

Stelios Tzortzakis, PhD

stzortz@iesl.forth.gr

<http://unis.iesl.forth.gr>

<http://www.filamentation.org>

Tel. +30.2810 391396, +30.6947917455



Academic Positions

- Associate Professor, Materials Dept., University of Crete (*elected*)
- Principal Researcher, Head UNIS group, IESL-FORTH, Greece (2009-)
- Researcher, Head UNIS group, IESL-FORTH, Greece (2006-2009)
- Chargé de Recherche CNRS, Ecole Polytechnique, France (2003-)
- Research associate, NTUA, Greece (2003-2004)
- Research associate, Ecole Polytechnique, France (2001-2003)
- Maître des conférences, ENSTA, France (2001-2003)

Education

Ph.D. Nonlinear Optics and Lasers (2001), Ecole Polytechnique, France.

B.Sc. in Physics (1997), Dept. of Physics, University of Crete, Greece.

Academic Honors

- Marie Curie Excellence Grant (~2M€ ; 2006-2010)
- Fellowship from the Ecole Polytechnique (France) (2002-2003)
- Fellowship from the CEA (France) (2001-2002)
- Ph.D. obtained with distinctions.
- Fellowship from the French ministry of education (1998-2001)
- Fellowship from the Ecole Polytechnique (France) (1997-1998)

Skills

Languages: Greek, English, French.

Scientific community

Member of the: Optical Society of America (OSA) and International Society for Optics and Photonics (SPIE)

Active referee at the following journals: Nature Photonics, Physical Review Letters, Physical Review (A,B,E), Optics Letters, Optics Express, JOSA B, Optics Commun., Applied Physics A, Applied Physics B, Journal of Applied Physics, The European Physical Journal D

Research Projects

Long experience (>13 years) from participation in European Union funded projects (in Greece and in France for applications mainly in nonlinear optics and intense fs lasers). National (in France with the CEA for studying the nonlinear propagation of intense fs laser pulses) and bi-national projects (like the French-German "Teramobile" project for the monitoring of the atmosphere using a unique powerful fs mobile laser system). Also, principal investigator of one "ENTER" research project, financed by the Hellenic General Secretariat for Research and Technology. **Marie Curie Excellence Grant award holder** and team leader of a

new research group on secondary femtosecond sources at the IESL-FORTH (~2M€; 2006-2010).

Research Experience

Broad experience in the following domains:

- Nonlinear interactions of intense femtosecond laser pulses with matter.
- Nonlinear laser propagation phenomena - filamentation.
- Intense tunable THz sources and THz nonlinear Optics
- Photonic structuring in the bulk of transparent solid materials.
- Environmental/atmospheric physics.
- Hot/warm and dense plasma physics.

Scientific output and impact

- More than **60 articles** in peer-reviewed journals
- More than **1700 citations; h-index = 20; g-index = 43**
- About **110** International Scientific Conferences and **37 invited talks**

Selected Publications

- **N.-H. Shen, M. Massaouti, M. Gokkavas, J.-M. Manceau, E. Ozbay, M. Kafesaki, T. Koschny, S. Tzortzakis, C. M. Soukoulis**
"Optically implemented broadband blue-shift switch in the terahertz regime"
Phys. Rev. Lett. **106**, 037403 (2011)
- **D. G. Papazoglou, E. K. Efremidis, D. N. Christodoulides, and S. Tzortzakis**
"Observation of abruptly autofocusing waves"
Opt. Lett. **36**, 1842-1844 (2011)
- **D. Abdollahpour, S. Suntsov, D. G. Papazoglou and S. Tzortzakis**
"Spatio-temporal Airy light bullets in the linear and nonlinear regimes"
Phys. Rev. Lett. **105**, 253901 (2010)
- **J.-M. Manceau, N.-H. Shen, M. Kafesaki, C. M. Soukoulis, S. Tzortzakis**
"Dynamic response of metamaterials in the terahertz regime: Blueshift tunability and broadband phase modulation", Appl. Phys. Lett. **96**, 021111 (2010)
- **J.-M. Manceau, A. Averchi, F. Bonaretti, D. Faccio, P. Di Trapani, A. Couairon and S. Tzortzakis**
"Terahertz pulse emission optimization from tailored femtosecond laser pulse filamentation in air", Opt. Lett. **34**, 2165-2167 (2009)
- **D. G. Papazoglou and S. Tzortzakis**
"In-line holographic microscopy for the characterization of ultrafast laser induced perturbations in transparent media", Appl. Phys. Lett. **93**, 041120 (2008)
- **P. Audebert, et al.**, *"Picosecond Time-Resolved Absorption Spectroscopy of Ultrafast Aluminum Plasmas"*, Phys. Rev. Lett. **94**, 025004 (2005)
- **L. Sudrie, A. Couairon, M. Franco, B. Lamouroux, B. Prade, S. Tzortzakis, and A. Mysyrowicz**
"Femtosecond laser induced damages and filamentary propagation in fused silica"
Phys. Rev. Lett. **89**, 186601 (2002).
- **S. Tzortzakis, L. Sudrie, M. Franco, B. Prade, A. Mysyrowicz, A. Couairon, and L. Bergé**
"Self-guided propagation of ultrashort IR laser pulses in fused silica"
Phys. Rev. Lett. **87**, 213902 (2001).
- **S. Tzortzakis, L. Bergé, A. Couairon, M. Franco, B. Prade, and A. Mysyrowicz**
"Break-up and fusion of self-guided femtosecond light pulses in air"
Phys. Rev. Lett. **86**, 5470 (2001).