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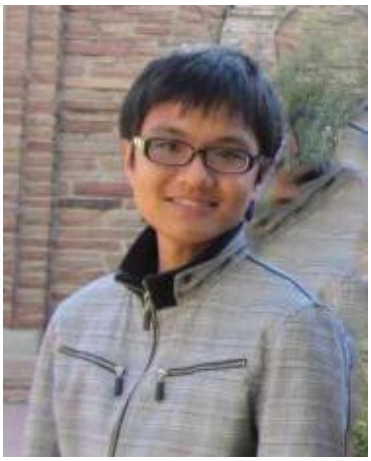
Birck Nanotechnology Center



Dr. Pen-Li Yu is a postdoctoral research associate in ECE, Purdue University. He pursued graduate studies in Dr. Cindy Regal's new group at JILA and the University of Colorado at Boulder in 2009. His graduate study received Government Scholarships to Study Abroad from Taiwan Ministry of Education. After completion of his PhD in 2015, Ben joined Prof. Sunil Bhave's new team at Purdue University. His research focus on designing novel MEMS devices for quantum technology, as well as applying advanced physics to improve MEMS performance. He has co-authored 8 peer-review journal papers with > 500 citations.

Birck Faculty Seminar
Dr. Pen-Li (Ben) Yu

Thursday, February 22, 2018
12:00pm – 1:00pm
BRK 2001 – Lunch Provided

RF MEMS for Quantum Applications

In recent years, quantum technology has undergone a revolution in both the individual quantum bit performance as well as the number of coupled qubits. Along with this revolution is the need of sending quantum information over long distance and tools to operate qubit. In this talk I will describe my research efforts on the development of RF MEMS for quantum communication and control. First, just like modern communication, sending quantum information over long distance requires coupling the microwave quantum processors to optical network. The state of the art microwave-to-optical converter is an electro-opto-mechanical system with 42% photon conversion efficiency. Secondly, for room temperature qubit such as NV center in diamond and deviancies in SiC, RF MEMS provides an alternative way to control it with its compactness, integrability, high-Q enhancement, and access to magnetic forbidden transition.

PURDUE UNIVERSITY Discovery Park