Centre of Excellence for Semiconductors and Quantum Materials (CESQM)

Islamic University of Science and Technology (IUST)

Vision

To emerge as a globally recognized hub of excellence in advanced semiconductor devices, molecular spintronics, and quantum materials by spearheading pioneering research at the intersection of multiscale quantum chemistry, high-performance computing, and deep technology, thereby fostering indigenous technological innovation and nurturing the next generation of scientific leaders.

Mission

- **Advance Frontier Research:** Drive breakthrough theoretical and computational discoveries in single-molecule magnets, quantum transport, spin-dynamics, and functional nanostructures using state-of-the-art ab initio methods and machine learning-assisted materials screening.
- **Bridge Academia and Deep Tech:** Accelerate the translation of quantum and semiconductor materials research into real-world applications by collaborating with academic institutions, research facilities, and high-tech industries.
- **Foster Academic Excellence:** Cultivate a vibrant research ecosystem that trains doctoral scholars, postdoctoral fellows, and students in advanced computational modeling, semiconductor physics, and quantum technology.
- **Build National Capabilities:** Strengthen national self-reliance in strategic technology sectors through specialized capacity-building programs, national workshops, and open academic-industrial partnerships.