

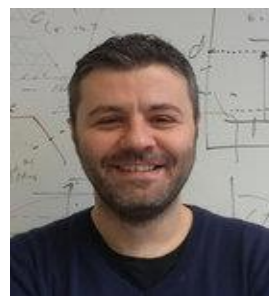


# Σ Ε Μ Ι Ν Α Ρ Ι Ο

## Nanomaterials from first principles

Παρασκευή 14/05/2021, 11:00-13:00

<https://authgr.zoom.us/j/91328088055?pwd=YXFURS9yMWphTkhUZkloYVVAwUklDUT09>



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**ABSTRACT :** Nanomaterials, i.e., materials or structures that have at least one dimension between 1 and 100 nm, constitute the cornerstone of all modern materials science and technology. However, due to the dimensions and complexity, i.e., a complex system embedded in and interacting with a complex environment, it is not always straightforward or even possible for experiment to identify the dominant mechanisms governing the properties of nanomaterials. Computational Materials play a central role in modern materials research and technology and in synergy with experiment boost the research and design of novel nanomaterials.

In this seminar we will provide a short introduction on first principles calculations, which nowadays constitute the working horse in the field of Computational Materials research. Surfaces and interfaces, which are the key features that control both the properties as well as the growth of nanomaterials, will be used to highlight how these calculations can provide on atomic scale understanding of the physics and reveal the dominant mechanisms of semiconductor nanostructures.

**SHORT CV :** Dr. Lymperakis is a graduate of the Physics Department (1997) and the M.Sc. Program “Physics of materials”(2000), Aristotle University (Thessaloniki, Greece). From 2000 to 2005, he was a PhD fellow at the Fritz-Haber-Institute of the Max Planck Society (Berlin, Germany) and obtained his PhD from the University of Paderborn, Germany in 2005. From 2005 to 2011, he was the Head of the microstructure group in the Max-Planck Institut für Eisenforschung GmbH, Düsseldorf, Germany and since 2012 he is heading the activities of the Growth Modelling group. In 2011 he spent a year in the Physics Department in AUTH, Greece. His research focuses on Computational Materials with a strong focus on compound semiconductors and optoelectronics.