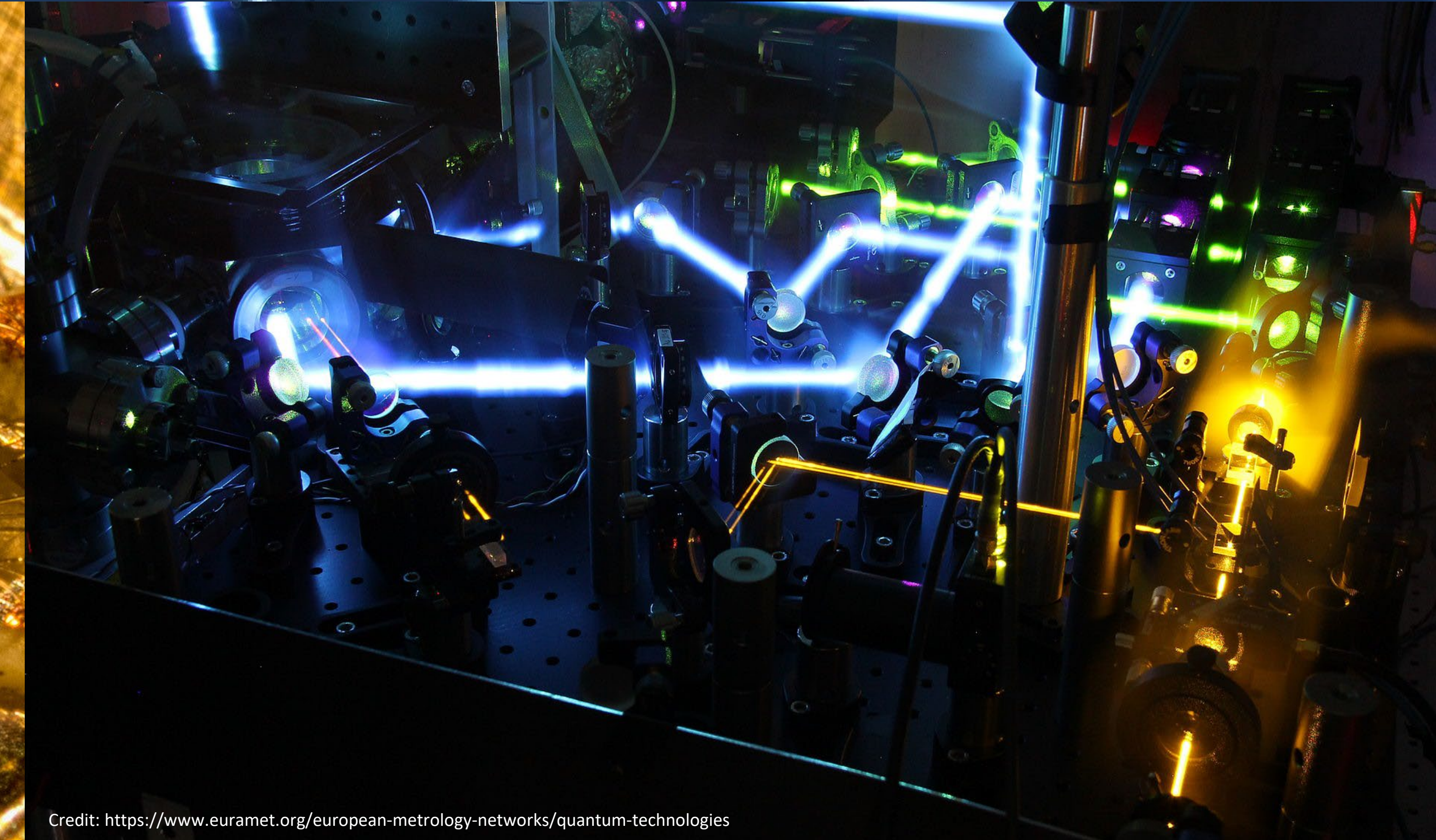
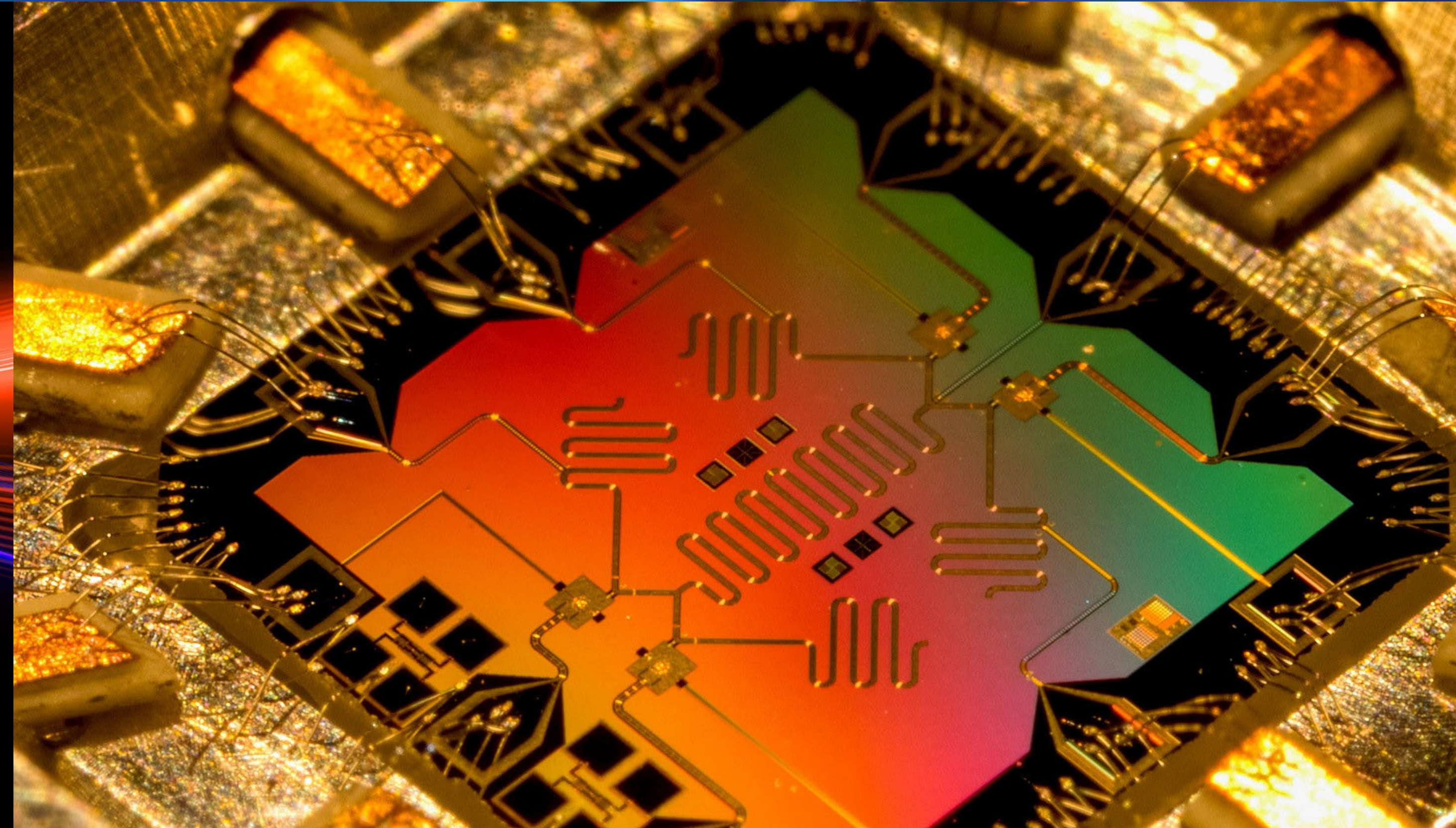


NMI-Q: Accelerating the Adoption of Quantum Technologies through Measurements and Standards

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Emerging technologies need innovations in metrology:

- agility to keep pace in a rapidly changing landscape;
- ability to develop novel measurement capabilities;
- comparability and interoperability across vendors;
- accelerated delivery: formal standards may be obsolete by the time they're published.



Credit: <https://www.euramet.org/european-metrology-networks/quantum-technologies>

The same quantum technologies that have revolutionized metrology, are also the same technologies that underpin emerging new markets in quantum computing, networking and sensing – and these quantum-based products require entirely new approaches for measurement and characterisation.

The world's metrology institutes are at the forefront of the quantum revolution

- They are both early developers and adopters of quantum technologies for metrology.
- NMIs spearhead the development of metrology for quantum – those measurements and related standards needed by industry to underpin quantum-based products.

The metrology community can:

- create trust in the emerging quantum economy;
- offer neutrality and international collaboration;
- anticipate industry's needs; and
- be ready with rigorous measurement capabilities.

The BIPM hosted a workshop in March 2024:

- 149 participants - 43 NMIs and DIs from 39 economies, and industry representatives.
- discussed how best to leverage their expertise to accelerate the development and adoption of quantum technologies through measurements and standards.

The workshop supported coordinated development and sharing of measurement “best practices” in support of future standardization, the mission of a new collaborative initiative referred to as NMI-Q.



The NMI-Q organizing committee, comprised of representatives of the NMIs of Australia, Canada, Germany, Italy, Japan, the United Kingdom, and the United States, are working on a cooperation framework inspired by the successful VAMAS organization, which conducts coordinated pre-standardization work in material science.

NMI-Q has initiated early work in quantum photonics, and expects to expand to a breadth of technical areas, such as measurement and characterization to support multiple quantum computing platforms, quantum networking models, and sensing modalities.