

Faculty Member

Dr. Christos CHRISTIDES
Associate Professor

Magnetoelectronics & Nanostructured Materials



Undergraduate Courses

[Semester 1](#): 23Y105 Physics

[Semester 2](#): 23Y181 Circuits Theory

[Semester 2](#): 23106E Instrumentations & Measurements

[Semester 3](#): 23Y165 Basic Electronics

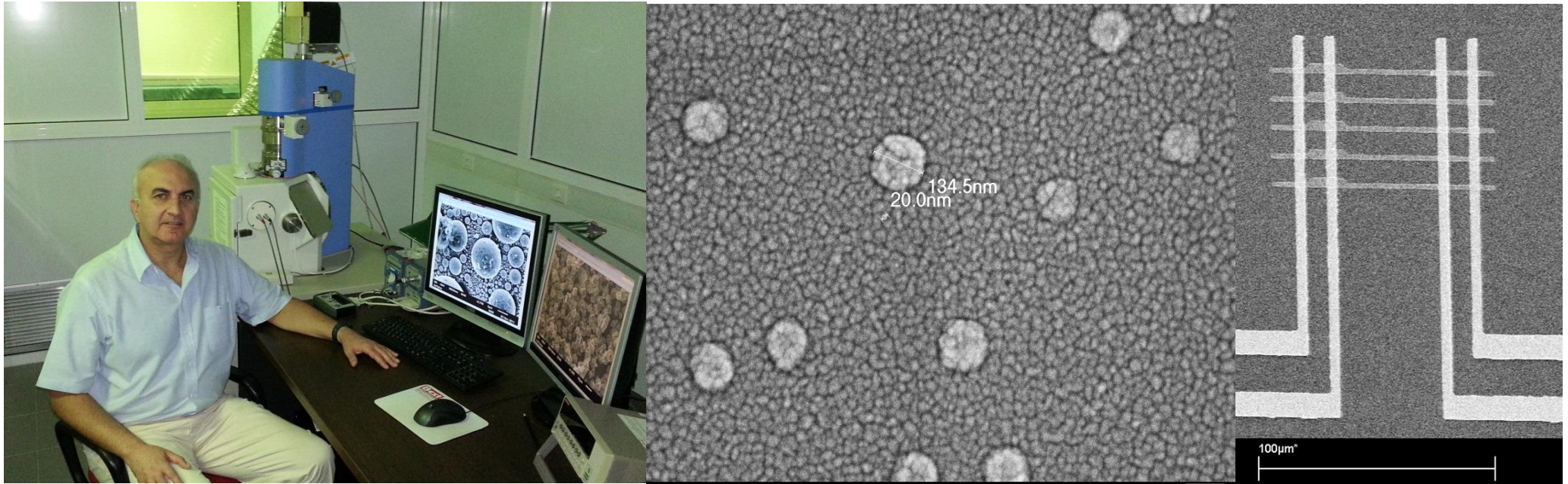
Postgraduate Courses

[Semester 2](#): CEID1069 Nanoelectronics & Quantum Gates

Christos Christides obtained his Degree in Physics from Physics Department, Heraklion, University of Crete, in 1984 and his Ph.D. degree in Experimental Condensed Matter Physics from the Department of Physics, University of Athens in 1990. His PhD thesis has been carried out at the National Center for Scientific Research (NCSR) “Demokritos”, and concerns the study of intrinsic magnetic properties in rare-earth iron based permanent magnets. Between 1991 and 1993 he was employed as a post-doctoral research fellow in Chemistry Department, University of Sussex, UK, and carried out research on the newly discovered superconducting fullerides (a fullerene doped with a metal atom) and C_{70} fullerenes, using mainly neutron and synchrotron radiation x-ray scattering experiments at Rutherford-Appleton Laboratories, UK, and the National Institute of Standards and Technology (NIST), USA. He was appointed in 1995 as a Research Associate at the NCSR “Demokritos, to work on a EU funded project on Giant-magnetoresistance (GMR) materials for sensor applications. In 1998, he joined as a Faculty Member the Department of Engineering Sciences, University of Patras and now is in the Department of Computer Engineering and Informatics at the same University. He has published over 100 peer reviewed articles, and has edited three volumes for teaching Electrical and Electronic Circuits at the undergraduate level. His research is highly cited, with a personal reference from Prof. Sir Harold Kroto, the 1996 Nobel Prize for Chemistry, in his Nobel Lecture paper given in conjunction with the award. His research interests cover a wide spectrum of diverse areas from fundamental research to applied problems in experimental condensed matter physics and materials science. These range from permanent magnet materials, superconducting fullerides and fullerenes, strongly-correlated electron systems such as perovskite thin film structures that exhibit colossal magnetoresistance and exchange biasing effects, multilayered films that exhibit the GMR effect, anomalous Hall effect in layered, granular films, artificial nanostructures, and topological insulators.

Research Lab

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Research Activities:

- ✚ Mesoscopic Physics in nanogranular thin film structures
- ✚ Electron Beam (e-beam) Lithography
- ✚ Scanning Electron Microscopy

Infrastructure:

- ✚ Scanning Electron Microscope (SEM) Jeol JSM-6610
- ✚ Embedded e-beam Lithography system XeDraw2 XENOS
- ✚ XENOS Lithography stage XeMove
- ✚ Mini sputtering system
- ✚ Fume hood (cupboard)
- ✚ Equipped chemical bench
- ✚ Cleanroom Class-2 with BS 5295 Cleanroom Standards

E-beam Lab photo-gallery:

Collaborations:

- Institute of Nanoscience & Nanotechnology, N.C.S.R. “Demokritos”, 153 10, Aghia Paraskevi, Attiki, Greece.
- Department of Electrical Engineering and Computer Technology, University of Patras, Greece.

Recent Projects & Funding:

- Operational Program “Education and Lifelong Learning”, National Strategic Reference Framework (NSRF) Research Funding Program: Heracleitus II, University of Patras.
- European Social Fund (ESF), Operational Program for Educational and Vocational Training II (EPEAEK II), Program PYTHAGORAS II, University of Patras.
- Operational Program “Education and Lifelong Learning”, National Strategic Reference Framework (NSRF), Research Funding Program: Greece – Hungary bilateral cooperation (HUN 82).

Selected Recent Publications:

- Th. Speliotis, P. Athanasopoulos, A. Melitsiotis, V.M. Papaioannou, A. Travlos, K. Misiakos, C. Christides, Scaling of magnetotransport properties in granular $\text{Co}(c = 0.8)\text{Bi}(1-c)$ thin films, *Applied Surface Science* 334 (2015) 45–51.
- P. Athanasopoulos, C. Christides, Th. Speliotis, Quantum interference effects in $[\text{Co}/\text{Bi}]n$ thin films, *EPJ Web of Conferences* 75,01002 (2014).
- C. Christides, Th. Speliotis, M. Chatzichristidi, I. Raptis, Large asymmetries of magnetoresistance loops in Co-line structures, *Microelectronic Engineering* 85 (2008) 1382–1385.

