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Faculty of Science and Technology
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Material Structural Hierarchy and Functional Synergies

By

Prof. Ning PAN, Full Professor, Department Biological and Agricultural Engineering, UC Davis

Date: 26 October 2016

Time: 11:00a.m.

Venue: E12-G020

Abstract

Structural hierarchy and thus heterogeneity are inherent features in biological materials, but their significance in affecting the system behaviors is yet to be fully understood. This presentation first discusses the important features characterizing a hierarchal material system at various scales. It then demonstrates that such multi-scale hierarchy can effectively synergize the physical, mechanical and other important properties. It next deals with some theoretical issues associated with the disparity in hierarchal levels in material research. This talk examines these related topics with several approaches to not only reveal the underline geometrical and physical mechanisms, but also emphasize the ways in which such mechanisms can be applied to developing engineered material systems with novel properties.

Biography

Prof. Ning Pan is a full professor with Dept. Biological and Agricultural Engineering, UC Davis. He got his PhD, Donghua University, China, in textile engineering 1985. Prof. Pan joined UC Davis as a faculty member in 1990 after postdoc at MIT. He was awarded Honorary Doctoral degree from Technical University of Liberec, Czech Republic in 2010. He is a Fellow of Textile Institute (U.K) (since 1995), American Society of Mechanical Engineers (ASME) (since 2004), and American Physical Society (APS) (since 2015). His research interests include soft fibrous materials, nanoscale energy materials and biomechanics. Prof. Pan had published more than 240 SCI papers.

All are Welcome!