ΠΑΝΕΠΙΣΤΗΜΙΟ ΙΩΑΝΝΙΝΩΝ

**ΣΧΟΛΗ ΘΕΤΙΚΩΝ ΕΠΙΣΤΗΜΩΝ**

**ΤΜΗΜΑ ΦΥΣΙΚΗΣ**

**ΟΜΙΛΙΑ**

**ΤΜΗΜΑ ΦΥΣΙΚΗΣ**

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***«Molecular dynamics at nanometric length scales»***

**Δευτέρα 7 Νοεμβρίου 2016, ώρα 12:00**

**Αίθουσα Σεμιναρίων Τμήματος Φυσικής**

**Βιβλιοθήκη - κτίριο Φ2 - 3ος Όροφος**

**Molecular dynamics at nanometric length scales**

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The question on what length-scale molecular and especially glassy dynamics of polymers takes place is of fundamental importance and has multifold practical implications as well. Recent results based on Broadband Dielectric Spectroscopy [1] for nanometric thin (≥5 nm) layers of poly(styrene) [2], poly(*cis*-1,4-isoprene) [3], poly(styrene‑b‑1,4-isoprene) diblock copolymers [4] and even for isolated chains [5] and for brushes of poly(2-vinylpyridine) in the dried [6] and swollen [7] state will be presented, delivering the concurring result that deviations from glassy dynamics of the bulk never exceed margins of ±3 K *independent* of the layer thickness, the molecular weight of the polymer under study and the underlying substrate. - The experiments lead to the conclusions that glassy dynamics takes place on the length scale a few polymer segments (≤ ~ 1nm), while the conformation of the chain as a whole is strongly modified by the geometrical confinement. The results will be discussed with respect to the highly controversial literature [8,9].

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