



# XUUS - eXtreme Ultraviolet Ultrafast Source

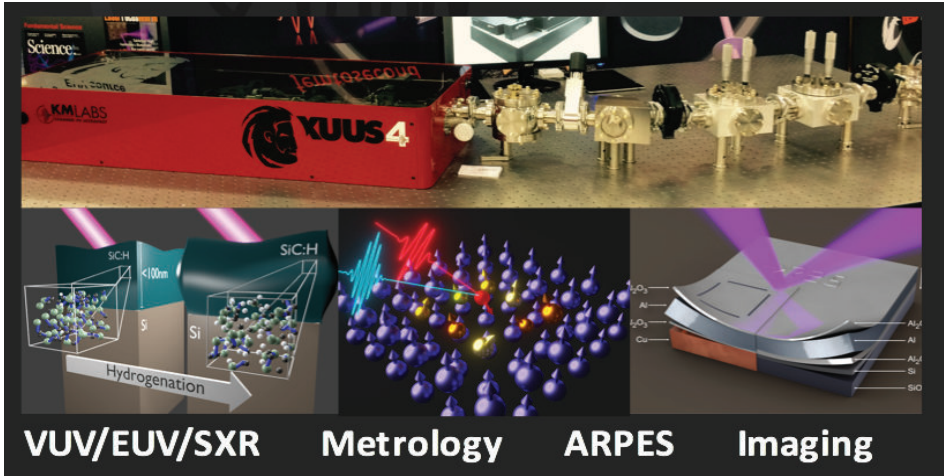
An X-ray laser for your lab

## Applications

- Metrology for nanoelectronics and in support of EUV lithography
- High-resolution and time-resolved coherent imaging
- Ultrafast magnetic materials & spintronics studies
- Photoemission: tr-ARPES & attosecond materials science
- General: high spatial/temporal resolution pump-probe experiments
- Molecular dynamics and attosecond science

## Features

- Wavelength ranges:
  - EUV 10-47 nm (26-124 eV)
  - Soft X-rays 4-10 nm (124-300 eV)
  - Soft X-rays 1-10 nm (124-1000 eV)
- Highest efficiency HHG: average EUV power of up to 10  $\mu$ W
- Fully engineered for outstanding long-term power & pointing stability (<5% & <10  $\mu$ Rad over 12 hours)
- Fully coherent near-Gaussian "laser-like" output beam
- Ultra-low gas load into beamline for maximized optical transmission and UHV compatibility
- Minimized gas and vacuum pump usage (500 hrs from standard 100 L bottle typical)
- Graphical, intuitive software control with integrated diagnostics



**XUUS™** coherent EUV/soft X-ray light source is based on high-harmonic generation (HHG). It is a fully engineered and integrated commercial source based on a single rugged optomechanical platform. It employs a KMLabs-patented hollow waveguide for the high-harmonic up-conversion process.

## XUUS Outstanding Characteristics

- Engineered waveguide geometry optimized for highest conversion efficiency
- Optimal phase matching with high spatial coherence
- Waveguide offers stable and near-Gaussian coherent EUV beam
- Proprietary XUUS hollow waveguide cartridge allows for a long lifetime and quick cartridge exchange with minimal realignment
- Minimized gas usage offers reduced operating cost vs. alternate HHG techniques
- Automatic pump beam alignment and stabilization

## XUUS Beamline Outstanding Characteristics

- Modularized XUUS beamline for maximized flexibility: tailored to your application requirements
- Modules for:
  - Steering and focusing the EUV beam
  - Filtering IR and selecting an individual harmonic spectral peak
  - Measurement of EUV power/spectrum
- Optimized optics for maximum EUV throughput
- Rigorous and background-free EUV flux characterization based on NIST-calibrated detectors

## Integrated System Outstanding Characteristics

- Fully integrated and tested single-supplier system
- Repetition rate and pulse energy can be varied to optimize EUV flux for different spectral regions

Contact us for full specifications or with questions

