

Curriculum Vitae

Personal Information

Name: Skantzakis Emmanouil

Birthday & place: 25/06/1981 in Heraklion, Crete

Nationality: Greek

Gender: male

Education:

- **PhD:** 2011, Physics Department, University of Crete, Greece, supervisors Prof. D. Charalambidis-Dr. Paris Tzallas, “GENERATION AND APPLICATIONS OF INTENSE ISOLATED ATTOSECOND PULSES”
- **M.Sc.:** 2007, Physics Department, University of Crete, Greece, supervisors Prof. D. Charalambidis- Dr.Paris Tzallas, “TEMPORAL CHARACTERIZATION OF A SHORT PULSE SYNTHESIZED BY THE SUPERPOSITION OF LOW ORDER HARMONICS”
- **Bachelor:** 2004 School of Applied Physical and Mathematical Sciences, National Technical University Of Athens,Greece surpevisor Dr. Ioanna Zergioti, Diploma thesis title “FORMATION OF SILICON (SI) MICRO-PYRAMIDS USING ULTRA-SHORT LASER PULSES” in collaboration with IESL-FORTH.

Current Position: Post-doctoral Researcher, Attosecond Science and Technology Laboratory, Foundation for Research & Technology – Hellas, Research industry, since June 2014, Crete, Greece

Previous Positions: Post-Doctoral Researcher, Attosecond Physics Group, CEA, Research industry, April 2012 – April 2014 (2 years), Paris Area, France, Marie Curie Intra-European Fellowship (IEF) for Career Development.

Post-doctoral Researcher, Attosecond Science and Technology Laboratory, Foundation for Research & Technology – Hellas, Research industry, October 2011 – March 2012 (6 months) Crete, Greece

Fellowships/Prizes/Awards:

1. **First Award for Young Researchers**, International Symposium on Ultrafast Intense Laser Science (ISUILS), Maui, Hawaii, USA, December 6th-13th, 2010
2. **Marie Curie Intra-European Fellowship (IEF) for Career Development (2011).**
3. **Post-graduate grant** University of Crete 10/2004-10/2006
4. **Post-graduate grant** FORTH-IESL, CRETE, GREECE 10/2006-3/2011

Teaching Activities: (10/2004 - 12/2009)

1. Teaching assistant, Computer Science Department University of Crete, Theoretical Classes: Physics I, Physics II
2. Teaching assistant, Department of Applied Mathematics University of Crete, Theoretical Classes: Physics I, Physics II
3. Teaching assistant, Physics Department University of Crete, Experimental Classes: Optics Laboratories, Advanced Experiments

PUBLICATIONS

PUBLICATIONS IN CHAPTERS IN BOOKS

1. **On the generation of intense isolated attosecond pulses by many- cycle laser fields.**
Paris Tzallas, **Emmanouil Skantzakis**, Jann Eike Kruse, and Dimitris Charalambidis, Progress in Ultrafast Intense Laser Science VII, volume **100** of Springer Series in Chemical Physics

2. **Two-XUV-photon processes: a key instrument in attosecond pulse metrology and time domain applications.**

P. Tzallas, J. Kruse, **E. Skantzakis**, L.A.A. Nikolopoulos, G. D. Tsakiris and D. Charalambidis, Progress in Ultrafast Intense Laser Science VIII, , Vol. **103** of Springer Series in Chemical Physics

PUBLICATIONS IN REFERRED INTERNATIONAL JOURNALS

1. **Multiple ionization of argon via multi-XUV-photon absorption induced by 20-GW high-order harmonic laser pulses**

A. Nayak, I. Orfanos, I. Makos, M. Dumergue, S. Kühn, E. Skantzakis, B. Bodi, K. Varju, C. Kalpouzos, H. I. B. Banks, A. Emmanouilidou, D. Charalambidis, and P. Tzallas, Phys. Rev. A **98**, 023426 (2018)

2. **The ELI-ALPS facility: the next generation of attosecond sources**

Sergei Kühn, Mathieu Dumergue, Subhendu Kahaly, Sudipta Mondal, Miklós Füle, Tamás Csizmadia, Balázs Farkas, Balázs Major, Zoltán Várallyay, Eric Cormier, Mikhail Kalashnikov, Francesca Calegari, Michele Devetta, Fabio Frassetto, Erik Månsson, Luca Poletto, Salvatore Stagira, Caterina Vozzi, Mauro Nisoli, Piotr Rudawski, Sylvain Maclot, Filippo Campi, Hampus Wikmark, Cord L Arnold, Christoph M Heyl, Per Johnsson, Anne L'Huillier, Rodrigo Lopez-Martens, Stefan Haessler, Maïmona Bocoum, Frederik Boehle, Aline Vernier, Gregory Iaquaniello, **Emmanuel Skantzakis**, Nikos Papadakis, Constantinos Kalpouzos, Paraskevas Tzallas, Franck Lépine, Dimitris Charalambidis, Katalin Varjú, Károly Osvay and Giuseppe Sansone, J. Phys. B: At. Mol. Opt. Phys. **50**,132002 (2017)

3. **Generation of Attosecond Light Pulses from Gas and Solid State Media**

Stefanos. Chatziathanasiou, Subhendu. Kahaly, **Emmanouil. Skantzakis**, Giuseppe. Sansone , Rodrigo. Lopez-Martens, Stefan. Haessler, Katalin. Varju , George. D. Tsakiris, Dimitris. Charalambidis and Paraskevas. Tzallas, *Photonics*, **4**(2), 26 (2017)

4. **Polarization shaping of high-order harmonics in laser-aligned molecules**

E. Skantzakis, S. Chatziathanasiou, P. A. Carpeggiani, G. Sansone, A. Nayak, D. Gray, P. Tzallas, D. Charalambidis, E. Hertz & O. Faucher, Scientific Reports **6**, Article number: 39295 (2016)

5. **The ion microscope as a tool for quantitative measurements in the extreme ultraviolet**

N. Tsatrafyllis, B. Bergues, H. Schröder, L. Veisz, **E. Skantzakis**, D. Gray, B. Bodi, S. Kuhn, G. D. Tsakiris, D. Charalambidis & P. Tzallas, Scientific Reports **6**, Article number: 21556 (2016)

6. **Transverse Electromagnetic Mode Conversion for High-Harmonic Self-Probing Spectroscopy**

Antoine Camper, Amélie Ferré, Nan Lin, **Emmanouil Skantzakis**, David Staedter, Elizabeth English, Bastian Manschwetus, Frédéric Burgy, Stéphane Petit, Dominique Descamps, Thierry Auguste, Olivier Gobert, Bertrand Carré, Pascal Salières, Yann Mairesse and Thierry Ruchon, Photonics, **2**(1), 184-199 (2015)

7. **Direct two-XUV-photon double ionization of Xenon.**

P. Tzallas, **E. Skantzakis** and D. Charalambidis, J. Phys. B: At. Mol. Opt. Phys. **45** 074007 (2012)

(The article has been selected for the March 2012 special issue for the celebration of the 10th anniversary of attosecond pulse generation)

8. **Extreme-ultraviolet pump-probe studies of one femtosecond scale electron dynamics.**

P. Tzallas, **E. Skantzakis**, L. A. A. Nikolopoulos, G. D. Tsakiris and D. Charalambidis, Nature Physics **7**, 781–784 (2011) (2011)

9. **Measuring the absolute carrier-envelope phase of many-cycle laser fields.**

P. Tzallas, **E. Skantzakis** and D. Charalambidis, Physical Review A **82**, 061401(R)(2010)

10. **Persistent quantum interfering electron trajectories.**

J. E. Kruse, P. Tzallas, **E. Skantzakis** and D. Charalambidis, Physical Review A **82**,3 033438 (2010)

11. **Inconsistencies between two attosecond pulse metrology methods: A comparative study.**

J. E. Kruse, P. Tzallas, **E. Skantzakis**, C. Kalpouzos, G. D. Tsakiris, and D. Charalambidis. Physical Review A **82**,2 021402 (2010)

12. **Tracking Autoionizing-Wave-Packet Dynamics at the 1-fs Temporal Scale.**

- E. Skantzakis**, P. Tzallas, J. E. Kruse, C. Kalpouzos, O. Faucher, G. D. Tsakiris, and D. Charalambidis, *Phys. Rev. Lett.* **105**, 043902 (2010)
13. **Coherent continuum extreme ultraviolet radiation in the sub-100-nJ range generated by a high-power many-cycle laser field.**
E. Skantzakis, P. Tzallas, J. Kruse, C. Kalpouzos, and D. Charalambidis, *Opt. Lett.* **34**, 1732-1734 (2009)
(The article has been selected for the July 2009 issue of Virtual Journal of Ultrafast Science).
 14. **Exploring intense attosecond pulses.**
D. Charalambidis, P. Tzallas, E.P. Benis, **E. Skantzakis**, G. Maravelias, L.A.A. Nikolopoulos, A. Peralta Conde and G.D. Tsakiris, *New J. Phys.* **10**, 025018 (2008).
 15. **Generation of intense continuum XUV radiation by many cycle laser fields.**
P. Tzallas, **E. Skantzakis**, C. Kalpouzos, E.P. Benis, G.D. Tsakiris and D. Charalambidis, *Nature Physics* **3**, 846 (2007).
(The article has been selected in a round-up of papers of 2007 in the field of photonics published by the physical sciences division of the Nature Publishing Group).
 16. **Full temporal reconstruction of a lower order harmonic superposition.**
P. Tzallas, **E. Skantzakis**, E.P. Benis, A. Bonarou, G.D. Tsakiris, and D. Charalambidis, *New J. Phys.* **9**, 232 (2007).
 17. **Ultraviolet laser microstructuring of silicon and the effect of laser pulse duration on the surface morphology.**
Skantzakis E, Zorba V, Papazoglou DG, Zergioti I, Fotakis C , *Appl. Surface Science* **252 (13)**: 4462-4466 (2006)

ORAL PRESENTATIONS IN INTERNATIONAL CONFERENCES

1. **Formation of Silicon Microspikes utilizing ultrafast laser pulses**
E.Skantzakis, V.Zorba, D.G. Papazoglou, I. Zegioti, C.Fotakis” , Laser Olympics Conference , Athens, Greece ,15 – 18 October 2005.
2. **Generation of intense single attosecond pulses**
E. Skantzakis, P.Tzallas, J. Kruse, C. Kalpouzos, D. Charalambidis,FASTQUAST Network Workshop ,Rethymnon, Crete,Greece, 23- 24 September 2009
3. **Full mapping of the attosecond emission from aligned molecules, Ultrafast Optics,**
A. Camper, **E. Skantzakis** et al., Davos, Switzerland, March 4-8 (2013).
4. **Combined HARMONIC Spectroscopy by two-Source EUV interferometry and Rabbit**
E. Skantzakis, et al., ATTO 2013 Conference, 8-12 July 2013, Paris, France
5. **Quantum Path-Resolved High Harmonic Phase Measurements**
A. Camper, **E. Skantzakis** et al., ATTO 2013 Conference, 8-12 July 2013, Paris, France

SEMINARS TALKS

1. **Generation and applications of intense isolated attosecond pulses**, Max Born Institute, Berlin, 4 October 2010
2. **Generation, metrology and applications of intense quasi-isolated attosecond pulses**, SPAM, CEA Saclay, Paris, 11 September 2012

POSTER PRESENTATIONS IN REFERRED INTERNATIONAL CONFERENCES

1. **"1fs scale XUV-induced-XUV probed coherences in atoms and molecules"**
P. Tzallas, **E. Skantzakis**, P. A. Carpeggiani, L.A.A. Nikolopoulos and D. Charalambidis., ATTO 2013 Conference, 8-12 July 2013, Paris, France
2. **Extreme-ultraviolet pump–probe studies of one-femtosecond-scale electron dynamics**
E. Skantzakis, P. Tzallas, L. A. A. Nikolopoulos, G. D. Tsakiris & D. Charalambidis, LEI 2011 - Light at Extreme Intensities, 14 – 18 November 2011, Szeged, Hungary
3. **Tracking Autoionizing-Wave-Packet Dynamics at the 1-fs Temporal Scale.**

- E. Skantzakis**, P. Tzallas, J. E. Kruse, C. Kalpouzos, O. Faucher, G. D. Tsakiris, and D. Charalambidis, HIGH INTENSITY LASERS AND HIGH FIELD PHENOMENA(HILAS), Istanbul, Turkey, February 16-18 2011,
4. **Tracking Autoionizing-Wave-Packet Dynamics at the 1-fs Temporal Scale.**
E. Skantzakis, P. Tzallas, J. E. Kruse, C. Kalpouzos, O. Faucher, G. D. Tsakiris, and D. Charalambidis, International Symposium on Ultrafast Intense Laser Science, Maui, Hawaii, USA, December 6th-13th, 2010
 5. **Coherent continuum extreme ultraviolet radiation in the sub-100-nJ range generated by a high-power many-cycle laser field**
E. Skantzakis, P. Tzallas, J. Kruse, C. Kalpouzos and D. Charalambidis International Symposium on Ultrafast Intense Laser Science, Elounda Crete, Greece, October 3rd-7th, 2009
 6. **Non-linear XUV processes @ femto / atto-second temporal scales.**
P. Tzallas, E.P. Benis, L.A.A. Nikolopoulos, O. Faucher, **E. Skantzakis**, G.D. Tsakiris, and D. Charalambidis, XXV International Conference on Photonic Electronic and Atomic Collisions, Freiburg, Germany, 25-31 July 2007.
 7. **Spatiotemporal effects in attosecond pulse train metrology,**
E.P. Benis, J. Kruse, P. Tzallas, **E. Skantzakis**, G.D. Tsakiris, and D. Charalambidis, 9th European Conference on Atoms Molecules and Photons, Heraklion, Crete, Greece, 6-11 May 2007.
 8. **Full temporal reconstruction of lower order harmonic superposition.**
E. Skantzakis, P. Tzallas, E. Papalazarou, C. Kalpouzos, A. Bonarou, E.P. Benis, G.D. Tsakiris, and D. Charalambidis,
9th European Conference on Atoms Molecules and Photons, Heraklion, Crete, Greece, 6-11 May 2007.
 9. **Towards intense isolated attosecond pulses**
P. Tzallas, **E. Skantzakis**, C. Kalpouzos, E.P. Benis, A. Bonarou, G.D. Tsakiris, and D. Charalambidis, 9th European Conference on Atoms Molecules and Photons, Heraklion, Crete, Greece, 6-11 May 2007.
 10. **Pulse Duration Effects on Laser Microstructuring of Si and its Field Emission Properties**
V. Zorba, E. Stratakis, E. Spanakis, D.G. Papazoglou, I. Zergioti, P. Tzanetakis, A. Manousaki, **E. Skantzakis**, D. Gray, C. Fotakis, 3rd International Symposium on Nanomanufacturing organized by the University of Cyprus, Leukosia Cyprus, 2-5 November 2005.
 11. **Pulse Duration and Pulse Shaping Effects on Laser Microstructuring of Si**
V. Zorba, E. Spanakis, E. Stratakis, **E. Skantzakis**, D.G. Papazoglou, I.Zergioti, P.Tzanetakis, A. Manousaki, D. Gray, C. Fotakis." Conference on Laser Ablation 2005 (COLA 05), Banff, Canada, 11-16 September 2005.
 12. **Ultraviolet Laser Microstructuring of Si: Pulse Duration Effects,**
E. Skantzakis, V. Zorba, D. G. Papazoglou, I. Zergioti, C. Fotakis, EMRS, Stranburg, France, 31 May- 3 June 2005.
 13. **Ultraviolet laser microstructuring of Si: Pulse duration effects,**
V. Zorba, **E. Skantzakis**, E. Spanakis, E. Stratakis, I. Zergioti, D.G. Papazoglou, P.Tzanetakis, C. Fotakis, 2004 Gordon Research Conference on Laser Interactions with Materials, Andover, New Hampshire, USA, August 2004.

CONFERENCE PAPERS

1. D. Charalambidis, P. Tzallas, and **E. Skantzakis**, "Exploiting Energetic XUV Super-Continua," in Frontiers in Optics 2012/Laser Science XXVIII, OSA Technical Digest (online) (Optical Society of America, 2012), paper LW1H.4.

CONFERENCE PROCEEDINGS

1. **Generation of intense coherent continuum XUV radiation by many-cycle laser fields**

P. Tzallas, **E. Skantzakis**, E.P. Benis, G. Maravelias, C. Kalpouzos, D. Charalambidis CLEO/Europe-EQEC 2009-European Conference on Lasers and Electro-Optics and the European Quantum Electronics Conference, art. No. 5196519 (2009).

2. **Exploiting Energetic XUV Super-Continua**

P. Tzallas, **E. Skantzakis**, L.A.A. Nikolopoulos, and D. Charalambidis, Proceedings of the 12th International Conference on Multiphoton Processes (ICOMP12) and the 3rd International Conference on Attosecond Physics (ATTO3).

Series: Multiphoton Processes and Attosecond Physics, Springer Proceedings in Physics, Vol. **125**