

Panel 1: Quantum Effects

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Quantum Materials and Devices

Abstract

The Science and Technology Center for Integrated Quantum Materials joins Harvard, Howard University, MIT, the Museum of Science, and our College Network schools. Quantum materials have extraordinary properties: Atomic Layer Materials enable atomic-scale devices; Topological Insulators form protected data channels, and Nitrogen Vacancy Centers in Diamond create atomic memory sites. Our Center's goals are to create Quantum Materials by Design, new types of Quantum Electronics and Photonics, Quantum Interfaces between materials, and Atomic-Scale Networks. Our Center engages public audiences in the quest for new frontiers, attracts a balanced group of young students to STEM careers, improving the gender and racial balance, and aims to commercialize advances into new products and technologies.

Bio

Robert Westervelt received his PhD from UC Berkeley in 1977. Following a postdoctoral appointment, he moved to Harvard, where he is currently Mallinckrodt Professor of Applied Physics and Physics. Westervelt's group builds liquid-He cooled scanning probe microscopes to image electron motion through nanostructures. For bioengineering, his group develops programmable Integrated Circuit / Microfluidic chips. Westervelt is Director of the Science and Technology Center for Integrated Quantum Materials, and he is Director of the Harvard Center for Nanoscale Systems, which provides advanced shared facilities for nanofabrication, analysis, and electron microscopy.