

UC SAN DIEGO NANOENGINEERING SEMINAR

Wednesday, September 19, 2018

Seminar Presentation: 11:00am - 12:00pm

SME 248

“Nanotechnology Applications in Inertial Fusion Technology Development”

Dr. Benjamin Russ

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Inertial Fusion Technology Division

General Atomics

Abstract: General Atomics supports the Department of Energy’s Inertial Confinement Fusion (ICF) and high energy density physics research programs. This research requires extreme temperatures, on the order of 100 million °C, and pressures in excess of 100 Gbar. In order to perform meaningful experiments, work is performed at extremely small scale, requiring very high precision components. Advances in high precision additive manufacturing have allowed new materials and designs to be realized. General Atomics has developed a two photon polymerization (2PP) system capable of producing acrylic parts with sub 200 nm features without seams in large build volumes up to 25 mm x 25 mm. This work is also being expanded to CH (oxygen free) and metal materials. Past research on other projects at GA, such as H₂ production, medical nuclear isotope development and advanced fluidized bed development will be briefly discussed.

Biosketch: Dr. Benjamin Russ currently is the center head of the Advanced Technology Group in the Inertial Fusion Technology Division at General Atomics.