



ΙΤΕ / ΙΕΧΜΗ

Κύκλος Σεμιναρίων ΝΑΝΟΤΕΧΝΟΛΟΓΙΑ / ΝΕΑ ΥΛΙΚΑ

ΟΜΙΛΗΤΗΣ: Κωνσταντίνος Παπαγγελής, Επίκουρος Καθηγητής
Τμήμα Επιστήμης των Υλικών, Πανεπιστήμιο Πατρών

ΘΕΜΑ: Φυσική και μηχανική του γραφενίου.
Graphene physics and mechanics.

ΤΟΠΟΣ: Αίθουσα Σεμιναρίων ΙΤΕ/ΙΕΧΜΗ

ΗΜΕΡΟΜΗΝΙΑ: Τετάρτη, 28 Νοεμβρίου 2012

ΩΡΑ: 12:00

ΠΕΡΙΛΗΨΗ:

Graphene, one atom thick membrane, is the thinnest known elastic material, exhibiting exceptional electronic and optical and mechanical properties. Many applications direct exploiting its Young's modulus of ca. 1 TPa and strength over 160 GPa are envisaged or even already tested, such as mechanical resonators, strain sensors, or graphene-based composites. Also, bilayer or multilayer graphenes, owing to their distinct electronic band structures, have extraordinary potential for next-generation optoelectronics and post-silicon nanoelectronics. On the other hand, Raman spectroscopy is a key diagnostic technique which has been extensively employed to characterize graphene layer thickness, i.e., the number of layers, domain grain size, doping levels, the structure of graphene layer edges, anharmonic processes and thermal conductivity. In this talk some fundamental physical and mechanical properties and phenomena along with potential applications of graphene will be discussed.