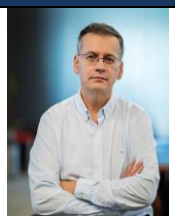
PERSONAL DATA



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EDUCATION

Ph.D. **Institution:** **Physics Department, University of Athens & Institute of Microelectronics, NCSR "Demokritos"**

"Electron beam lithography: fabrication & simulation of high-resolution structures" 4/1996

B.Sc. **Physics Department, University of Athens**

PROFESSIONAL & SCIENTIFIC EXPERIENCE AFTER Ph.D. THESIS

Current positions

01/2019-today **02/2013 – 09/2017**	Director of Research at the Institute of Nanoscience & Nanotechnology, NCSR 'Demokritos'
01/2009-today	Chief Operating Officer and Research Director of ThetaMetrisis S.A.

Previous positions

10/2017-12/2018	Lead Scientist at King Abdullah University of Science and Technology
01/2008 – 01/2013	Senior Researcher at the Institute of Microelectronics, NCSR 'Demokritos'
06/2003 – 12/2007	Researcher at the Institute of Microelectronics, NCSR 'Demokritos'
1/1997 – 06/2003	Post Doc at Institute of Microelectronics, NCSR 'Demokritos'
10/1997 – 06/2003	Lecturer at Electronics Dept. Technological & Educational Institute of Athens

SYNOPSIS OF RESEARCH ACTIVITIES (2006-2021)

My research activities spread in the areas of **microelectronics, microsystems, photonics and biosensors** and cover the design, development and characterization of technologies, devices and related systems. In all those areas, research groups have been formulated under my guidance including personnel with complementary background. In particular in:

Microelectronics: the research focus was on the development and optimization of materials and patterning technologies in the micro & nano scale. The research effort was channeled in: a) Development of optical (248nm, 193nm, 193i, EUV), electron beam and proton beam litho processes b) In-depth characterization of photosensitive materials and c) Simulation of lithographic processes. The accumulated knowhow has been transferred to the areas of microsystems and photonics.

Microsystems: the research effort is directed towards the development of technologies, devices and systems for the detection of analytes in the environment. Highlight is the development of a miniaturized low-power hybrid wireless sensor network system comprised by appropriately functionalized chemocapacitor array and off-the-shelf electronic components along with data acquisition and signal processing software.

Photonics: the research is directed towards the realization of monolithic optoelectronic devices. Highlights are a) the realization of monolithically integrated optoelectronic chips where all active and passive components are fabricated on the same Si chip, based on the concept developed by K. Misiakos and b) the realization of 1-D and 2-D photonic crystals far sensing applications.

Biosensors, the research activity is directed in the design and implementation of photonic transducers for application in the quantitative determination of critical for human health biomarkers and of harmful substances in food at the Point-of-Need. The first prototype has been already developed (hardware, software, immunoassays) and currently the research is directed in the development of a holistic solution for the detection of the biomarkers that are related to sepsis.

MANAGEMENT EXPERIENCE (2006-2021)

Submission of research proposals and Coordination of research projects funded by Greek and International research agencies in the areas of mainstream microelectronics, photonics, micro/nano systems for both NCSR 'Demokritos' and ThetaMetrisis.

Total funding for NCSR 'Demokritos' through external competitive grants is ~2.5M€.

Total funding for ThetaMetrisis through external competitive grants is ~0.8M€.

Highlights for research projects granted to NCSR 'Demokritos':

Set-up & Coordinate the **PB.NANOCOMP** project (lithography)

Set-up & Coordinate the **PYTHIA** project (Photonics)

Set-up & Coordinate the **FOODSNIFFER** project (Photonics)

Set-up & Coordinate the **HERON** project (Biosensor)

Member of the **Research Council** of INN (2016-2017, 2021-2022).

Total Research output in figures:

Publications in peer review international journals (1992-2021):	>170
Chapters in books:	3
Patents:	4
Citations:	>2600
h-Index (Scopus):	27

Research exploitation

The electron beam lithography software (LITHOS) and the related models and algorithms that were developed in the **framework of my Ph.D. thesis** under the supervision of Dr. Nikos Glezos became commercial product that was introduced into the international lithography market by Sigma-C GmbH company. To S/W was purchased by several research institutions and companies active in the area of high-resolution lithography and settled in Europe, USA and Asia.

In the framework of my **Postdoctoral research** (1999-2003) I developed the White Light Reflectance Spectroscopy methodology for the characterization of thin photoresist films which became the core know-how for the establishment of ThetaMetrisis company (2009), by myself and D.Goustouridis. The company design and manufacture tools for the non-destructive characterization of coatings in terms of thickness, optical properties, with application in microelectronics, sensors, lenses, automotive, packaging etc. The company exports >90% of its production in EU, USA, Japan, China, UK, Singapore, India, Israel, and other countries in both academic and industrial users, e.g. Stanford Univ, Univ of Delft, Chalmers Univ, Tokyo Univ, Tsukuba Univ, Amazon, Samsung, Huawei, Siemens, Sumitomo, Sanan etc.

OTHER SCIENTIFIC ACTIVITIES

>40 invited talks in conferences, universities, workshops, summer schools

- Organizing committee member for MNE 2019 (Rhodes, Greece, 09/2019), 650 participants
- Conference Chairman for EuroPtrode 2014 (Athens, Greece, 04/2014), 250 participants
- International steering committee member for the EuroPtrode conference series
- Chairman for MicroNanoBioSystems workshop 2012 (Athens, Greece 04/2012), 90 participants
- Program Chairman for MNE 2008 conference (Athens, Greece, 09/2008), 700 participants

- Associate Editor in Optics & Laser Technologies journal (Elsevier), IEEE Sensors (IEEE)
- Editorial board member in Scientific Reports (Nature), Biosensors journal (Mdpi)

- Reviewer of ERC proposals & projects (ERC-EU, FP7-EU, national, Poland, Romania)
- Evaluator of Ph.D. theses in Greece, Spain, Ireland and Singapore