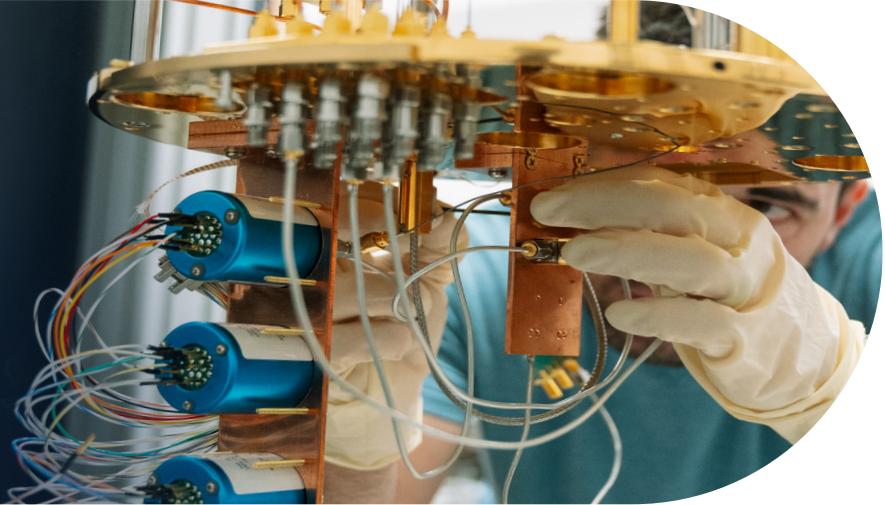


Quantum device characterization and fabrication



About Us

The Quantum Hardware Development and Commercialization Core Facility at UMass Boston provides access to advanced quantum device fabrication and characterization capabilities to accelerate innovation, prototyping, and commercialization.

The Quantum Core Facility's services are offered on a fee-for-service basis to internal and external investigators, as well as academic and industry collaborators.



Equipment and Capabilities

The Quantum Hardware Development and Commercialization Core Facility offers advanced assets and expertise:

- Quantum Core Facility researchers have access to our class 1000 cleanroom facility with electron beam and optical lithographic capabilities, as well as metal deposition of

superconducting metals with electron beam and sputter deposition processes. Packaging and characterization capabilities include atomic force microscopy, scanning electron microscopy, 4-point probe stations, and wire bonders.

- Low-temperature measurement systems include two-cryogen-free dilution refrigerators, Helium-3 cryostat and 4K cryostats for DC and RF measurements.
- A suite of measurement electronics is available for low-temperature electrical characterization of quantum devices. These resources include high-frequency vector network analyzers, spectrum analyzers, microwave synthesizers, and DC sources.
- Characterization of quantum devices at the Quantum Core Facility can be done in a remote modality with network access available to measurement computers and electronics.
- Technical expertise and support are also provided.



Matt Bell, PhD

*Associate Professor of Engineering
and Quantum Core Facility Director*

As the director of the Quantum Core Facility, Matt Bell leads a highly skilled team that provides technical assistance and training to both internal and external clients.

 umb.edu/research/cores

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 **UMass Boston Research Core Facilities**

**Contact us to find out more
about our services!**