



Zisis Grigoris

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**Address:**  
Aminta 2, Pangrati  
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Greece

# Zisis Grigoris

## Senior Optical Metrology Engineer

Experienced engineer with a 5-year demonstrated history of working in the semiconductor metrology industry. Background in electro-optics, photonics and semiconductors with a strong passion and interest in these areas. Skilled in optical systems development (prototyping, testing, qualification) and data-analysis using numerical analysis tools.

### Education

#### Ph.D. in Optoelectronics

**Optoelectronics Research Centre, University of Southampton** (05/2016)

Thesis title:

*"Laser-induced Ferroelectric and Photonic Structures in Lithium Niobate crystals"*

#### B.Sc. in Material Science

**Department of Material Science, University of Patras** (02/2011)

#### M.Sc. in Data Science [in progress]

**International Hellenic University** (09/2020 - present)

### Experience

#### Senior Optical Metrology Engineer

**ThetaMetrisis SA** (Jun 2016 - present)

- Responsible for the optical design and development of company's spectroscopic metrology systems, used for characterization of thin films and coatings.
- Assembling, characterizing and standardizing high precision optical instruments and custom optical bench set-ups, used for thickness and optical constants (n&k) determination of thin films.
- Application engineering work with customers to understand requirements and develop specifications. Definition of specs for customized projects through detailed knowledge of company's R&D capabilities.
- Providing technical support, consultation, instrument demonstrations, measurement reports, and on-site/remote installations to end users.
- Perform testing of operation and software compatibility of demo units, beta release products, and customer systems.
- Generating application notes, procedure manuals, SOPs and other training material for best knowledge sharing.

#### Post-Doc Researcher

**Institute of Nanoscience and Nanotechnology** (Jul 2017 - present)

Joint industrial postdoc research work between Thetametrisis and INN institute of NSCR "Demokritos", aiming to develop a novel optical metrology system for the precise characterization of 2D materials in terms of number-of-layers and refractive index determination. Extensive work on:

- assembling of custom microscope-based spectroscopic reflectometry set-ups in the UV/Vis/NIR range.
- material micro- & nano- fabrication/characterization (cleanroom based processes, Raman spectroscopy, XRR, photoluminescence, ellipsometry, etc.).
- modelling of material's optical properties using the transfer matrix method.
- investigating the correlation between measuring and modelling tools, and validating the accuracy and precision of the examined optical set-ups.

**Part of this research work contributed to launching Thetametrisis' novel product line of microscope-based reflectance micro-spectroscopic systems: "FR- $\mu$ Probe/Mic" series, with high commercial value in the semiconductor metrology market.**

Involved in the fabrication and/or characterization of devices on several side-projects as well, such as: Aluminum plasmonic and dielectric meta-surfaces, silicon nitride optical ring resonators, optical biosensors, FIB resist materials characterization (contrast curves and dissolution rate determination), time-resolved spectroscopy, etc.



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## Fellowships/Awards

### Post-doc Fellowship

**GSRT**

**2020**

15-month funding award through the National Strategic Reference Framework 2014-2020 of the General Secretariat of Research and Technology (GSRT) program: "Research support with an emphasis on young researchers" (5047824).

### Winner applicant

**ZEISS Semiconductor Manufacturing Technology**

**2019**

Winner applicant of the ZEISS "European Autumn School|Lithography Optics" event, taken place on November 29-30, 2019 in Oberkochen, Germany. Training and insight information were provided on EUV/DUV Lithography, Metrology for Semiconductor Optics, plus a tour on the ZEISS SMT production facilities .

### Finalist

**Edmund Optics**

**2019**

European regional finalist of the Edmund Optics Educational Award '19 .

### Industrial Post-doc Fellowship

**Stavros Niarchos Foundation**

**2017**

3-year funding award through the SNF Industrial Research Fellowship Program at NSRF "Demokritos" .

### Ph.D. Scholarship

**EPSRC**

**2011**

3½year phd research funding award through EPSRC grant (EP/M022757/1).

## Volunteering

Demonstrator at Light Express Roadshow, a free travelling roadshow sponsored by University of Southampton, aiming to promote Photonics and increase aspiration to prospective university students and families. (2014-2015)

## Membership

OSA - The optical society | SPIE - The international society for optics and photonics | IEEE - Institute of Electrical and Electronics Engineers

## Software Skills

### Programming

Python 3 | R | MATLAB |  $\LaTeX$  | G-code (familiar)

### Design/Graphics/Image

Autodesk-AutoCAD | Luxion-Keyshot | CorelDRAW | Adobe-Photoshop /Lightroom

### Other IT skills

Microsoft Office | Origin | Windows, Linux OSs + command line environment | Git

## Processes for Micro- and Nanofabrication

### Fabrication methods

Optical Contact photolithography | direct c.w. and pulsed laser writing | electric field poling | spin coating | thermal and e-beam evaporation | sputtering | wet etching | die saw | precision lap and polish.

### Characterization/Metrology methods

Optical and scanning electron microscopy (SEM) | spectroscopic ellipsometry and reflectometry | optical (3D profiler) and probe-based surface profilometry (Stylus, AFM) | four point probe resistivity measurements | electro-optical and spectral characterisation of waveguides, ring-resonators and plasmonic meta-surfaces.

## Languages

Greek (native) | English (fluent-ECPE) | French (basic-DELF A1)

## References

Available on request.