Enrique (Erik) Blair, Ph.D.

Associate Professor, Electrical & Computer Engineering at Baylor University
Waco, TX, US

An expert in low-power computing, molecular computing, and quantum-dot cellular automata.

Biography

Dr. Blair joined Baylor University?s Electrical and Computer Engineering Department in August 2015 as an assistant professor. Dr. Blair also is a veteran of the U.S. Navy, serving as a submarine officer and as a military faculty member at the U.S. Naval Academy in Annapolis, Maryland. Dr. Blair completed his Ph.D. at the University of Notre Dame, where he developed theory and models for power dissipation and quantum decoherence in energy-efficient, high-speed molecular computing devices known as Quantum-dot Cellular Automata (QCA). His work includes modeling molecule-environment interactions by numerically solving Schrödinger?s equation or by using reduced dynamics (the Lindblad equation or the operator-sum equation). Results demonstrated that environmentally-driven quantum decoherence stabilizes QCA bits, and current work includes the modeling of field-driven electron transfer and power dissipation for clocked QCA molecules. Dr. Blair teaches courses on electrical circuits, quantum mechanics, quantum computing, and electronic communication systems.

Industry Expertise

Energy, Writing and Editing, Education/Learning, Research

Areas of Expertise

Entropy, Power Dissipation, Low-power Computing, Molecular Computing, Finite-dimensional Quantum, Quantum Decoherence

Education

University of Notre Dame
Ph.D.