

STC for Integrated Quantum Materials

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Quantum materials offer dramatically new and different approaches for electronics and photonics. Graphene offers electrons that move rapidly, at a constant speed, and pass through barriers, topological insulators have dissipation-free edge states, and nitrogen vacancy (NV) centers can store a qubit of information at room temperature. To realize the promise of quantum materials, their characteristics and the techniques to make devices and interconnected systems must to be understood. Our Center approaches this challenge by bringing together an interdisciplinary team of experts in materials growth and characterization, device fabrication and testing, and theoretical modeling. Working together, we are developing the science and technology needed to move toward quantum sensing, quantum communication and quantum information processing.

Robert Westervelt serves as the Director of the STC for Integrated Quantum Materials and as the Director of the Center for Nanoscale Systems, and he is the Mallinckrodt Professor of Applied Physics and Physics at Harvard.