

Report on the Establishment of a New IUPAP Commission on Quantum Technology

Date: October 20, 2025

In response to the proposal to establish a new Commission on Quantum Science and Technology (QST), feedback was gathered from several IUPAP commissions. This report provides a synthesis of their views and a collective recommendation.

Commission Feedback

- **C15 (Atomic, Molecular, and Optical Physics):** Members expressed support, noting the commission's potential to consolidate and advance the field. They recommended renaming it *Quantum Technology* to highlight its applied orientation, and extending the scope to cover *Quantum Simulation* and *Quantum Metrology*. Active participation of C15 members was also encouraged to strengthen collaboration.
- **C8 (Semiconductors):** The proposal was endorsed, though overlaps were noted with C8's work in quantum dots, topological systems, and defect-based quantum platforms. Members recommended renaming the commission *Quantum Technology*, adding *Quantum Simulation* to the scope, and ensuring close coordination with C8 on conferences and prizes. The commission also emphasized the importance of industry involvement, highlighting IBM's expressed interest.
- **C5 (Low Temperature Physics):** Members broadly welcomed the initiative as timely and relevant. They noted overlaps with C5's mandate in quantum phenomena, superconductivity and cryogenic quantum technologies, and the opportunities for fostering wider collaboration. Recommendations included establishing cross-membership with related commissions, promoting diversity and inclusivity, and clarifying the role of industry and national liaison bodies.
- **C2 (Symbols, Units, Nomenclature, Atomic Masses and Fundamental Constants):** Endorsed the creation of the commission, noting consensus support.
- **C12 (Nuclear Physics):** Also endorsed the establishment of the commission.

There is clear and consistent support across commissions for creating a new body under the name **Commission on Quantum Technology**. The feedback highlights the importance of broadening the scope to include *Quantum Simulation* and *Quantum Metrology*, fostering collaboration with related commissions to manage overlaps, and promoting inclusivity in membership. Engagement with industry and national liaison organizations is also strongly encouraged. With these principles, the new commission will serve as an essential, collaborative platform for advancing international efforts in this rapidly developing field.

Daniel Varela Magalhães, Chair of the C2 Commission

Richard Haley, Chair of the C5 Commission

Gloria Platero, Chair of the C8 Commission

Maria Jose Garcia Borge, Chair of the C12 Commission

Jaewook Ahn, Chair of the C15 Commission