



ΑΡΙΣΤΟΤΕΛΕΙΟ  
ΠΑΝΕΠΙΣΤΗΜΙΟ  
ΘΕΣΣΑΛΟΝΙΚΗΣ

# ΣΕΜΙΝΑΡΙΟ ΤΜΗΜΑ ΦΥΣΙΚΗΣ

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ώρα 12<sup>30</sup>

Αίθουσα Α<sub>31</sub>

## Κύκλος σεμιναρίων

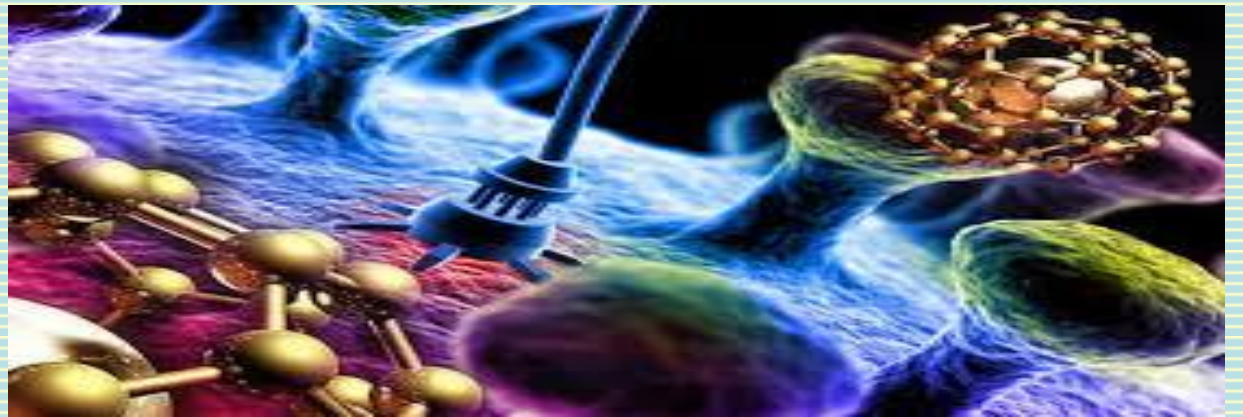


... ένα ταξίδι  
σύγχρονης

στον κόσμο της  
Φυσικής

στο Τμήμα Φυσικής

## Impact of Nanosciences and Nanoengineering on Emerging Technology and Biomedical Fields



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Recent progress in nanosciences and nanoengineering has created numerous opportunities for innovation and evolution in various cutting-edge technology and biomedical fields. Because of the unique physical laws governing material behavior at small scales, new engineering and biomedical approaches and different thinking processes must be adopted. Representative examples of breakthroughs in information storage, microelectromechanical systems, and biotechnology fields will be presented to illustrate the promises of nanosciences and nanoengineering, in conjunction with scientific and technology challenges that must be overcome for further growth to be realized. The origins of surface forces, significance of self-affinity in surface texture, material response to localized deformation, self-assembly of monolayers, synthesis of ultrathin film, and protein/cell interactions with plasma-modified scaffold surfaces will be discussed in the context of recent findings.

*Το προφίλ του ομιλητή*



Professor Kyriakos Komvopoulos has been a faculty member of the Department of Mechanical Engineering at the University of California at Berkeley since 1989. He is internationally known for pioneering research in surface nanosciences and nanoengineering with important implications in several emerging technologies including communications, microelectronics, information storage, and biotechnology. Is the founder and director of the *Surface Mechanics and Tribology Laboratory* (1989), which in 2008 was split into two laboratories, the *Surface Sciences and Engineering Laboratory* (SSEL) and the *Computational Surface Mechanics Laboratory* (CSML), in response to the needs of his research programs in different interdisciplinary fields. He is the research advisor of more than a dozen PhD students in the Colleges of Engineering and Chemistry at UC Berkeley. Is also a Visiting Professor in the Department of Orthopaedics, School of Medicine, University of California at Davis, a Faculty Scientist in the Materials Sciences Division of the Lawrence Berkeley National Laboratory, a Principal Investigator at the Center for Information Technology in the Interest of Society (CITRIS), and participant faculty in the Nanosciences and Nanoengineering Graduate Program at UC Berkeley.