
Photonic devices: Enables precise patterning for advanced photonic applications.

Technical specifications

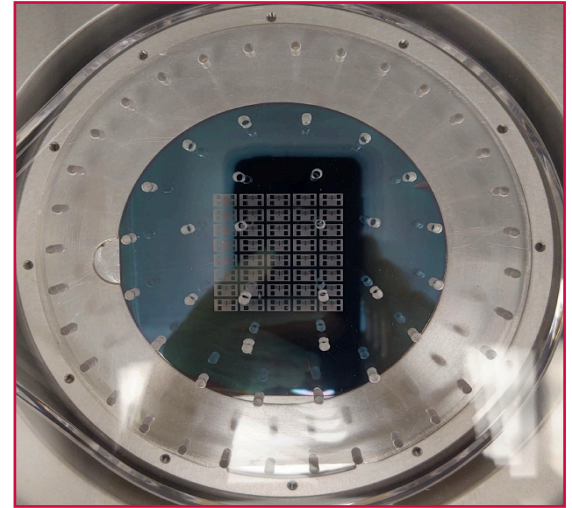
Materials compatibility: Compatible with a wide range of materials, including silicon, glass, and metals.

Gas system: efficient XeF_2 pulsed gas delivery system for precise control and minimal wastage.

Precise cycle control: By adjusting the ratio of XeF_2 to nitrogen gas ratio, etch rates, uniformity and surface roughness can be fine-tuned for your application.



The Xactive e² etch menu



XeF_2 main chamber with a wafer of MEMS thermal actuators

Support and training

We offer comprehensive support and training to ensure you get the most out of the SPTS KLA XeF_2 Etcher:

We can run it for you: Our staff can run your samples for you and assist in process development.

Training programs: If you will run your own samples, on-site training sessions are available to master the equipment.



Schedule a tour today!

Matthias Pleil, Ph.D., director/manager, mpleil@unm.edu

Bernardo Martinez-Tovar, Ph.D., Research Engineer III, bermartov0691@unm.edu

[Click here for a complete list of MTTC equipment](#)

The Manufacturing Training and Technology Center is a School of Engineering research center located on UNM's south campus.