

**STEVENS INSTITUTE OF TECHNOLOGY  
DEPARTMENT OF MECHANICAL ENGINEERING**

**Wednesday, October 14, 2009  
Carnegie Room 315, Time 1:30pm**

***Ultra-Compact Vibration Power Harvesting for Self-  
Powered Wireless Sensors***

**Dr. Michael Grissom**

Technical Project Manager  
KCF Technologies, Inc.  
State College, PA

KCF Technologies has been developing vibration power harvesting devices for self-powered sensors for over five years. Ongoing developments are focused on low-cost industrial applications and secure Navy shipboard applications. KCF has developed a prototype ultra-compact power harvester for use on Navy rotorcraft. The key design challenges are size, packaging, and meeting the power budget of a vibration sensor over a wide range of placement locations on the rotorcraft. Single-crystal piezoelectric materials are a key enabling technology to make the KCF device small and powerful enough to buy their way onto rotorcraft. The compactness and high power output, directly enabled by single-crystal ferroelectrics, are demanded for aircraft components where weight reductions are critical and high-vibration components are readily available.

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**Dr. Michael Grissom** is a Technical Project Manager for KCF Technologies. He has spent the last 15 years in research, design and measurement of dynamic systems. He earned a Doctorate in Mechanical Engineering from Penn State University in optimal design of structures for acoustic noise reduction. His professional experience covers a wide range of technology applications including energy harvesting, electroosmotic pumping, electroactive polymers, bio-inspired robotic design, and real-time data monitoring in the financial services sector.

*For more information, please contact Prof. Cappelleri at [David.Cappelleri@stevens.edu](mailto:David.Cappelleri@stevens.edu)  
or 201-216-5072*