



ΙΤΕ/ΙΕΧΜΗ

ΣΕΜΙΝΑΡΙΟ ΣΕΜΙΝΑΡΙΟ

ΟΜΙΛΗΤΗΣ: Δημήτρης Τάσης, Επίκουρος Καθηγητής
Τμήμα Χημείας, Πανεπιστήμιο Ιωαννίνων

ΘΕΜΑ: Multifunctional hybrid nanostructures based on carbon allotropes

ΤΟΠΟΣ: Αίθουσα Σεμιναρίων ΙΤΕ/ΙΕΧΜΗ

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ΠΕΡΙΛΗΨΗ

Carbon-based nanomaterials are considered promising nanostructures for incorporation in a wide range of new applications, such as flexible electronic devices, biosensors or intelligent coatings. Therefore, the scientific community needs to develop protocols for the mass production of carbon-based allotropes in solution. In this presentation, various approaches towards the production of stable dispersions of graphitic nanostructures in a variety of solvent media are described. The dangling bonds at the edge of graphene can be used for the covalent attachment of various chemical moieties while the graphene basal plane can be modified via either covalent or noncovalent functionalization. Few examples of organic functionalization reactions of graphene are described, including 1,3-dipolar cycloadditions, amide condensations, nitrene additions, and radical reactions. The design of novel protocols for further organic functionalization should increase our knowledge of the fundamental chemistry of graphene and spur the further development and application of these materials. In addition, some new ideas and strategies are summarized concerning the controlled functionalization of graphene towards its integration into hybrid structures and the development of various applications, such as energy conversion devices.



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Dr. Dimitrios Tasis holds a PhD in Chemistry (2001). Then, he moved to the University of Trieste (Italy), for two years as a postdoctoral fellow, working in the field of carbon nanotube and fullerene chemistry. From early 2004 until 2014, he was teaching at the University of Patras and has developed fruitful collaboration with FORTH-ICEHT. He has supervised more than 10 Diploma Theses. In 2014, he has been appointed as assistant professor in the department of Chemistry, University of Ioannina (Greece). His research interests lie in the chemistry of carbon-based nanostructures, such as carbon nanotubes and graphene, as well as the development of their multifunctional assemblies. He has published about 40 research articles in peer-reviewed journals, 3 review articles, 5 chapters in books, has participated in about 50 international conferences and has delivered more than 10 invited talks.