

**The Wolfson Department of Chemical Engineering
Technion-Israel Institute of Technology**

Special seminar by the recipient of the Technion Honorary Doctorate

Edwin L. (Ned) Thomas, NAE

Dean of Engineering

Professor of Materials Science and NanoEngineering

Rice University

Houston, Texas, USA

Will talk on

"High Velocity Projectile Impact of Materials"

The ultrahigh strain rate behavior of lightweight energy-absorbing materials, such as block copolymers (PS-PDMS), multilayer graphene films, as well as electrospun polymeric nano fibers, is explored using a miniaturized ballistic test: LIPIT, Laser Induced Projectile Impact Test. Micron sized projectiles are launched at the various targets using a laser pulse, and the deformation field around the embedded projectile is analyzed for thick targets, while penetration occurs for thin targets. We also study the deformation of Ag micro-cube projectiles due to their impact on hard, impenetrable substrates, and investigate the strong gradient nano-micro-structures thereby produced due to the extreme strain rates. Such studies provide valuable information for applications such as advanced protective materials for aircraft crashes, sports-related collisions, as well as to develop advanced materials processing techniques, such as cold-spray metallic coatings.

Tuesday, 7 June 2016

10:30, Auditorium 100, Biotechnology and Food Engineering