



# Fotis Fraggelakis

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**Date of birth:** 24/05/1988 | **Nationality:** Greek | **Gender:** Male | (+30) 6945728855 |

[fraggelakis@hotmail.com](mailto:fraggelakis@hotmail.com) | Peiniou 2, 71303, Heraklion, Greece

## ● WORK EXPERIENCE

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01/07/2020 – CURRENT – Heraclion, Greece

**POSTDOCTORAL RESEARCHER** – FOUNDATION OF RESEARCH AND TECHNOLOGY (FORTH)

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Postdoctoral researcher in FET Open Project [Biocombs4Nanofibers](#)

07/2019 – 06/2020

**POSTDOCTORAL RESEARCHER** – FOUNDATION OF RESEARCH AND TECHNOLOGY (FORTH)

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Special postdoctoral scholarship awarded from Stavros Niarchos Foundation

Heraklion, Greece

02/2016 – 02/2019

**PHD STUDENT, RESEARCH AND DEVELOPMENT ENGINEER** – ALPHANOV

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Talence, France

11/2017

**SECONDMENT** – ISTITUTO DI FOTONICA E NANOTECNOLOGIE (INF)-CNR U.O.S. BARI

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**Subject:** Laser processing of steel with double femtosecond pulses produced by birefringent crystals.

Bari, Italy

10/2017

**SECONDMENT** – BSH ELECTRODOMÉSTICOS ESPAÑA, S.A.

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**Subject:** Corrosion characterization of laser processed steel surface. Comparison of the effect of different pulse duration in corrosion resistance.

Zaragoza

05/2017

**SECONDMENT** – FRAUNHOFER IWS

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**Subject:** Processing of steel surfaces with Direct Light Interference Patterning using an industrial module.

Dresden, Germany

04/2014 – 11/2015

**RESEARCH UNDER FELLOWSHIP** – FORTH-IESL

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**Subject:** Double pulse irradiation study of silicon

Heraclion

## ● EDUCATION AND TRAINING

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01/03/2016 – 28/02/2019 – Bordeaux, France

**MARIE SKLODOWSKA-CURIE PH.D. FELLOWSHIP IN THE FRAMEWORK OF ITN LASER4FUN – ALPhANOV-IOA / CELIA/**  
University of Bordeaux

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*Director:* Inka Manek-Hönninger, Associate professor, University of Bordeaux

*Co-Director:* John Lopez, Research engineer, University of Bordeaux

*President:* Evelyne Fargin, Professor, University of Bordeaux

*Examiner:* Antonio Ancona, Professor, University of Bari

*Reviewer:* Jörn Bonse Bundesanstalt f. Materialforschung und -prüfung Berlin

*Reviewer:* Gert-Willem Römer, Professor, University of Twente

EQF level 8

01/10/2018 – 05/10/2018 – Bari, Italy

**PARTICIPATION IN THE INTERNATIONAL SCHOOL ON LASER MICRO/NANOSTRUCTURING AND SURFACE**  
**TRIBOLOGY – Politecnico Di Bari**

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21/08/2017 – 25/08/2017 – Enschede, Netherlands

**PARTICIPATION IN THE 2ND LASER4FUN SUMMER SCHOOL ON ADVANCED LASER PROCESSING – University of**  
Twente

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29/08/2016 – 02/09/2016 – Dresden, Germany

**PARTICIPATION IN THE 5TH INTERNATIONAL SUMMER SCHOOL ON TRENDS AND NEW DEVELOPMENTS IN LASER**  
**TECHNOLOGY – Technical University of Dresden**

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10/2014 – 02/2016 – Heraklion, Greece

**MASTER DEGREE IN MATERIALS SCIENCE AND TECHNOLOGY – University Of Crete**

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EQF level 7

04/2015 – 12/2015 – Heraklion, Greece

**MASTER THESIS – IESL FORTH**

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**Subject:** Influence of femtosecond pulse polarization and double pulse irradiation on the induced morphology on silicon surface.

10/2013 – 07/2014 – Heraklion, Greece

**BACHELOR THESIS – IESL FORTH**

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**Subject:** Study of the parameters which determine the surface nanostructure in silicon and CVD diamond and especially the influence of polarization.

Grade 10/10

09/2006 – 07/2014 – Heraklion, Greece

**DEGREE IN PHYSICS – University Of Crete**

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Main Subjects:

Classical Mechanics, Electromagnetism, Quantum Mechanics, Differential Equations, Introduction to Condensed Matter Physics

Very Good 6.77/10

09/2003 – 06/2006 – Kilkis, Greece

**UNIFIED UPPER SECONDARY SCHOOL CERTIFICATE – 2nd Unified Upper Secondary School of Kilkis**

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Degree Mark: 16,7/20

## ● LANGUAGE SKILLS

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**Mother tongue(s):** GREEK

**Other language(s):**

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
<b>ENGLISH</b>	C1	C1	C1	C1	C1
<b>FRENCH</b>	A2	A1	A2	A2	A1

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

## ● DIGITAL SKILLS

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Google Drive | Skype | Zoom | Google Docs | Facebook | Instagram | LinkedIn | Microsoft Office | Wolfram Mathematica | Origin Pro: proficient at scientific data processing | Gwyddion | Image J | Inkspace | NI LabVIEW(Basics)

## ● SKILLS

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### Job-related skills

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- Excellent communication skills
- Experienced in the use of industrial femtosecond laser
- Experienced in the use and maintenance of femtosecond lasers
- Seven-year experience in research environment
- Team work experience
- Experience in the use of: SEM, Lock In Amplifier, UHV Chamber, Phasmatophotometer (UV-VIS), Scanning Electron microscope (SEM), industrial DLIP Module (Fraunhofer IWS Dresden)

### Organisational skills

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Project management: Experience in organization of meetings & preparation of deliverables during PhD fellowship in Marie Skłodowska-Curie ITN [Laser4Fun](#).

### Personal Interests and Hobbies

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- Playing Music
- Hand-crafting (wood carving, painting, small scale sculpturing)
- Hiking

## ● RECOMENDATIONS

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### Recomendations

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#### Period 2019-2021 (Postdoc):

- Emmanuel Stratakis, Research Application Scientist, FORTH-IESL e-mail: stratak@iesl.forth.gr

#### Period 2016-2019 (PhD):

- Rainer Kling, Manager of laser Micromachining department, ALPhANOV, e-mail: Rainer.KLING@alphanov.com
- John Lopez, Researcher, CELIA University of Bordeaux-CNRS-CEA, e-mail: john.lopez@alphanov.com
- Inka-Manek Hönninger, Associate professor, CELIA University of Bordeaux-CNRS-CEA, e-mail: inka.manek-honninger@u-bordeaux.fr

#### Period 2014-2015 (MS):

- Dr. P.A. Loukakos, Assistant Researcher, FORTH-IESL, e-mail: loukakos@iesl.forth.gr

## ● PEER REVIEW PUBLICATIONS

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### Peer review publications

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The listed peer review publications have received in total **200 non-self citations**.  
The corresponding author's name of each article is underlined.

1. *Texturing metal surface with MHz ultra-short laser pulses.*

**Fraggelakis, F.**, Mincuzzi, G., Lopez, J., Manek-Hönniger, I. & Kling, R., *Opt. Express* **25**, 18131–18139 (2017).

2. *Control of periodic surface structures on silicon by combined temporal and polarization shaping of femtosecond laser pulses.*

**Fraggelakis, F.**, Stratakis, E. & Loukakos, P. A. *Appl. Surf. Sci.* **444**, 154–160 (2018).

3. *Generation of micro- and nano-morphologies on a stainless steel surface irradiated with 257 nm femtosecond laser pulses.*

**Fraggelakis, F.**, Mincuzzi, G., Manek-Hönniger, I., Lopez, J. & Kling, R., *RSC Adv.* **8**, 16082–16087 (2018).

4. *Controlling Micron and Submicron Scale Laser Induced Surface Structures on Stainless Steel with Industrial Femtosecond Lasers.*

**Fraggelakis, F.**, Mincuzzi, G., Lopez, J., Kling, R. & Manek-Hönniger, I. *J. Laser Micro/Nanoengineering* **13**, 206–210 (2018).

5. *Controlling 2D laser nano structuring over large area with double femtosecond pulses.*

**Fraggelakis, F.**, Mincuzzi, G., Lopez, J., Manek-Hönniger, I. & Kling, R. *Appl. Surf. Sci.* **470**, 677–686 (2019).

6. *On the interplay of DLIP and LIPSS upon ultra-short laser pulse irradiation.*

**Alamri, S.\***, **Fraggelakis, F.\***, Kunze, T., Krupop, B. & Mincuzzi, G. *Materials* **12**, 1018 (2019).

(\* Both authors contributed equally to this publication)

7. *Springtail-inspired triangular laser-induced surface textures on metals using MHz ultrashort pulses.*

Romano, J.M., Helbig, R., **Fraggelakis, F.**, Garcia-Giron, A., Werner, C., Kling, R., Dimov, S., *J. Micro Nano-Manufacturing* (2019).

8. *Double- and Multi-Femtosecond Pulses Produced by Birefringent Crystals for the*

*Generation of 2D Laser-Induced Structures on a Stainless Steel Surface.* **Fraggelakis, F.**, Giannuzzi, G., Gaudio, C., Manek-Hönniger, I., Mincuzzi, G., Ancona, A., Kling, R., *Materials* **12**, 1257 (2019).

9. *Short and long term surface chemistry and wetting behaviour of stainless steel with 1D and 2D periodic structures induced by bursts of femtosecond laser pulses.*

Giannuzzi, G., Gaudio, C., Di Mundo, R., Mirengi, L., **Fraggelakis, F.**, Kling, R., Lugarà, P. M., Ancona, A., *Appl. Surf. Sci.* **494**, 1055-1065 (2019).

10. *Tailoring submicrometer periodic surface structures via ultrashort pulsed direct laser interference patterning.*

**F. Fraggelakis**, G.D. Tsibidis, E. Stratakis, *Phys. Rev. B.* 054105 (2021) 1–15. doi:10.1103/PhysRevB.103.054105.

11. *Ultrashort pulsed laser induced complex surface structures generated by tailoring the melt hydrodynamics.*

**F. Fraggelakis**, G.D. Tsibidis, E. Stratakis, accepted for publication in Opto-Electronic Advances

## ● ORAL PRESENTATIONS IN CONFERENCES

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### Oral presentations in Conferences

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The name of the presenting author is underlined.

1. **SPIE Photonics west 2017**

*Title: Ultrashort pulse laser-induced texturing of large area metal surfaces by full exploitation of process parameters: Challenges and perspectives (10092-37).* **Fraggelakis, F.**, Mincuzzi, G., Lopez, J., Manek-Hönninger, I., Rainer, K., Laser-based Micro- and Nanoprocessing XI. Thursday 2 February 2017.

2. **EMRS Spring meeting 2018**

*Novel, Homogeneous, Laser-induced 2D Microstructures Obtained with Double Femtosecond Pulses* **Fraggelakis, F.**, Mincuzzi, G., Lopez, J., Manek-Hönninger, I., Rainer, K., (X.VIII.5). Symposium X. Tuesday 19 June 2018.

3. **Laser Precision Microfabrication Symposium (LPM) 2018**

*Controlling and upscaling laser induced surface structuring.* **Fraggelakis, F.**, Mincuzzi, G., Lopez, J., Rainer, K., Manek-Hönninger, I., Laser surface micro/nano structuring. Tuesday 26 June 2018

4. **EMRS 2021**

*Tailored Sub-micrometer Surface Structures via Spatiotemporal Femtosecond Pulse Shaping.* **Fraggelakis, F.**, George Tsididis, Emmanuel Stratakis. session H6b. Tuesday 3 June 2021.

5. **CLEO/Europe-EQEC 2021**

*Tailored Sub-micrometer Periodic Surface Structures via Ultrashort Pulsed Direct Laser Interference Patterning.* **Fraggelakis, F.**, George Tsididis, Emmanuel Stratakis. Session CM-5.2 Thursday June 24 2021.

My work has been presented also in:

6. **CLEO/Europe-EQEC 2017**

*Controlling laser-induced features morphology on stainless steel surfaces using high average power femtosecond laser.* **Fraggelakis, F.**, Mincuzzi, G., Lopez, J., Manek-Hönninger, I., Rainer, K., CLEO®/Europe-EQEC 2017. Thursday 29 June 2017

7. **SPIE Photonics west 2018**

*2D laser induced periodic surface structures with double cross-polarized pulses.* **Fraggelakis, F.**, Mincuzzi, G., Lopez, J., Manek-Hönninger, I., Rainer, K., Laser-based Micro- and Nanoprocessing XI. Wednesday 31 January 2018

## ● CONFERENCE PROCEEDING PUBLICATIONS

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### Conference proceeding publications

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1. *Ultrashort pulse laser induced texturing of stainless steel at 1 MHz and high average power: impact of process parameters.*

**Fraggelakis, F.**, Mincuzzi, G., Lopez, J., Manek-hönninger, I. & Kling, R. Laser-based Micro- Nanoprocessing XI10092, 1–7 (2017).

2. *Controlling laser-induced features morphology on stainless steel surfaces using high average power femtosecond laser.*

**Fraggelakis, F.**, Mincuzzi, G., Lopez, J., Manek-Hönninger, I. & Kling, R. *Eur. Conf. Lasers Electro-Optics Eur. Quantum Electron. Conf.* (2017).

3. *2D laser induced periodic surface structures with double cross-polarized pulses.*

**Fraggelakis, F.**, Mincuzzi, G., Lopez, J., Manek-Hönninger, I. & Kling, R. *Laser-based Micro- Nanoprocessing XII* 22 (2018).

4. *Controlling micron and submicron scale laser induced surface structures on stainless steel with industrial femtosecond lasers.*

**Fraggelakis, F.**, Mincuzzi, G., Lopez, J., Kling, R. & Manek-Hönninger, I. *Proc. LPM2018* (2018)