

# Curriculum Vitae

## Ioannis Ftilis

### Personal Data

- First name: Ioannis
- Last name: Ftilis.
- Position: Assistant Professor at Dpt. of Electronic Engineering of Hellenic Mediterranean University, “ Optoelectronic plasma metrology in pulsed power electronic devices”
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### Studies

- 2002 Bachelor in Physics  
Physics Department, University of Patras, Greece
- 2004 Master in Photonics  
Physics Department, University of Ioannina, Greece
- 2018 Master in Plasma Physics and Applications  
School of Applied Science, Technological Educational Institute of Crete, Greece
- 2009 PhD in Non-Linear Optics  
Physics Department, University of Patras, Greece  
Thesis title: «Two-photon absorption of novel symmetric organic molecules and two-photon polymerization»

### Scholarships/Awards

- 2002-2003 Fellowship by the Postgraduate Program in Physics of the department of Physics, at the University of Ioannina (financing EPEAEK, Europe-Greece)
- 2004-2007 Fellowship by the National Scholarship Foundation of Greece for doctorate thesis elaboration.

### Languages

- Greek, native language
- English, Level B2

## **Seminars and Lectures Attendance**

- Training Course “Applications of Light Microscopy in Biomedical Research”, University of Ioannina, BRI-FORTH, Greek Network for Light Microscopy, 12-16 July 2004, Ioannina, Greece
- Lectures in Chemistry and Physics devoted to “The Nanotechnology Revolution”, The Onassis Foundation Science Lecture Series, FORTH, 19-23 July 2004, Heraklion, Greece

## **Computer Knowledges**

- Windows, Office, OriginPro, PhotoShop, DIMAS (Seismology)
- Labview, GLAD (optics), Fortran, Matlab
- Hardware, networks

## **Other Skills**

- Skills in design and develop of optical experiments. Experience in interferometry, shadowgraphy and schlieren imaging techniques, in pump-probe experiments utilizing ultrafast laser, in diagnostics of high energy photons. Skills in programming and configuration of devices for the automatization of experiments.
- Experience on pulsed power devices for plasma generation from solid and gas targets (x-pinch, plasma focus). Experience on working with high vacuum systems and setting up experiments in vacuum.
- Trained to operate, adjust and maintain the TW-class power ultrafast laser system installation at the research Centre for Plasma Physics and Lasers (CPPL) in Greece. Skills in using ultrafast pulses measurement systems: BONSAI (Amplitude-technologies) for duration, WIZZLER (Fastlite) for duration-phase, SEQUOIA (Amplitude-technologies) for pulse contrast,
- Working experience on femtosecond laser (Tsunami, Spectra Physics), picosecond laser (SL312, EKSPLA), gamma ray multichannel analyzer (Cannberra, ProSpect), motion controller (ESP, Newport), data acquisition hardware (National Instrument), optical fiber fusion splicer (Fujikura), optical analyzer (Anritsu), picoammeter (Keithley), acoustic emission recording and analysis system (Physical Acoustics, Mistras), dielectric spectroscopy (Novocontrol).
- Skills in implement educational experiment setups in physics and fundamental electronics. Experience on PASCO educational hardware and software.

## **Work Experience**

- 2000- 2002 Teaching Assistant (unpaid) at laboratory exercises of the course “Principals of Laser Operation”, Physics Department, University of Patras.

- 10/2004-12/2004, 10/2005-12/2005, 02/2006-12/2007  
Computer technician and programmer at the enterprise of informatics systems & telecommunications “Wizards Solutions”, Greece
- 10/2004-12/2004 Teaching Assistant at laboratory lessons: i) Laser, ii) Physics for Biologists, at the Physics Department of University of Patras.
- 11/2004-12/2004, 6/2005-8/2005, 07/2006-09/2006, 04/2007-07/2007  
Part of the research group of the program “Reformation of the undergraduate courses program” at the Physics Department of University of Patras, financing EPEAEK II (Europe-Greece)
- 10/2005-12/2005 Teaching Assistant at laboratory lessons: i) Laser, ii) Physics for Geologists, at the Physics Department of University of Patras.
- 10/2005-04/2006 Part of the research group of the research program «Pythagoras II» entitled “Non-linear absorption study of new materials by Z-scan technique” (B795.038), financing EIIEAEK II (Europe-Greece)
- 10/2007-12/2007, 10/2008-12/2008 Teaching Assistant at laboratory lesson Laser, at the Physics Department of University of Patras.
- 10/2010-06/2011 Adjunct educator at Technol. Educ. Inst. of Crete, Greece
- 10/2011-02/2012 Adjunct educator at Technol. Educ. Inst. of Crete, Greece
- 10/2012–06/2013 Adjunct educator at Technol. Educ. Inst. of Crete, Greece
- 12/2012–04/2013, 11/2015 Participation at the research program “Thales” (code MIS 380208) entitled “Integrated understanding of seismicity, using innovative methodologies of fracture mechanics along with earthquake and non extensive statistical physics - application to the geodynamic system of the Hellenic arc” (SEISMO FEAR HELLARC), at Technol. Educ. Inst. of Crete in Greece, funded from Greek-European program ESPA
- 10/2013–07/2014 Adjunct educator at Technol. Educ. Inst. of Crete, Greece
- 01/2014–01/2015 Post-doc researcher at the research program “National Research Infrastructure for the HiPER Project” at Technol. Educ. Inst. of Crete, funded from Greek-European Union program ESPA
- 04/2014–09/2015 Participation (unpaid) at the research group of the research program “Archimedes III” (MIS 380353, subwork 16) “Design And Development Neutron Source With Application In Explosions Detection” at Technol. Educ. Inst. of Crete, funded from Greek-European Union (ESPA)
- 10/2014–07/2015 Adjunct educator at Technol. Educ. Inst. of Crete, Greece
- 01/2015–12/2015 Post-doc researcher at the research program “National Research Infrastructure for the HiPER Project” at Technol. Educ. Inst. of Crete, funded from Greek-European Union program ESPA
- 10/2015–06/2016 Adjunct educator at Technol. Educ. Inst. of Crete, Greece
- 09/2016–10/2016 Post-doc researcher at the project “Centre of Plasma Physics and Laser (CPPL acts)” of the Technol. Educ. Inst. of Crete, Greece
- 10/2016–02/2017 Adjunct educator at Technol. Educ. Inst. of Crete, Greece
- 03/2017–06/2017 Teaching Fellow, at Technol. Educ. Inst. of Crete, Greece
- 10/2017–02/2018 Teaching Fellow, at Technol. Educ. Inst. of Crete, Greece

- 10/2017–09/2018 Post-doc researcher at the project “Strengthening of the Competitiveness of the Region of Crete in medical applications of secondary plasma radiation from ultra-power laser”, at the Technol. Educ. Inst. of Crete, Greece
- 4/2018 – 06/2018 Teaching Fellow, at Technol. Educ. Inst. of Crete, Greece
- 6/2018-12/2018: Post-doc researcher at the project “Synergy of ELI - LASERLAB Europe, HiPER & IPERION-CH.gr” (HELLAS-CH), at the Technol. Educ. Inst. of Crete, Greece
- 10/2018 – 06/2019 Teaching Fellow, at Technol. Educ. Inst. of Crete, Greece
- 11/2019 – today: Assistant Professor (tenure) at the dept. of Electronic Engineering of the Hellenic Mediterranean University, Greece

### **Teaching Experience**

#### **Bachelor level courses in:**

- Physics
- Electrical Measurements, Sensors & Instrumentations
- Discrete Mathematics
- Special Chapters in Optoelectronics and Lasers
- Advance Optoelectronics Subjects
- Optoelectronic Plasma Devices
- Data mining
- Human-Computer Communication

#### **Bachelor level laboratory courses in:**

- |                            |  |
|----------------------------|--|
| • Physics                  | • Electrical and Electronic Measurements |
| • Metrology                | • Electronics of Measurement Instruments |
| • Wave Physics             | • Electrical Circuits                    |
| • Optoelectronics & Laser  | • Image and Sound Processing             |
| • Technical Thermodynamics | • Environmental Geotechnology            |
| • Electronic Elements      |  |

#### **Master level courses in:**

- Laser Fundamentals
- Modern Topics in Lasers & Plasmas (partially)
- Laser Spectroscopy (partially)

### **Seminars**

- 04/2018 Plasma from power electronic devices at postgraduate students of dept. of Electronics Engineering of HMU.
- 07/2018 Laboratory courses in “TW ultrafast laser” and “Laser matter interactions” at the intensive postgraduate school PowerLaPs of the Erasmus+ program.

- 07/2018 Laboratory courses in “Laser matter interaction and diagnostics for TW laser” and “Plasma Pinch diagnostics” at the intensive postgraduate school PowerLaPs of the Erasmus+ program.

## **Research Projects**

- Project “Reformation of the undergraduate courses program at the Physics Department of University of Patras» (code B.162.003). Participation in the research group for creation of new laboratory exercises in Physics and particularly:
  - ❖ Gathering information of courses programs from department of physics aboard
  - ❖ Gathering of educational material for new laboratory exercises
  - ❖ Processing of the new laboratory educational material
  - ❖ Technical support and testing of the procedures of the new laboratory exercises
- Program “Pythagoras I”, project entitled “Non-linear absorption study of new materials by Z-scan technique” (B795.038), Participation in the research group for the taking, grouping and processing of the measurements for the evaluation of the multiphoton absorption coefficient of the studied materials.
- Program “Thales”, project entitled “Integrated understanding of seismicity, using innovative methodologies of fracture mechanics along with earthquake and non extensive statistical physics - application to the geodynamic system of the Hellenic arc” (SEISMO FEAR HELLARC) (code MIS 380208). Participation in the experiments of acquiring electrical signals and acoustical emissions in rocks under mechanical loading, in the measurements processing, in spatiotemporal representation of the measurements and in the publication of the results. Development of software (in LabView) for the control, automation and recording of the measurements.
- Program “National Research Infrastructure for the HiPER Project”. Participation in the design and development of experimental layouts with the use of ultrashort laser pulses and of diagnostics setups for the infrastructures needs as well as in the co-writing of relevance technical report.
- Program “Archimedes III” (MIS 380353, subwork 16), project entitled “Design and development of neutron source with application to detection of explosives materials” participation in the experimental procedures for the study of the plasma dynamics and the generated electromagnetic and neutron emission.
- Project “Interdepartmental Center for Plasma Physics & Lasers (CPPL acts)”. Participation in the design and development of optical and diagnostic setups with ultrashort laser pulses.
- Program “Strengthening of the Competitiveness of the Region of Crete in medical applications of secondary plasma radiation - from ultrapower laser”, subwork 1 entitled “Study / design / development of particle radiation production station”, for the adjustment and diagnosis of the ultrashort pulses of ultrapower laser, the design and development of the station and carrying out

the initial experiments, involving the interaction of the laser pulses with solid targets.

- Program Synergy of ELI-LASERLAB Europe, HiPER & IPERION-CH.gr” (HELLAS-CH), subwork 2 “Participation of TEI of Crete / CPPL at the project HELLAS-CH”, work-package 3 “Upgrading and Implementation of Access Infrastructure” for the role/responsibility of the interaction of ultrashort laser with matter and related diagnostic devices, plasma diagnostics, as well as the operation, maintenance and proper configuration of ultra-power (> 30TW) ultrashort pulsed laser systems.
- Program EUROfusion, project ENR-IFE.01.CEA-02 “Advancing shock ignition for direct-drive inertial fusion”. Participation in the experiments for laser ablation studies and for laser proton acceleration and their transport in matter.

### **Research Interests**

- Plasma diagnostics and applications
- Laser-matter interaction
- Non-linear absorption, two-photon microscopy and polymerization
- Time-resolved spectroscopy
- Optical and electrical characterization of materials
- Non-destructive testing
- Fiber optic lasers, fiber optic sensors

### **Scientific Publications**

Journal Articles: 24 Conference Articles: 16 Conference Presentations: 21  
Citations: >260 h-index: 8 (from Scopus)

#### **A. Journal Articles**

**A1.** “A two-photon absorption study of fluorene and carbazole derivatives. The role of the central core and the solvent polarity”,  
I. Ftilis, M. Fakis, I. Polyzos, V. Giannetas, P. Persephonis, P. Vellis and J. Mikroyannidis,  
*Chemical Physics Letters*, 447 (2007) pp.300-304  
DOI: [10.1016/j.cplett.2007.09.044](https://doi.org/10.1016/j.cplett.2007.09.044) Impact Factor:2.328

**A2.** “Strong two photon absorption and photophysical properties of symmetrical chromophores with electron accepting edge substituents”,  
I. Ftilis, M. Fakis, I. Polyzos, V. Giannetas, P. Persephonis and J. Mikroyannidis  
*Journal of Physical Chemistry A*, 112 (2008) pp.4742-4748  
DOI: [10.1021/jp711896f](https://doi.org/10.1021/jp711896f) Impact Factor:2.781

- A3.** “Photophysics and two-photon absorption of a series of quadrupolar and tribranched molecules. The role of the edge substituent”,  
M. Fakis, I. Ftilis, S. Stefanatos, P. Vellis, J. Mikroyannidis, V. Giannetas, P. Persephonis  
*Dyes and Pigments*, 81 (2009) pp.63-68  
DOI: [10.1016/j.dyepig.2008.08.014](https://doi.org/10.1016/j.dyepig.2008.08.014) Impact Factor: 4.889
- A4.** “Benzothiazole-based fluorophores of donor- $\pi$ -acceptor- $\pi$ -donor type displaying high two-photon absorption”,  
V. Hrobarikova, P. Hrobarik, P. Gajdos, I. Ftilis, M. Fakis, P. Persephonis, P. Zahradnik  
*Journal of Organic Chemistry*, 75 (2010) pp.3053-3068  
DOI: [10.1021/jo100359q](https://doi.org/10.1021/jo100359q) Impact Factor: 4.354
- A5.** “Two-photon polymerization of a diacrylate using fluorene photoinitiators–sensitizers”,  
I. Ftilis, M. Fakis, I. Polyzos, V. Giannetas and P. Persephonis  
*J. of Photochemistry and Photobiology A: Chemistry*, 215 (2010) pp.25-30  
DOI: [10.1016/j.jphotochem.2010.07.016](https://doi.org/10.1016/j.jphotochem.2010.07.016) Impact Factor: 4.291
- A6.** “Complex electrical conductivity measurements of a KTB amphibolite sample at elevated temperatures”  
V. Saltas, V. Chatzistamou, D. Pentari, E. Paris, D. Triantis, I. Ftilis, F. Vallianatos  
*Materials Chemistry and Physics*, 139 (2013) p.p. 169-175  
DOI: [10.1016/j.matchemphys.2013.01.016](https://doi.org/10.1016/j.matchemphys.2013.01.016) Impact Factor: 4.094
- A7.** “A combined complex electrical impedance and acoustic emission study in limestone samples under uniaxial loading”  
V. Saltas, I. Ftilis, F. Vallianatos  
*Tectonophysics*, 637 (2014) p.p. 198–206  
DOI: [10.1016/j.tecto.2014.10.011](https://doi.org/10.1016/j.tecto.2014.10.011) Impact Factor: 3.933
- A8.** “The influence of the solid to plasma phase transition on the generation and the dynamics of plasma instabilities”  
E. Kaselouris, V. Dimitriou, I. Ftilis, A. Skoulakis, G. Koundourakis, E.L. Clark, M. Bakarezos, I.K. Nikolos, N.A. Papadogiannis and M. Tatarakis  
*Nature Communications* **8** (2017) #1713.  
DOI: [10.1038/s41467-017-02000-6](https://doi.org/10.1038/s41467-017-02000-6) Impact Factor: 17.69
- A9.** “Preliminary investigation on the use of low current pulsed power Z-pinch plasma devices for the study of early stage plasma instabilities”  
E. Kaselouris, V. Dimitriou, I. Ftilis, A. Skoulakis, G. Koundourakis, E.L. Clark, J. Chatzakis, M. Bakarezos, I.K. Nikolos, N.A. Papadogiannis and M. Tatarakis, *Plasma Physics and Controlled Fusion* **60** (2018) #014031  
DOI: [10.1088/1361-6587/aa8ab0](https://doi.org/10.1088/1361-6587/aa8ab0) Impact Factor: 2.532

- A10.** “Innovative Education and Training in high power laser plasmas (PowerLaPs) for plasma physics, high power laser-matter interactions and high energy density physics - Theory and experiments”, J. Pasley, G. Andrianaki, A. Baroutsos, D. Batani, E. P. Benis, M. Borghesi, E. Clark, D. Cook, E. D'Humieres, V. Dimitriou, B. Dromey, M. Ehret, I. Ftilis et al., High Power Laser Sci. Eng., 7 (2019) e23  
DOI: [10.1017/hpl.2019.7](https://doi.org/10.1017/hpl.2019.7) Impact Factor: 5.943
- A11.** “Innovative education and training in high power laser plasmas (PowerLaPs) for plasma physics, high power laser matter interactions and high energy density physics: experimental diagnostics and simulations”, J. Pasley, G. Andrianaki, A. Baroutsos, D. Batani, E. P. Benis, A. Ciardi, D. Cook, V. Dimitriou, B. Dromey, I. Ftilis et al, High Power Laser Sci. Eng., 8 (2020) e5  
DOI: [10.1017/hpl.2020.4](https://doi.org/10.1017/hpl.2020.4) Impact Factor: 5.943
- A12.** “The importance of laser pulse-ablator interaction dynamics prior to ablation plasma phase in inertial confinement fusion studies”, E. Kaselouris , I. Ftilis, A. Skoulakis , Y. Orphanos, G. Koundourakis , E.L. Clark , J. Chatzakis, M. Bakarezos, N.A. Papadogiannis, V. Dimitriou and M. Tatarakis, Philosophical Transactions A, 378 (2020) 20200030  
DOI: [10.1098/rsta.2020.0030](https://doi.org/10.1098/rsta.2020.0030) Impact Factor: 4.019
- A13.** “A numerical study on laboratory plasma dynamics validated by low current x-pinch experiments”, G. Koundourakis, A. Skoulakis, E. Kaselouris, I. Ftilis, E. L. Clark, J. Chatzakis, M. Bakarezos, N. Vlahakis, N. A. Papadogiannis, V. Dimitriou, M. Tatarakis, Plasma Phys. Controlled Fusion, 62 (2020) 125012  
DOI: [10.1088/1361-6587/abbef](https://doi.org/10.1088/1361-6587/abbef) Impact Factor: 2.532
- A14.** “Downscaled Finite Element Modeling of Metal Targets for Surface Roughness Level under Pulsed Laser Irradiation”, E. Kaselouris, K. Kosma, Y. Orphanos, A. Skoulakis, I. Ftilis, A. P. Markopoulos, M. Bakarezos, M. Tatarakis, N. A. Papadogiannis, V. Dimitriou, Appl. Sci., 11 (2021) 1253  
DOI: [10.3390/app11031253](https://doi.org/10.3390/app11031253) Impact Factor: 2.838
- A15.** “High intensity laser driven secondary radiation sources using the ZEUS 45 TW laser system at the Institute of Plasma Physics and Lasers of the Hellenic Mediterranean University Research Centre", E.L. Clark, A. Grigoriadis, S. Petrakis, I. Tazes, G. Andrianaki, A. Skoulakis, Y. Orphanos, E. Kaselouris, I. Ftilis, J. Chatzakis, E. Bakarezos, V. Dimitriou, E.P. Benis, N.A. Papadogiannis, and M. Tatarakis, High Power Laser Science and Engineering 1 (2021) e53  
DOI: [10.1017/hpl.2021.38](https://doi.org/10.1017/hpl.2021.38) Impact Factor: 5.943
- A16.** “Instability growth mitigation study of a dielectric coated metallic wire in a low current Z-pinch configuration”, Kaselouris, E., Tamiolakis, G., Ftilis, I., Skoulakis, A., Dimitriou, V., & Tatarakis, M. , Plasma Phys. Controlled



- Fusion, 63 (2021), 085010.  
DOI: [10.1088/1361-6587/ac0112](https://doi.org/10.1088/1361-6587/ac0112) Impact Factor: 2.532
- A17.** “Characterization of an X-ray Source Generated by a Portable Low-Current X-Pinch”, A. Skoulakis, E. Kaselouris, A. Kavroulakis, C. Karvounis, I. Ftilis, J. Chatzakis, V. Dimitriou, N. Papadogiannis, M. Tatarakis, Applied Sciences, 11 (2021) 11173.  
DOI: [10.3390/app112311173](https://doi.org/10.3390/app112311173) Impact Factor: 2.838
- A18.** “High performance simulations of a single X-pinch”, A. Skoulakis, G. Koundourakis, A. Ciardi, E. Kaselouris, I. Ftilis, J. Chatzakis, M. Bakarezos, N. Vlahakis, N.A. Papadogiannis, M. Tatarakis and V. Dimitriou, Plasma Phys. Controlled Fusion, 64 (2022) 025003.  
DOI: [10.1088/1361-6587/ac3deb](https://doi.org/10.1088/1361-6587/ac3deb) Impact Factor: 2.532
- A19.** “Improving a High-Power Laser Based Relativistic Electron Source: The Role of Laser Pulse Contrast and Gas Jet Density Profile”, A. Grigoriadis, G. Andrianaki, I. Ftilis, V.M.s Dimitriou, E.L. Clark, N.A. Papadogiannis, E.P. Benis and M. Tatarakis. Plasma Phys. Controlled Fusion, 64 (2022) 044007.  
DOI: [10.1088/1361-6587/ac4b06](https://doi.org/10.1088/1361-6587/ac4b06) Impact Factor: 2.532
- A20.** “Polymer-Gel Radiation Dosimetry of Laser-Based Relativistic Electron Sources for Biomedical Applications: First Qualitative Results and Experimental Challenges”, I. Ftilis, A. Grigoriadis, I. Tazes, S. Petrakis, G. Andrianaki, V. Dimitriou, E. Bakarezos, E. P. Benis, I. Tsiapa, T. Boursianis, G. Kalaitzakis, G. Bontzos, D. A. Liakopoulos, E. Pappas, E. T. Detorakis, E. L. Clark, T. G. Maris, N. A. Papadogiannis, M. Tatarakis. Front. Phys. 10 (2022) 727511.  
DOI: [10.3389/fphy.2022.727511](https://doi.org/10.3389/fphy.2022.727511) Impact Factor: 3.718
- A21.** "A modified modular multilevel converter topology trigger generator for a pseudospark switch.", A. Petridi, G. Chatzipetrakis, A. Skoulakis, I. Ftilis, M. Tatarakis, J. Chatzakis. Rev. Sci. Instrum. 93 (2022) 064711.  
DOI: [10.1063/5.0088927](https://doi.org/10.1063/5.0088927) Impact Factor: 1.843
- A22.** “A computational study on the optical shaping of gas targets via blast wave collisions for magnetic vortex acceleration”, I. Tazes, S. Passalidis, E. Kaselouris, I. Ftilis, M. Bakarezos, N. A. Papadogiannis, M. Tatarakis, V. Dimitriou, High Power Laser Sci. Eng. 10 (2022) e31  
DOI: [10.1017/hpl.2022.16](https://doi.org/10.1017/hpl.2022.16)
- A23.** “Review of Fluorescence Spectroscopy in Environmental Quality Applications”, D.-E. Zacharioudaki, I. Ftilis, M. Kotti. Molecules 27 (2022) 4801.  
DOI: [10.3390/molecules27154801](https://doi.org/10.3390/molecules27154801) Impact Factor: 4.927

**A24.** “Progress on the electro-thermo-mechanical instability and its role as seed on plasma instabilities”, E. Kaselouris, A. Skoulakis, V. Dimitriou, I. Ftilis, J. Chatzakis, M. Bakarezos, N. A. Papadogiannis, M. Tatarakis. Plasma Phys. Controlled Fusion, 64 (2022) 105008.

DOI: [10.1088/1361-6587/ac8a15](https://doi.org/10.1088/1361-6587/ac8a15)

Impact Factor: 2.532

## **B. Conference Articles**

**B01.** “Experimental and numerical study of the initial stages of explosion of thick single wire z-pinch”, E. Kaselouris, V. Dimitriou, A. Skoulakis, I. Ftilis, Y. Orphanos, I.K. Nikolos, E. Bakarezos, N.A. Papadogiannis and M. Tatarakis, 41st EPS Conference on Plasma Physics (proceedings vol. 38F, P4.114, ISBN 2-914771-90-8), Berlin, Germany, 23-27 June 2014

**B02.** “Experimental and numerical investigation of the early time dynamics of single wire plasma explosions”, I. Ftilis, A. Skoulakis, E. Kaselouris, I.K. Nikolos, M. Bakarezos, N.A. Papadogiannis, V. Dimitriou and M. Tatarakis, 42nd European Physical Society Conference on Plasma Physics (proceedings vol39E, P1.224, ISBN 2-914771-98-3), Lisbon, Portugal, 22-26 June, 2015

**B03.** “Finite element study of the initial stages of explosion of single wire z-pinch validated by experiments”, E. Kaselouris, V. Dimitriou, A. Skoulakis, I. Ftilis, I.K. Nikolos, E. Bakarezos, N.A. Papadogiannis and M. Tatarakis, 8th GRACM International Congress on Computational Mechanics (proceedings volume ISBN: 978-960-9439-36-7), Volos, 12-15 July, 2015

**B04.** “Diagnosing the initial stages from solid to plasma phase for dense plasma explosions”, I. Ftilis, A. Skoulakis, E. Kaselouris, I.K. Nikolos, E. Bakarezos, N.A. Papadogiannis, V. Dimitriou and M. Tatarakis, 1st EPs Conference on Plasma Diagnostics - ECPD2015, Frascati (Rome), Italy, 14-17 April 2015. Proceedings of Science 240 (2016) 127

DOI: [10.22323/1.240.0127](https://doi.org/10.22323/1.240.0127)

**B05.** “Experimental and numerical investigation of the plasma dynamics and jet formation in low current table-top X-pinch plasma devices“, G. Koundourakis, A. Skoulakis, I. Ftilis, V. Dimitriou, E. Bakarezos, N.A. Papadogiannis, E.L. Clark, N. Vlahakis and M. Tatarakis, International Conference “Science in Technology, SCinTE”, Athens, Greece, 5-7 November 2015.

**B06.** “Acoustic and electrical emissions from sandstone under uniaxial compression”, V. Saltas, I. Ftilis, J. P. Makris and F. Vallianatos, International Conference “Science in Technology, SCinTE”, Athens, Greece, November 5-7, 2015

**B07.** “Simulations of laser assisted machining and conventional cutting of AISI H-13 steel”, E. Kaselouris, T. Papadoulis, A. Skoulakis, A. Baroutsos, I. Ftilis,

Y. Ophanos, M. Bakarezos, N. Papadogiannis, M. Tatarakis and V. Dimitriou, 9th International Congress on Computational Mechanics (GRACM 2018), Chania, Greece, 4-6 June 2018  
ISBN 978-618-81537-5-2  
URI: <https://dias.library.tuc.gr/view/78635>

- B08** “Preliminary computational study of plasma dynamic evolution produced by low current table-top pinch plasma devices”, A. Skoulakis, G. Koundourakis, E. Kaselouris, I. Ftilis, E. Clark, N. Vlahakis, M. Bakarezos, N. Papadogiannis, V. Dimitriou, M. Tatarakis, 9th International Congress on Computational Mechanics (GRACM 2018), Chania, Greece, 4-6 June 2018  
ISBN 978-618-81537-5-2  
URI: <https://dias.library.tuc.gr/view/78635>
- B09.** “Analysis of the heat affected zone and surface roughness during laser micromachining of metals” , E. Kaselouris, A. Skoulakis, Y. Orphanos, K. Kosma, T. Papadoulis, I. Ftilis, E. Clark, A.P. Markopoulos, M. Bakarezos, N.A. Papadogiannis, M. Tatarakis, and V. Dimitriou, 18th International Conference on Fracture and Damage Mechanics - FDM, Rhodes, Greece, 16-18 September 2019  
Key Engineering Materials, Vol. 827 (2020) pp 122-127  
DOI: [10.4028/www.scientific.net/KEM.827.122](https://doi.org/10.4028/www.scientific.net/KEM.827.122)
- B10.** “Dynamics of the heat affected zone and induced strains in laser machining below ablation threshold”, E. Kaselouris, A. Skoulakis, I. Ftilis, Y. Orphanos, I. Tazes, K. Kosma, M. Bakarezos, N. Papadogiannis, M. Tatarakis, V. Dimitriou,  
IOP Conf. Ser.: Mater. Sci. Eng., 916 (2020) 012050  
DOI: [10.1088/1757-899x/916/1/012050](https://doi.org/10.1088/1757-899x/916/1/012050)
- B11.** “On the micro-modelling of surface roughness in pulsed laser machining” , E. Kaselouris, Y. Orphanos, K. Kosma, A. Skoulakis, I. Ftilis, M. Bakarezos, N. Papadogiannis, M. Tatarakis, V. Dimitriou  
IOP Conf. Ser.: Mater. Sci. Eng., 1037 (2021) 012007  
DOI: [10.1088/1757-899X/1037/1/012007](https://doi.org/10.1088/1757-899X/1037/1/012007)
- B12.** I. Tazes , G. Andrianaki, A. Grigoriadis, S. Passalidis, A. Skoulakis, E. Kaselouris, E. Vrouvaki, J. Chatzakis, I. Ftilis, M. Bakarezos, E.P. Benis, V. Dimitriou, N.A. Papadogiannis and M. Tatarakis, “Optical shaping of high-pressure gas-jet targets for proton acceleration experiments in the near-critical density regime”, 48th EPS Conference on Plasma Physics, (online), 27 June – 1 July 2022
- B13.** E. Kaselouris, A. Skoulakis, I. Tazes, Y. Orphanos, I. Ftilis, M. Bakarezos, N. A. Papadogiannis, V. Dimitriou and M. Tatarakis, “Preliminary study of early time dynamics during pulsed laser interaction with a CH ablator target”, 48th EPS Conference on Plasma Physics, (online), 27 June – 1 July 2022

- B14.** G. Andrianaki, A. Grigoriadis, I. Tazes, I. Ftilis, V. Dimitriou, E. P. Benis, J. Nicolos , N. Papadogiannis, M. Tatarakis, “The design and performance of an asymmetrical nozzle in Laser Wake Field electron acceleration”, 48th EPS Conference on Plasma Physics, (online), 27 June – 1 July 2022
- B15.** G. Andrianaki, A. Grigoriadis, I. Tazes, **I. Ftilis**, V. Dimitriou, E.P. Benis, I.K. Nikolos, N.A. Papadogiannis and M. Tatarakis, “Custom-made 3d printed nozzles for Laser Wakefield Acceleration (LWFA) experiments in the Institute of Plasma Physics and Lasers (IPPL), Proceedings of the 3rd International Conference in Electronic Engineering, Information Technology & Education EEITE2020, Chania, Greece, 12-14 October 2020  
<https://eeite2022.hmu.gr/eeite2022-proceedings-2>
- B16.** I. Tazes, S. Passalidis G. Andrianaki, A. Grigoriadis, S. Petrakis, A. Skoulakis, Y. Orphanos, E. Kaselouris, **I. Ftilis**, E.L. Clark, E. Bakarezos, E. P. Benis, V. Dimitriou, N. A. Papadogiannis and M. Tatarakis, “Particle Acceleration and Radiation Emission Studies at IPPL”, Proceedings of the 3rd International Conference in Electronic Engineering, Information Technology & Education EEITE2020, Chania, Greece, 12-14 October 2020  
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### C. Conference Presentations

- C01.** I. Ftilis, I. Polyzos, M. Fakis, G. Tsigaridas, V. Giannetas, P. Persephonis, I. Mikroyiannidis, "New two-photon absorbing oligofluorene derivatives. The role of solvent-solute interactions", 3rd Workshop on Nanosciences & Nanotechnologies, Thessaloniki, Greece, 10-12 July 2006
- C02.** G. Tsigaridas, I. Polyzos, D. Anestopoulos, I. Ftilis, V. Giannetas and P. Persephonis, “Efficient calculation of the nonlinear absorption coefficient through open Z-scan experiments”, Nanotechnology in Northern Europe (NTNE 2006), Helsinki, Finland, 16-18 May 2006
- C03.** I. Ftilis, M. Fakis, I. Polyzos, V. Giannetas, P. Persephonis, "Development of 3D Structures using the Two-photon Polymerization Technique", 5th International Conference – NN08 of Nanosciences & Nanotechnologies, Thessaloniki, Greece, 14-16 July 2008
- C04.** I. Ftilis, M. Fakis, I. Polyzos, V. Giannetas, P. Persephonis, "Two-photon microfabrication by using a new fluorene based photoinitiator", 6th International Conference – NN09 of Nanosciences & Nanotechnologies, Thessaloniki, Greece, 13-15 July 2009
- C05.** I. Ftilis, M. Fakis, I. Polyzos, V. Giannetas, P. Persephonis, "Comparison of two-photon polymerization with the use of two fluorene derivative

photoinitiators", ICO-PHOTONICS-DELPHI 2009, Delphi, Greece, 7-9  
October 2009

- C06.** S.M. Hassan, A. Skoulakis, I. Ftilis, E.L. Clark, P. Lee, J. Chatzakis, M. Bakarezos, V. Dimitriou, C. Petridis, N.A. Papadogiannis, M. Tatarakis, "Electrical and Plasma Characteristics of a Pulsed Neutron Generator", 15<sup>th</sup> Symposium on Radiation Measurements and Applications (SORMA XV), Michigan, USA, 9-12 June 2014
- C07.** I. Ftilis, A. Skoulakis, S. M. Hassan, E.L. Clark, E. Kasselouris, V. Dimitriou, J. Chatzakis, P. Lee, T.G. Papadoulis, M. Bakarezos, C. Petridis, I. K. Nikolos, E. Drakakis, C. Kosmidis, N. A. Papadogiannis and M. Tatarakis, "Study of a Miniature Plasma Focus Neutron Source", CRETE15 - The 2015 International Conference on Applications of Nuclear Techniques, Crete, Greece, 14-20 June 2015
- C08.** E. Kasselouris, I. Ftilis, A. Skoulakis, G. Koundourakis, V. Dimitriou, E. Bakarezos, E.L. Clark, N.A. Papadogiannis and M. Tatarakis, M. Tatarakis Invited Talk: "Plasma instabilities: the influence on plasma instabilities during the solid-plasma phase transition", 27th Symposium on Plasma Physics and Technology, Prague, Czech, 20-23 June, 2016
- C09.** E. Kasselouris, V. Dimitriou, I. Ftilis, A. Skoulakis, G. Koundourakis, E.L. Clark, M. Bakarezos, I.K. Nikolos, N.A. Papadogiannis and M. Tatarakis, M. Tatarakis Invited Talk: "The influence of the solid to plasma phase transition on the generation of plasma instabilities", 44th EPS Conference on Plasma Physics, Belfast, Northern Ireland (UK), 26-30 June 2017
- C10.** P. Petrakis, G. Andrianaki, E. Bakarezos, E. L. Clark, I. Ftilis, A. Grigoriadis, S.D. Moustazis, N. Papadogiannis, K. Perrakis, S. Petrakis, I. Ploumistakis, I. Pologiorgi, M. Tatarakis and I. Tazes, "CPPL and IMSLP Research Activities within HELLAS-CH Project", 35th European Conference on Laser Interaction with Matter (ECLIM 2018), Rethymno, Greece, 22-26 October 2018
- C11.** S. Petrakis, Y. Orphanos, I. Ftilis, E. L. Clark, V. Dimitriou, M. Bakarezos, M. Tatarakis, E.P. Benis and N.A. Papadogiannis, "High harmonics generation and characterization using the Zeus laser at CPPL", 35th European Conference on Laser Interaction with Matter (ECLIM 2018), Rethymno, Greece, 22-26 October 2018
- C12.** G. Andrianaki, A. Grigoriadis, I. Tazes, E. L. Clark, I. Ftilis, S. Petrakis, A. Skoulakis, E. Kasselouris, T.G. Maris, I. Tsiapa, M. Bakarezos, I.K. Nikolos, V. Dimitriou, E. P. Benis, N. A. Papadogiannis and M. Tatarakis, "Energetic particles source using the Zeus 45 TW laser at CPPL", 35th European Conference on Laser Interaction with Matter (ECLIM 2018), Rethymno, Greece, 22-26 October 2018

- C13.** G. Koundourakis, A. Skoulakis, E. Kaselouris, I. Ftilis, M. Bakarezos, E.L.Clark, J. Chatzakis, N. Vlahakis, N.A. Papadogiannis, V. Dimitriou and M.Tatarakis, “Computational study of plasma dynamic evolution produced by low current table-top pinch plasma devices”, 35th European Conference on Laser Interaction with Matter (ECLIM 2018), Rethymno, Greece, 22-26 October 2018
- C14.** E. L. Clark, A. Grigoriadis, I. Tazes, G. Andrianaki, I. Ftilis, S. Petrakis, A. Skoulakis, E. Kaselouris, T.G. Maris, I. Tsiapa, M. Bakarezos, I. K. Nikolos, V. Dimitriou, E. P. Benis, N. A. Papadogiannis and M. Tatarakis, “Novel gel dosimetry diagnostic for the secondary sources of ZEUS 45TW laser system at CPPL”, 3rd European Conference on Plasma Diagnostics – ECPD2019, Lisbon, Portugal, 6-9 May 2019
- C15.** E. L. Clark, A. Grigoriadis, I. Tazes, G. Andrianaki, I. Ftilis, S. Petrakis, A. Skoulakis, E. Kaselouris, T.G. Maris, I. Tsiapa, M. Bakarezos, I. K. Nikolos, V. Dimitriou, E. P. Benis, N. A. Papadogiannis and M. Tatarakis, “Secondary sources generated with the ZEUS 45TW laser system at CPPL”, International Conference on Applications of Nuclear Techniques – Crete19, Rethymno, Greece, 9-15 June 2019
- C16.** I. Ftilis, A. Skoulakis, E.L. Clark, E. Kaselouris, M. Bakarezos, J. Chatzakis, V. Dimitriou, N.A. Papadogiannis and M. Tatarakis, “A Tabletop Plasma Focus Neutron Source”, 2nd International Symposium in Electronic Engineering, Information Technology & Education EEITE2020, Chania, Greece, 12-14 October 2020
- C17.** I. Tazes, G. Andrianaki, A. Grigoriadis, G. Koundourakis, A. Skoulakis, E.L. Clark, E. Kaselouris, Y. Orphanos, J. Chatzakis, I. Ftilis, M. Bakarezos, V. Dimitriou, N.A. Papadogiannis and M. Tatarakis, “Advances in plasma particle accelerator studies via pic simulations on the HPC facility – ARIS”, 2nd International Symposium in Electronic Engineering, Information Technology & Education EEITE2020, Chania, Greece, 12-14 October 2020
- C18.** I. Ftilis, A. Skoulakis, E. Kaselouris, E. L. Clark, J. Chatzakis, M. Bakarezos, V. Dimitriou, N. A. Papadogiannis, M. Tatarakis, “Double plasma shock after pinching in table-top plasma focus device”, 47th IEEE International Conference on Plasma Science (ICOPS), Singapore (Virtual), 6-10 December 2020
- C19.** I. Ftilis, E. Kaselouris, A. Skoulakis, A. Kavroulakis, G. Koundourakis, E. L. Clark, M. Bakarezos, J. Chatzakis, N. A. Papadogiannis, V. Dimitriou, M. Tatarakis, “Influence of z-pinch wire geometrical characteristics on the generation of the electrothermomechanical and plasma instabilities”, 47th IEEE International Conference on Plasma Science (ICOPS), Singapore (Virtual), 6-10 December 2020

**C20.** I. Ftilis et al., “The research activities at IPPL/HMU for the Advanced SI for DD inertial fusion”, 17th Direct Drive and Fast Ignition Workshop, Madrid, 3-5 May 2022

**C21.** I. Tazes, G. Andrianaki, A. Grigoriadis, S. Passalidis, A. Skoulakis, E. Kaselouris, E. Vrouvaki, J. Chatzakis, I. Ftilis, M. Bakarezos, E.P. Benis, V. Dimitriou, N.A. Papadogiannis and M. Tatarakis, “Optical shaping of gas-jet target profiles for Magnetic Vortex Acceleration in the near-critical density regime” 36th European Conference on Laser Interaction with Matter (ECLIM), Frascati Italy, 19-23 September 2022