Prof. Dr. ELEFTHERIOS GOULIELMAKIS (October 2024)

NATIONALITY

Hellenic (Greek)

OFFICE ADRESS

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EDUCATION

Ph.D. Physics (2005), Physics Department, Ludwig-Maximilians University of Munich, Germany
MSc. Physics (2002), Physics Department, University of Crete, Greece
BSc. Physics (2000), Physics Department, University of Crete, Greece

EMPLOYMENT

08/2018	Professor of Physics (W3), University of Rostock
12/2010-2018	Research Group Leader, Max Planck Institute of Quantum Optics, Garching, Germany
08/2010-05/2016	Coordinator of the Max Planck Centre of Attosecond Science (MPC-AS)
03/2010-03/2016	Adjunct Prof of Physics, Pohang Institute of Technology (POSTECH), Korea
08/2005-11/2010	Team leader/ Postdoctoral Researcher, Max Planck Institute of Quantum Optics, Germany
09/2002-08/2005	Technical University of Vienna (TUW) & Physics Department, University of Munich (LMU), Germany
07/1999-08/2002	Research Assistant, Institute of Electronic Structure & Lasers, FORTH, Crete, Greece

HONORS

Roentgen Prize, Justus-Liebig-Universität Gießen (2015)
Gustav Hertz Prize, Deutsche Physikalische Gesellschaft (2013)
IUPAP Prize in Optics by the international commission of Optics (ICO) (2009)
G. Foteinos prize in Experimental Physics, Academy of Athens (2007)

GRANTS/FELLOWSHIPS

Advanced Grant of the European Research Council (ERC) (2023)
Starting Grant of the European Research Council (ERC) (2010)
Marie-Curie Reintegration Grant (2007)
Marie-Curie Intra European Fellowship (2005)

RESEARCH FOCUS

Solid state spectroscopy and microscopy, Ultrafast spectroscopy of matter: condensed matter and atomic systems, Dielectrics and Semiconductors in intense fields, Quantum Transport in solids under intense light fields, Synthesis and attosecond control of light fields, Real time control and measurement of electronic processes, Generation of attosecond soft x-ray and optical pulses.

SUMMARY OF SCIENTIFIC ACCOMPLISMENTS

PUBLICATIONS

Total # of publications 58
6 publications in Science (3 as the leading author and 2 as the senior author)
7 publications in Nature (2 as the leading author and 5 as the senior author)
2 publications in Nature Photonics (a research article and an invited review).
6 publications in Physical Review Letters (1 as the senior author).

FREQUENTLY USED (and often disputable) METRICS

Total number of citations: ISI WoS >11500 (Google Scholar >17200)
#Publications with more than 100 citations (22)
#Publication with more than 1000 citations (5)
h-index: 35 ISI WoS (39 Google Scholar)
Ten (10) papers have been identified as highly cited in physics (WoS).

One review artcle is identified as highly cited and hot paper in the field of physics (WoS)

INVITED/KEYNOTE/PLENARY LECTURES

~ 70 in total ~ 6 per year (as of 2010)

GRADUATE STUDENT SUPERVISION (as of 2010)

Completed: 7 PhD, 3 MSc., 6 BSc

POSTGRADUATE RESEARCHER SUPERVISION (as of 2010)

Completed: 5, In progress: 1

MAIN SCIENTIFIC ACCOMPLISHMENTS (BRIEF DESRIPTION)

AS A RESEARCH GROUP LEADER

Demonstrated the first generation attosecond electron pulses. These pulse where generated using intense sub-cycle waveforms that triggered field emission from tungsten nanotips. A new methodology for the characterization of attosecond electrons pulses as well as optical fields was also demonstrated. Kim et al., **Nature 583, 55 (2020).**

Demonstrated the technique of Laser Picoscopy. Associated the emitted high harmonic ration of strong field driven solids to structural information at the level of the unit cell allowing the capturing of real space pictures of electron potentials in crystals with atomic resolution. Lakhotia et al., **Nature 583, 55 (2020).**

Demonstrated attosecond XUV-Optical attosecond probe spectroscopy which allowed tracing and real time control of ultrafast dephasing and dynamic response of highly correlated electronic systems in the condensed matter and the first direct access into the dynamics of core excitons. The technique is porting fundamental concepts of nonlinear spectroscopy into the attosecond domain. A. Moulet et al., **Science 357, 1134 (2017)**

First demonstration of light induced electric currents in solids at frequencies well beyond the PHz frontier and direct study of the dynamics photonic and electronic properties of materials. First direct measurement of the phase coherence of extreme ultraviolet radiation (XUV) generated in solids. Garg et al., **Nature 538, 359 (2016)**

First demonstration of the synthesis of an optical attosecond pulse, and of its application in the control of bound electrons in atoms and solids. Our studies allowed for the first-time access into the time scale of bound-electronic response of matter. Hassan et al., **Nature 530, 66 (2016)**.

Demonstrated laser driver extreme ultraviolet radiation in bulk solids. We showed that generation of extreme ultraviolet in dielectrics is possible under condition of ultrafast laser excitation of solids opening new routes for porting the toolbox of attosecond science into the condensed matter and to unveil structural and dynamical information. *T. T Luu, M. Garg et al* ***Nature 521, 498 (2015)***

Demonstrated synthesis of light fields (generation & metrology) with sub-optical cycle resolution and attosecond precision **Science 334, 195 (2011)**. This research broke an essential frontier in light control as it enabled the tailoring of light fields on a time scale faster than their own oscillations. The attained resolution made possible the demonstration of the first pump-probe experiment with attosecond resolution and has enable the real-time observation of the *light-field-induced stark shift of bound electrons*.

Attained real-time observation of valence electron motion in atoms, **Nature 466, 739 (2010).** This work opened the route for chemical control on the electronic time scale as well as for the exploration of real time control of the electronic coherence with light field.

AS A TEAM LEADER/POSTDOCTORAL SCIENTIST

Extended few-cycle light generation and metrology in the in the deep ultraviolet spectral region, **Optics Express 16, 18956 (2008), Optics letters 35, 2248 (2010), Physical review letters 105, 243902 (2010)**. These efforts allowed extending light control in this—technologically demanding— spectral range and has furnished spectroscopy with the shortest pulses ever generated in this part of the electromagnetic spectrum.

Demonstrated sub-100-attosecond pulse generation in the soft x-ray part of the spectrum, ***Science*** **320, 1614 (2008)**. These pulses comprised for a long time the shortest flashes of light generated and have enabled precision measurements of atomic processes.

AS A DOCTORATE RESEARCHER

Demonstrated reproducible generation of isolated attosecond XUV bursts as well as, the highest temporal resolution ~ 100 attoseconds at that time - **Nature 427, 817 (2004).** This publication has been identified as a hot paper in Physics in July 2005 by the essential science indicators (ESI) and the web of science.

First direct measurement of the instantaneous field of light waves, **Science 305, 1267 (2004).** This research *opened the way to lightwave electronics* **Science 317, 769 (2007)** that is, control of electron motion by light's waveform. The concept has been also dubbed as: the oscilloscope of light waves".

PEER REVIEWED PUBLICATIONS (55)

1. Kim, H.Y., Garg, M., Mandal, S. *et al.* **Attosecond field emission**. *Nature* **613**, 662–666 (2023).

2. A. Thorpe, N. Boroumand, A. M. Parks, E. Goulielmakis, and T. Brabec, High harmonic generation in solids: Real versus virtual transition channels Phys. Rev. B **107**, 075135(2023).

3. Z. Pi, H. Y. Kim, and E. Goulielmakis, "Petahertz-scale spectral broadening and few-cycle compression of Yb:KGW laser pulses in a pressurized, gas-filled hollow-core fiber," Opt. Lett. **47**, 5865-5868 (2022)

4. E. Goulielmakis and T. Brabec, **High harmonic generation in condensed matter**, Nat. Phot **16**, 411 (2022) (Invited review) (***Highly cited and Hot paper in physics, WOS***).

5. H. Lakhotia, H-Y Kim, M. Zhan, S. Hu, S. Meng and E. Goulielmakis
"Laser Picoscopy of valence electrons in solids" Nature 583, 55 (2020).

6. M. Garg, H. Y. Kim and E. Goulielmakis "**Ultimate reproducibility of EUV waveforms by high harmonic generation in quartz"** doi:10.1038/s41566-018-0123 Nature Photonics (2018)

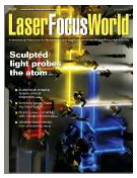
7. A. Moulet, J. B. Bertrand, T. Klostermann, A. Gugenmos, N. Karpowicz, E. Goulielmakis
"**Soft x-ray Excitonics**"
Science **357**, 1134 (2017)
8. M. Garg, M. Zhang, T.T. Luu, H. Lakhotia, T. Klostermann, A. Guggenmos & E. Goulielmakis
"**Multi-PHz Electronic Metrology**"
Nature **538**, 359 (2016) (***Highly cited WOS***)
9. M. Th. Hassan, T.T. Luu, A. Moulet, O. Raskazovskaya, M. Garg, N. Karpowicz, P. Zhokhov, A. Zheltikov, V. Pervak, F. Krausz & E. Goulielmakis
"**Optical attosecond Pulses and probing the response of bound electrons"**
*Nature **530**, 66* (2016) ***(Highly Cited WOS)***

10. B. Bodi, I. Balogh, V. Tosa, E. Goulielmakis, K. Varju and P. Dombi
"**Attosecond pulse generation with an optimization loop in a light-field-synthesizer"**
Opt. Exp. **23**, 21957 (2016)
11. O. Razskazovskaya, M. Th. Hassan, T.T. Luu, E. Goulielmakis, and V. Pervak,
"**Efficient broadband highly dispersive HfO2/SiO2 multilayer mirror for pulse compression in near ultraviolet"**
Opt. Exp. **24**, 13668 (2016)
12. T. T. Luu, M. Garg, S. Kruchinin, A. Moulet, M. Hassan and E. Goulielmakis
"**Extreme Ultraviolet High Harmonic Spectroscopy of Solids"**
*Nature **521**, 498 (2015)* ***(Highly Cited WOS)***
13. O Razskazovskaya, TT Luu, M Trubetskov, E Goulielmakis, V Pervak
"Nonlinear Absorbance in Dielectric Multilayers"
*Optica, **2**, 803 (2015)*
14. E. Goulielmakis and Ferenc Krausz
"Making Optical waves, tracing electrons in real time: The onset of the attosecond realm"
PIER **147**, 127 (2014) **(Invited Review)**
15. A. Moulet, V. Tosa, E. Goulielmakis
"**KeV photon emission at the half-field cycle regime: A feasibility study**"
*Opt. Lett **39**, 6189 (2014)*
16. L. Heizer, I. Bugar, E Serebryanikov, D. Lorenc, D. Uherek, E. Goulielmakis, A. M. Zheltikov
"**Intense Cr: fosterite-laser-based supercontinuum source"**
Opt. Lett. **39**, 5562 (2014)
17. E Balogh, B Bódi, V Tosa, E Goulielmakis, K Varjú, P Dombi
"**Genetic Optimization of attosecond-pulse generation in light-field synthesizers"**
Phys Rev. A **90**, 023855 (2014).
18. A. With, R. Santra and E. Goulielmakis "

Real-time tracing of Valence shell electronic coherences with attosecond absorption spectroscopy"
Chemical Physics ***414****, 149 (*2013) (**invited)**

19. S. Pabst, A. Sytcheva, A. Moulet, A. Wirth, E. Goulielmakis, R. Santra
"**Theory of Attosecond transient absorption spectroscopy for overlapping pump and probe pulses"**
Phys. Rev. A, **86** (2012) 063411.

20. M. Hassan, A. Wirth, I. Grguras, A. Moulet, T.T. Luu, V. Pervak and E. Goulielmakis
"**Attosecond Photonics: Synthesis and Control of Light Transients"**
Rev. Sci. Instrum. **83,** 111301 (2012) (**invited)**.
21. Eleftherios Goulielmakis "**Attosecond Photonics: Extreme Ultraviolet catastrophes"**
News and Views commentary, *Nat. Photonics* 6, 142 (2012)



22. A. Wirth, M. Hassan, I. Grguras, J. Gagnon, A. Moulet, T.T. Luu, S. Pabst, R. Santra, Z. Alahmed, A.M. Azzeer, V.S. Yakovlev, V. Pervak, F. Krausz and E. Goulielmakis
"**Synthesized Light Transients**"
Science **334**, 195 (2011). ***(Highly Cited WOS)***
23. M. Schultze, A. Wirth, I. Grguras, M. Uiberacker, T. Uphues, A. J. Verhoef, J. Gagnon, M. Hofstetter, U. Kleineberg, E. Goulielmakis and F. Krausz **"**
State-of-the-art attosecond metrology"
J. Electron. Spectrosc. Relat. Phenom. **184**, 68 (2011).
24. M. Hofstetter, A. Aquila, M. Schultze, A. Guggenmos, S. Yang, E. Gullikson, M. Huth, B. Nickel, J. Gagnon, V. S. Yakovlev, E. Goulielmakis, F. Krausz and U. Kleineberg, "
Lanthanum-molybdenum multilayer mirrors for attosecond pulses between 80 and 130 eV"
New Journal of Physics **13**, 063038 (2011).
25. M. Hofstetter, M. Schultze, M. Fiess, B. Dennhardt, A. Guggenmos, J. Gagnon, V. S. Yakovlev, E. Goulielmakis, R. Kienberger, E. M. Gullikson, F. Krausz, and U. Kleineberg,
"**Attosecond dispersion control by extreme ultraviolet multilayer mirrors"**
Opt. Express **19**, 1767 (2011).
26. F. Reiter, U. Graf, E. E. Serebryannikov, W. Schweinberger, M. Fiess, M. Schultze, A. M. Azzeer, R. Kienberger, F. Krausz, A. M. Zheltikov, and E. Goulielmakis,
"Route to Attosecond Nonlinear Spectroscopy"
Phys. Rev. Lett. **105**, 243902 (2010).
27. M. Fiess, M. Schultze, E. Goulielmakis, B. Dennhardt, J. Gagnon, M. Hofstetter, R. Kienberger, and F. Krausz
"**Versatile apparatus for attosecond metrology and spectroscopy**"
Rev. Sci. Instrum. **81**, 093103 (2010).

28. Eleftherios Goulielmakis, Zhi-Heng Loh, Adrian Wirth, Robin Santra, Nina Rohringer, Vladislav S. Yakovlev, Sergey Zherebtsov, Thomas Pfeifer, Abdallah M. Azzeer, Matthias F. Kling, Stephen R. Leone und Ferenc Krausz
"**Real time observation of valence electron motion**
Nature **466,**739 (2010) ***(Highly Cited WoS)***
29. M. Schultze, M. Fiess, N. Karpowicz, J. Gagnon, M. Korbman, M. Hofstetter, S. Neppl, A. L. Cavalieri, Y. Komninos, T. Mercouris, C. A. Nicolaides, R. Pazourek, S. Nagele, J. Feist, J. Burgdorfer, A. M. Azzeer, R. Ernstorfer, R. Kienberger, U. Kleineberg, E. Goulielmakis, F. Krausz, and V. S. Yakovlev "**Delay in Photoemission"**
Science **328**, 1658 (2010). ***(Highly Cited WoS)***

30. F. Reiter, U. Graf, M. Schultze, W. Schweinberger, H. Schroder, N. Karpowicz, A. M. Azzeer, R. Kienberger, F. Krausz, and E. Goulielmakis
"**Generation of sub-3 fs pulses in the deep ultraviolet"**
Optics Letters **35**, 2242 (2010).
31. R. Gopal, K. Simeonidis, R. Moshammer, T. Ergler, M. Durr, M. Kurka, K.U. Kuhnel, S. Tschuch, C.D. Schroter, D. Bauer, J. Ullrich, A. Rudenko, O. Herrwerth, T. Uphues, M. Schultze, E. Goulielmakis, M. Uiberacker, M. Lezius and M.F. Kling
"**Three-Dimensional Momentum Imaging of Electron Wave Packet Interference in Few-Cycle Laser Pulses**"
Phys. Rev. Lett. **103**, 053001 (2009)
32. U. Graf, M. Fiess, M. Schultze, R. Kienberger, F. Krausz and E. Goulielmakis
"**Intense few-cycle pulses in the deep ultraviolet"**
Opt. Express **16**, 18956 (2008)
33. E. E. Serebryannikov, E. Goulielmakis and A. M. Zheltikov
"**Supercontinuum compressible to single-cycle pulse widths from an ionizing gas"**
New J. Phys. 10 (2008) 093001
34. E. Goulielmakis, S. Koehler, B. Reiter, M. Schultze, A. J. Verhoef, E. Serebryannikov, A. M. Zheltikov and F. Krausz,
"**Ultra-broadband, coherent light source based on self-channelling of few-cycle pulses in He"**
Opt. Lett. **33**, 1407 (2008)

35. E. Goulielmakis, M. Schultze, M. Hofstetter, V. S. Yakovlev, J. Gagnon, M. Uiberacker, A. L. Aquila, E. M. Gullikson, D. T. Attwood, R. Kienberger, F. Krausz, U. Kleineberg
"**Single Cycle Nonlinear Optics**"
Science **320**, 1614 (2008) ***(Highly Cited WOS)***

36. J. Gagnon, E. Goulielmakis, V.S. Yakovlev
"**Advances toward the accurate FROG characterization of attosecond pulses from streaking measurements**" *App. Phys. B* **92**, 25 (2008)
37. J. Schmidt, E. Goulielmakis, V. S. Yakovlev
"**Modelling attosecond pump-probe attosecond measurements on non-aligned molecules"**
J. Phys. B: At. Mol. Opt. Phys. **41**, 115602 (2008)
38. E. Goulielmakis, V.S. Yakovlev, A. L. Cavalieri, M. Uiberacker, V. Pervak, A. Apolonski, R. Kienberger, U. Kleineberg, F. Krausz
"**Attosecond control and measurement: Lightwave electronics"**
Science **317**, 769 (2007) ***(Highly Cited WOS)***

39. A. L. Cavalieri, E. Goulielmakis, B. Horvath, W. Helml, M. Schultze, M. Fiess, V. Pervak , L. Veisz, V.S. Yakovlev, M. Uiberacker, A. Apolonski, F. Krausz R. Kienberger
"**Intense 1.5-cycle near infrared laser waveforms and their use for the generation of ultra-broadband soft-x-ray harmonic continua."**
New. J. Phys **9**, 242 (2007)
40. E. Goulielmakis, M. Schultze, M. Uiberacker, M. Hofstetter, U. Kleineberg and F. Krausz
"**Isolated 170 as pulse generation in the XUV"**
Acta Phys. Pol A 5, 112 (2007)
41. M. Schultze, E. Goulielmakis, M. Uiberacker, M. Hofstetter, J. Kim, D. Kim, F. Krausz, U. Kleineberg
"**Powerful 170-attosecond XUV pulses generated with few-cycle laser pulses and broadband multilayer optics**
New J. Phys **9**, 243 (2007)
42. N. Akoezbek, S.A. Trushin, A. Baltuska, W. Fuss, E. Goulielmakis, K. Kosma, F. Krausz, S. Panja, M. Uiberacker, W. E. Schmidt, A. Becker, M. Scalora, M. N. Bloemer
"**Extending the supercontinuum spectrum down to 200 nm with few-cycle pulses"**
New J. Phys **8**, 177 (2006)
43. H. Rottke, X. Liu, E. Eremina, W. Sandner, E. Goulielmakis, K. O. Keeffe, M. Lezius, F. Krausz, F. Lindner, M. G. Schatzel, G. G. Paulus, H. Walther
"**Non-sequential double ionization in a few-cycle laser pulse: the influence of the carrier-envelope phase"**
J. Mod. Opt. **53**,149 (2006)
44. F. Lindner, M. G. Schatzel, H. Walther, A. Baltuška, E. Goulielmakis, F. Krausz, D. B. Milosevic, D. Bauer, W. Becker, G. G. Paulus
"**Attosecond double-slit experiment**"
Phys. Rev. Lett. **95**, 040040 (2005)
45. R. Kienberger, M. Uiberacker, E. Goulielmakis, A. Baltuška, M. Drescher, F. Krausz
"**Single Sub-fs Soft-X-ray Pulses: Generation and Measurement with the Atomic Transient Recorder**"
J. Mod. Opt. **52**, 261 (2005)
46. M. Uiberacker, E. Goulielmakis, R. Kienberger, A. Baltuška, T. Westerwalbesloh, U. Kleineberg, U. Heinzmann, M. Drescher, F. Krausz
"**Attosecond metrology with controlled light waveforms"**
Laser Phys. **15**, 195 (2005)
47. E. Goulielmakis, M. Uiberacker, R. Kienberger, A. Baltuška, V.S. Yakovlev, A. Scrinzi, Th. Westerwalbesloh, U. Kleineberg, U. Heinzmann, M. Drescher, F. Krausz
"**Direct Measurement of Light Waves"**
Science **305**, 1267 (2004)
48. X. Liu, H. Rottke, E. Eremina, W. Sandner, E. Goulielmakis, K.O. Keeffe, M. Lezius, F. Krausz, F. Lindner, M.G. Schatzel, G.G. Paulus, H. Walther
"**Non-sequential double ionization at the single-optical-cycle limit**"
Phys. Rev. Lett. **93**, 26 (2004)
49. M. G. Schatzel, F. Lindner, G. G. Paulus, H. Walther, E. Goulielmakis, A. Baltuška, M. Lezius, F. Krausz
"**Long-term stabilization of the carrier-envelope phase of few-cycle laser pulses"**
Appl. Phys. B **79**, 1021 (2004)
50. R. Kienberger, E. Goulielmakis, M. Uiberacker, A. Baltuška, V. Yakovlev, F. Bammer, A. Scrinzi, T. Westerwalbesloh, U. Kleineberg, U. Heinzmann, M. Drescher, F. Krausz
"Atomic Transient Recorder"
Nature **427**, 817 (2004)
51. F. Lindner, G. Paulus, H. Walther, A. Baltuška, E. Goulielmakis, M. Lezius, F. Krausz
"**The Gouy effect for few-cycle laser pulses"**
Phys. Rev. Lett. **92**, 11 (2004)
52. G. G. Paulus, F. Lindner, H. Walther, A. Baltuška, E. Goulielmakis, M. Lezius, F. Krausz
"**Measurement of the phase of few-cycle laser pulses"**
Phys. Rev. Lett. **91**, 25 (2003)
53. Baltuška, M. Uiberacker, E. Goulielmakis, R. Kienberger, V.S. Yakovlev, T. Udem, T.W. Hänsch, F. Krausz

"**Phase-controlled amplification of few-cycle laser pulses"**
IEEE J. Sel. Topics Quantum Electron. **9**, 972 (2003) (**Invited**)

54. A. Baltuška, T. Udem, M. Uiberacker, M. Hentschel, E. Goulielmakis, C. Gohle, R. Holzwarth, V.S. Yakovlev, A. Scrinzi, T.W. Hänsch, F. Krausz
"Attosecond control of electronic processes by intense light fields"
Nature **422**, 189 (2003)
55. D.Charalambidis, N.A. Papadogiannis, E. Goulielmakis, G. Nersysian, G. D. Tsakiris and K. Witte
"**A transmission grating interferometer for the temporal characterization of harmonics**"
J. Mod. Opt. **50**, 387 (2003)
56. N. A. Papadogiannis, G. Nersisyan, E. Goulielmakis T. P. Rakitzis, E. Hertz and D. Charalambidis G.D. Tsakiris, K. Witte
"**Temporal characterization of short pulse third-harmonic generation in an atomic gas by a transmission grating interferometer**"
Opt. Lett. **27**, 1561 (2002)
57. E. Goulielmakis, G. Nersisyan, N. A. Papadogiannis, D. Charalambidis G.D. Tsakiris, K. Witte
"**A dispersionless Michelson interferometer for the characterization of attosecond pulses**"
App. Phys. B **74**, 197 (2002)
58. N. A. Papadogiannis, C. Kalpouzos, E. Goulielmakis, G. Nersisyan, and D. Charalambidis, F. Augé, F. Weihe, and Ph. Balcou
"**Kilohertz extreme-ultraviolet light-source based on femtosecond high order harmonic generation from noble gases"**
Appl. Phys. B **73**, 687 (2001)

POPULAR ARTICLES

Eleftherios Goulielmakis and Ferenc Krausz
" *LichtWelle in Zeitluppe*"
Spectrum der Wissenschaft (German edition of Scientific American), p 18, Oct. 2005
Eleftherios Goulielmakis
"Attophysics: capturing light waves and electrons in motion (Αττοφυσική: Φωτογραφίζοντας κύματα φωτός και ηλεκτρόνια σε κίνηση) "
Scientific American (Greek edition) 6, 64 (2008)

INVITED/KEYNOTE &PLENNARY CONFERENCE CONTRIBUTIONS

1. **QUITIF international Conference 2017, Bad Honnef Germany** "Exploring the Ultrafast Frontier of Matter with Synthesized Light Fields" **(invited)**
2. **ATTO2017, Xi' Ahn, China** "En Route to Coherent Electronics" **(invited)**
3. **CLEO EUROPE 2017, Munich Germany** "Driving Solids with Intense Optical Fields: Route to Coherent electronics" **(invited)**
4. **DAMOP, June 2017, Sacramento USA** ''Route to Coherent Electronics" **(invited)**
5. **NICE Optics, October 2016** "Bridging photonics and Material science" **(keynote).**
6. **ICONO-LAT, Belarus September 2016** "Attosecond Nonlinear Optics" (**keynote**)
7. **Frontiers in Optics, October 2016** "Coherent, laser-driven Electronics" **(Invited)**
8. **SUILS15 Cassis, France October 2016" Nonlinear** Phenomena in atomic and mesoscopic scale" **(Invited)**
9. **Ultrafast Phenomena July 2016** "Optical Attosecond Pulses and Nonlinear atomic response" (Invited)
10. ***Ultrafast dynamics and Time-resolved Interactions workshop UXUV Satellite workshop*** "Optically Driven Emission of Extreme Ultraviolet Radiation from Bulk Solids: Bridging Electronics and Photonics" *Szeged June 26 (2016)* ***(invited)***
11. **Justus-Liebig-Universität Gießen (2015), Roentgen** Laurate Lecture Nov 25, 2015
12. **Atomic Physics Workshop ATOM15** "Attosecond Electronics", Dresden, Germany, November 2013 **(invited)**
13. **The Sino-German Symposium on Attosecond Photonics**, "New aspects on ultrafast physics in the condensed phase, Shanghai China, Nov 2015
14. **Deutsches Museum Muenchen "**Die Zaemung des Lichtes", September 2015 (Invited Lecture for the public)
15. **Future of Ultrashort Pulses**, Garching Germany "Attosecond Optical Synthesis and Electronics", September 2015 **(Invited)**
16. **Fundamental Optical Processes in Semiconductors (FOPS): "Attosecond physics in Solids"** 2015 **(invited)**
17. **Ultrafast Imaging of Matter Conference** Grindelwald, Switzerland 2015 **(invited)**

18. **Frontiers in Optics 2014 '**Tracing and Controlling Attosecond Dynamics in Condensed Matter" Tucson Arizona October 2014 **(invited)**
19. **Photon 14 Conference "**Attosecond photonics: from atoms to condensed matter"**,** London, UK September 2014 **(Invited)**
20. **Workshop on Prospective Applications on Attosecond science** "Attosecond control in the condensed phase" London UK September 2014 **(invited)**
21. **Atomic Physics Workshop ATOM13** "Attosecond Physics: Think Optical", Dresden, Germany, November 2013 **(invited)**
22. **PIERS: Progress in Electromagnetics research symposium**. "Attosecond Optical Synthesis: new Routes in attosecond science" Stockholm, Sweden August 2013 **(keynote)**
23. **CLEO-Pacific Rim** "Attosecond Nonlinear Optics" Kyoto Japan 2013 **(invited)**
24. **ATTO13** "Optical Attosecond Pulses" Paris France July 2013 (**upgraded to invited**)
25. **International Workshop of Attosecond Science.** "Attosecond Nonlinear Optics" Beijing, China June 2013 **(invited)**
26. **International Workshop on Attosecond Science:** Challenges for theoretical research. Pohang Korea, June 2013 **(invited)**
27. **DPG Annual Conference**, Hanover, Germany (Gustav-Hertz Prize Laureate Lecture) March 2013
28. **New Directions in quantum Control Landscape**, KITP, Santa Barbara California, USA February 2013 **(Invited)**
29. **Nonlinear Optics**, "Attosecond Photonics: Control of electrons by light fields" Barcelona, Spain, October 2012 **(invited plenary)**
30. **Gordon Conference on Multiphoton Processes** "Light control of electronic processes" Massachusetts, USA June 2012 **(invited)**
31. **High Intensity Lasers and Phenomena (HILAS) "**Attosecond Physics with Sub-optical-cycle Waveforms of Light (March 2012) **(invited)**
32. **EMMI Workshop**, Darmstadt, Germany "Attosecond control of light and matter" November 2011 **(invited)**
33. **Light at Extreme Intensities** Szeged Hungary "Attosecond physics with Synthesized Light Field Transients" November 2011 **(invited)**
34. **Symposium on Attoscience and Ultrafast Quantum Control**, London, United Kingdom "Taming Light Waves: Sub-Optical Cycle Control of Light and Matter" September 2011 (**Plenary)**
35. **International commission of Optics 2011** "Taming Light Waves: Attosecond control of light and Matter" Puebla Mexico, August 2011 (**Plenary-IUPAP Award presentation**).
36. **Laser Physics** Sarajevo, Bosnia and Herzegovina 'Sub-optical-cycle waveform light synthesis: Steering and tracing ionization and electron dynamics in real-time', July 2011 **(invited)**
37. **Frontiers in Optics** Rochester, USA "Attosecond Physics: Real-Time Tracking of Valence Electron Motion in Atoms", October 2010 **(Invited)**
38. **ULTRAFAST PHENOMENA XVII** Snowmass Village, CA, USA Attosecond transient absorption spectroscopy for real-time observation of valence electron motion', July 2010, **(Highest-ranked contribution)**
39. **Atomic Physics Workshop ATOM09** "Intra-atomic attosecond electron motion", Dresden, Germany, November 2009 **(invited)**
40. **LEI conference** "Attosecond Physics: Tracing the motion of electrons in real time", Brasov, Romania October 2009 **(invited/Plenary)**
41. **LEOS IEEE, Conference** Antalya Turkey "En route to the generation and attosecond control of intense single-cycle light pulses", September 2009 **(invited)**
42. **Advanced Laser Technologies ALT** Antalya, Turkey "Nonlinear optics at the single optical cycle limit" September 2009 **(invited)**
43. **Laser Physics** Barcelona, Spain "Attosecond Transient Absorption Spectroscopy" July 2009 **(invited)**
44. **Nonlinear Optics in Guided Geometries** Berlin, Germany "Supercontinuum generation at the single optical cycle limit: New routes to lightwave electronics" May 2009. **(invited)**
45. **ADLIS Workshop** Munich Germany "Attosecond pulse generation and spectroscopy", March 2009 **(Invited)**
46. **Laser Physics** Trondheim, Norway "Sub-100 attosecond pulses in the extreme ultraviolet", July 2008 **(Invited)**
47. **ULTRAFAST PHENOMENA XVI** Stresa, Italy "Sub-100 attosecond soft-x-ray pulses" June 2008 **(invited)**
48. **Workshop on Attosecond Physics** Crete, Greece "Advanced light sources for attosecond metrology", October 2007 **(invited)**
49. **International conference of optics and optical Materials Belgrade**, Serbia "Attoscience: The tools for observing and controlling the electronic motion in atoms and molecules", September 2007 **(invited)**

50. **Marie-Curie conference** Belgrade Servia "Attoscience: The tools for observing and controlling the electronic motion in atoms and molecules", September 2006 **(Best contribution award)**
51. **ICONO-LAT** St. Petersburg, Russia "Isolated Attosecond pulses: Metrology and applications", May 2005 **(Invited)**.
52. **Photonics West** San Jose, California, USA "Generation and metrology of isolated attosecond pulses" January 2006 **(Invited)**

INVITED SEMINARS (SELECTED)

Aarhus University, September 2017 "Exploring the ultrafast frontiers of condensed matter physics" (Host: Lars Madsen)
Rostock University, April 2016 "Exploring the ultrafast frontiers of condensed phase physics" (Host: T. Fennel)
Stanford University, Nov 2015 "Attosecond Photonics" (Host: P. Bucksbaum)
University of Marburg Aug 2014 **"**Attosecond Physics in solids**"** (Host: S. W. Koch)
MPQ Garching, Oct 2013 "Attosecond Physics: Think Optical" (Host: I. J. Cirac)
TU Wien, Vienna Austria July 2012 "Attosecond control of electrons" (Host: A. Baltuska)
University of Crete, Heraklion, Greece June 2012" Taming Light waves: Attosecond control on the nanoscale" (Host: D. Charalambidis)
CFEL General Seminar, Hamburg, Germany Sub-optical-cycle light field synthesis: Triggering & clocking the motion of electrons" Dec 2011 (Host: Robin Santra)
Max Planck Institute for the physics of complex systems, Dresden, Germany "Attosecond physics with field synthesized waveforms" May 2011 (Host: Ulf Saalmann)
Max Planck Institute fur KernPhysik, Bothekolloquium Heidelberg, Germany "Attosecond Physics with Field-Synthesized light" June 2011 (Host: R. Moshammer)
MLL-Kolloquium fuer Kern und TeilchenPhysik LMU Garching Germany "Attosecond control of Light and Matter", June 2011 (Host: P. Thirolf)
Martin Luther University, *Halle*-Wittenberg, Germany "Attosecond Physics" March 2011 (Host: J. Berakdar)
Texas AM, Physics Department College Station, USA "Attosecond Physics: Tracking electronic Processes with sub-100 attosecond resolution", May 2008 (Host: A. Sokolov)
Kansas State University Physics Department, Kansas, USA "Attosecond Physics: Tracking electronic Processes with sub-100 attosecond resolution", March 2008 (Host: Z. Chang)
POSTECH, Physics Department Pohang, South Korea "Attosecond technology" October 2007 (Host: D.E. Kim)
Lawrence Berkeley National Laboratory, Berkeley, USA "Attophysics: Tracking and controlling electronic processes on an atomic time scale", LBNL Berkeley, April 2006 (Host: S.R. Leone)
Imperial college Blackett laboratory-Physics department, London UK "Direct measurement of light waves using attosecond pulses", October 2005 (Host: J. Marangos)

PROFFESIONAL SERVICE TO THE COMMUNITY

ADVISORY BOARD Member

The Institute of Physics for Advanced Materials, Nanotechnology and Photonics, Portugal (IFIMUP) (2018-today)

Governance BOARD Member

The university of Ioannina, Greece (2023-today)

EXPERT EVALUATOR

The Department of Energy (DOE), USA
The Natural Sciences and Engineering Research Council of Canada (NSERC)
The European research council –ERC- panel: fundamental constituents of matte (PE2)
The Israeli Science Foundation (ISF)
The DFG, Germany
FORTH Theodore Papazoglou Synergy Grants (2018-today), Greece
Research Executive Agency-EU P3 Marie-Curie Integration Grants (panels: Physics/Chemistry)
The Helmholtz Society, Germany
The CNRS, France
The Greek ministry of Education
The Romanian Research Council

PEER REVIEWER

Nature, Science, Nature Physics, Nature Photonics, Nature Communications, Science Advances, Physical Review Letters, Physical Review A, Optics Letters, Optics Express, Laser Reviews, Journal of physics B, New Journal of

Physics, Applied Physics B, Journal of Optics A, Applied Physics A.

PROGRAMM COMMITTEE MEMBER/ SESSION/ CONFERENCE ORGANIZER

Conference OF Lasers and Electro-optics (CLEO) Europe 2009: Committee member
Conference OF Lasers and Electro-optics (CLEO) USA 2013: Committee member
Frontiers in Optics (FIO) 2013: Committee member
Conference OF Lasers and Electro-optics (CLEO) Europe 2013: Committee member
Conference OF Lasers and Electro-optics (CLEO) Pacific Rim 2013: Committee member
Conference OF Lasers and Electro-optics (CLEO) USA 2014: Committee member
Attosecond Photonics 2015, Shanghai, China: Co-Chair
Union of Radio Sciences (URSI) 2017: Committee member
Attosecond Photonics 2015 (Joined workshop of IMPRS and Max Planck Centre of Attosecond Science): Chair/Organizer