

The Department of Mechanical Engineering
PRESENTS

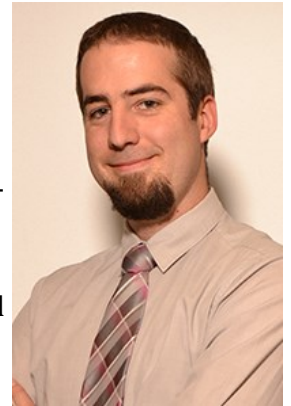
Darren Banks, Ph.D. Student
Kendrick Mensink, Ph.D. Student
University of California, Riverside

Friday, February 27, 2015
WCH Room 205/206, 11:10AM-12:00PM

Optical Cavitation Bubble Dynamics, by Darren Banks

Abstract:

Optical cavitation is the occurrence of an explosive bubble when a laser is focused into a liquid. For applications using a series of cavitation bubbles, control of the bubble formation frequency is necessary. We present measurements of the frequency and bubble size for continuous wave cavitation for a range of laser power and a focal point position. Higher laser power produces higher frequencies. By moving the focal point, an optimal focus producing the highest frequency is found. As frequency increases, bubble size decreases.



About the Speaker:

Darren is a Ph.D. candidate at UC Riverside Department of Mechanical Engineering. He received his B.S in Mechanical Engineering at the University of California, Riverside in 2010.

Femtosecond Laser Ablation Studies, by Kendrick Mensink

Abstract:

Metals and ceramics such as steel, stainless steel, cobalt carbide and tungsten carbide are very attractive materials because of their high melting temperature, hardness, high thermal and electrical conductivities and good chemical stability. We report on the femtosecond laser ablation of these materials and qualify the viability of this technique for producing micro-structures. The ablation thresholds are systematically studied with profilometry and atomic force microscopy. The novelty of femtosecond pulsed lasers is that ablation is observed at fluence rates lower than reported elsewhere.



About the Speaker:

Kendrick Mensink is a current graduate student in the Mechanical Engineering department at the University of California Riverside. He received his B.S.E. in Mechanical Engineering from Walla Walla University in 2012. His current research aims to improve applications of laser processing of materials.

