Curriculum Vitae[♣]

George D. Tsibidis

Personal Data

Name:	George D. Tsibidis
Date of Birth:	16-02-1968
Marital Status:	Married (one child)
Nationality	Greek-British
Email address:	tsibidis@iesl.forth.gr
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Address:	Institute of Electronic Structure and Laser-FORTH, Heraklion, 71110, Greece
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Google Scholar:	http://scholar.google.com/citations?user=HDvZO3gAAAAJ&hl=el
Research Gate:	http://www.researchgate.net/profile/George_Tsibidis

Education

1993-1997	*PhD* from the Physics Department, University of Sussex, UK, Title: The Breit equation and its application to bound state problems for long-range and short-range interactions
1991-1993	*MSc* from the Physics Department, University of Pennsylvania, USA, Title: Beyond the Standard Model
1985 - 1990	*BSc* (Diploma) from the Department of Physics, University of Athens, Greece

Working experience/ Teaching History

2004-	Research Associate, Institute of Electronic Structure and Laser, Foundation for Research and Technology – Hellas, Heraklion, Greece
2008-	Teaching duties at the Technical Educational Institute of Crete, Department of Mathematics, Heraklion, Greece (Teaching of Applied Mathematics using Matlab)
2012-2013	Teaching duties at the University of Crete (Department of Material Science)- Lab instructor (Optics, Electromagnetism, Mechanics, Thermodynamics)

[♣] Last updated: 11 April 2016

2010-2013	Teaching duties at the Technical Educational Institute of Crete, Department of Mathematics, Heraklion, Greece (Teaching of Mathematics)
2003-2004	Military Service
2000-2002	Postdoctoral Research Fellow in the Mathematics Institute, University of Warwick, UK
1999-2000	Postdoctoral Research Fellow in the School of Electrical Engineering, University of Birmingham, UK
1991-1992	Teaching Assistant, Physics Department, University of Pennsylvania, USA
1991-1992	Teaching Assistant, Mathematics Department, University of Pennsylvania, USA

Participation in Research Programs/Actions

2015-(2018)	LinaBioFluid: (Funding scheme: Future Emerging Technologies European Project-Horizon 2020, H2020-FETOPEN-2014-2015RIA).
2015-(2018)	NFFA-RIA: (Nanoscience Foundries and Fine Analysis Research and Innovation Actions)-Partner in the project in charge of the Theoretical investigations-(http://ria.nffa.eu/Default.aspx?section=376)
2013-(2017)	*European Cooperation in Science and Technology (COST action MP1302-Nanospectroscopy:* http://www.cost-nanospectroscopy.eu/) (Management Committee)
2013-(2017)	*European Cooperation in Science and Technology (COST action MP1306-Nanospectroscopy Modern Tools for Spectroscopy on Advanced Materials: a European Modelling Platform* http://www.cost.eu/COST_Actions/mpns/MP1306*): (Management Committee)*
2013-(2017)	*European Cooperation in Science and Technology (COST action MP1208- Developing the Physics and the Scientific community for Inertial Confinement Fusion at the time of NIF ignition (*http://laserfusion.eu/*).*
2015	Greek-German bilateral project: Computational methods for optimization of thin solar cells (SOLAR-NANO)
2014	ΚΡΙΠΗΣ-ΒΙΟΣ-ΙΗΔΛ
2012-2014	'3D Scaffolding hosting neural stem cells: developing Neuroimplants and Neurobiosensors', funded by ESPA. Acronym: 3DNEUROSCAFFOLDS
2010-2011	'*Probing the Micro-Nano Transition: Theoretical and Experimental Foundations, Simulations and Applications*', funded by the EU ERC (Starting Grant). Acronym: MINATRAN.
2009-2010	'*Compact Ultrafast laser Sources Based on Novel Quantum Dot Structures'*, funded by EU-FP7.

2008-2009	'*Laser lab Europe: The Integrated Initiative of European Laser Research Infrastructures*' funded by the EU.
2007-2008	'*European Network of Optical Clusters'*, funded by the EU.
2004-2007	'*Transcription complex dynamics controlling specific gene expression programs*', funded by EU-FP6 (TRANS-REG: LSHG-CT-2004-502950).
2000-2002	*'Amoebae-salmonella spatial dynamics',* Funded by the British Engineering and Physical Sciences Research Council (EPSRC).
1999-2000	*'Diagnostically lossless video compression for angiogram data using a wavelet-based texture modelling approach',* Funded by the British Engineering and Physical Sciences Research Council (EPSRC).
1999-2000	*'The application of the telecommunication networks theories in the description of unmanned aerial vehicles (UAV)',* Funded by the British Defence Evaluation and Research Agency (DERA).

Research interests

- Theoretical modelling and simulation of the interaction of pulsed lasers with semiconducting, metallic and dielectric surfaces (fundamentals),
- Fluid dynamics modelling to explain surface modification effects
- Elaboration of conditions that induce thermo-elastic-plastic effects on thin and bulky semiconducting and metallic surfaces,
- Simulations and modelling in optical fibres (use of Finite Difference Time Domain methods, CUDOS, etc)
- Applications of reaction-diffusion equations to model and simulate biological processes,
- Development of computer algorithms and image analysis techniques to model sub-cellular processes,
- Modelling of brain tumor development

Publications in peer-reviewed international journals ("*" *indicates the corresponding author*)

1. Dessi C., **Tsibidis G.D.**, Dimitris Vlassopoulos D., Corato M., Trofa M., D'Avino G., Maffettone P., Coppola S.(2016), 'Analysis of dynamic mechanical response in torsion', *Journal of Rheology*, **60** (2), 275.

2. Konidakis I., Konstantaki M., **Tsibidis G.D,** and Pissadakis S. (2015), 'An all light driven optofluidic switch developed in a ZnO-overlaid microstructured optical fiber' *Optics Express*, **23** (24) 31496-31509. (selected in https://www.osapublishing.org/vjbo/virtual_issue.cfm)

3. **Tsibidis G.D.*,** Skoulas E., and Stratakis E. (2015) 'Femtosecond laser micro-processing with radially polarized beams' *Optics Letters*, **40** (22), 5172.

4. **Tsibidis G.D.***, Fotakis C., and Stratakis E. (2015), 'From ripples to spikes: a hydro-dynamical physical mechanism to interpret femtosecond laser induced self-assembled structures', *Physical Review B (Rapid Communications)*, **92** ,041405(R).

5. Tzianaki E., Bakarezos M., **Tsibidis G.D**., Orphanos Y., Loukakos P.A., Kosmidis C., Patsalas P., Tatarakis M., and Papadogiannis N.A. (2015), 'High acoustic strains in Si through ultrafast laser excitation of Ti thin-film transducers', *Optics Express*, **23**(13), 17191-17204.

6. Roussou A., **Tsibidis G.D.,** Smyrnakis J, Mageiropoulos M., Efremidis N.K., Jackson A.D.,and Kavoulakis G. (2015), 'Hysteresis and metastability of Bose-Einstein-condensed clouds of atoms confined in ring potentials', *Physical Review A* **91**, 023613.

7. **Tsibidis G.D.*** (2014), 'Erratum: "Thermal response of double-layered metal films after ultrashort pulsed laser irradiation: The role of nonthermal electron dynamics" [Appl. Phys. Lett. **104**, 051603 (2014)], *Applied Physics Letters*, **104**, 079903.

8. **Tsibidis G.D.*,** Stratakis E., Loukakos P.A., and Fotakis C. (2014), 'Controlled ultrashort pulse laser induced ripple formation on semiconductors', *Applied Physics A (Invited Paper)*, **114**:57–68.

9. **Tsibidis G.D.*** (2014), 'Thermal response of double-layered metal films after ultrashort-pulsed laser irradiations: the role of nonthermal electron dynamics', *Applied Physics Letters* **104**, 051603.

10. Barberoglou M., **Tsibidis G.D.*,** Grey D., Magoulakis M., Fotakis C., Stratakis E., and Loukakos P.A. (2013), 'The influence of ultrafast temporal energy regulation on the morphology of Si surfaces through femtosecond double pulse laser irradiation', *Applied Physics A (Rapid Communications)*, **113**, 273-283.

11. **Tsibidis G.D.*,** Barberoglou M., Loukakos P.A., Stratakis E., and Fotakis C. (2012) 'Dynamics of ripple formation on silicon surfaces by ultrashort laser pulses in subablation conditions', *Physical Review B*, **86**, 115316.

12. **Tsibidis G.D.*,** Stratakis E., Aifantis K.E.. (2012) 'Erratum: "Thermoplastic deformation of silicon surfaces induced by ultrashort pulsed lasers in submelting conditions" [J. Appl. Phys. 111, 053502 (2012), *Journal of Applied Physics*, **112,** 089901.

13. **Tsibidis G.D.*,** Stratakis E., Aifantis K.E.. (2012) 'Thermoplastic deformation of silicon surfaces induced by ultrashort pulsed lasers in submelting conditions', *Journal of Applied Physics*, **111,** 053502. (it appears in the Virtual Journal of Nanoscale Science & Technology, Vol 25, issue 11)

14. Daskalaki A, Shalaby N.A, Kux K., Tsoumpekos G., **Tsibidis G.D**., Muskavitch M.A.T, and Delidakis C. (2011). 'Distinct intracellular motifs of Delta mediate its ubiquitylation and activation by Mindbomb1 and Neuralized', *Journal of Cell Biology* **195 (6),** 1017-1031**.**

15. **Tsibidis, G.D.*** Burroughs, N.J, Gaze, W. and Wellington E.M.H. (2011). 'Semi-Automated *Acanthamoeba polyphaga* detection and computation of *Salmonella typhimurium* concentration in spatio-temporal images', *Micron*, **42**(8):911-20.

16. Pissadakis S., Livitziis M., and **Tsibidis G.D.** (2009). 'Investigations on the Bragg Grating Recording in Standard and All-silica Microstructured Optical Fibers Using Picosecond 248nm, Laser Radiation'. *Journal of European Optical Society*, (Rapid Communications), **4**, 09049.

17. **Tsibidis, G.D.*** (2009). **'**Quantitative interpretation of binding reaction for rapidly diffusing proteins using Fluorescence Recovery After Photobleaching'. *Journal of Microscopy*, **233 (3)**, 384-390.

18. Pissadakis S., Livitziis M, **Tsibidis G.D**, Kobelke J., and Schuster K. (2009). 'Type IIA Grating Inscription in Highly Nonlinear Microstructured Optical Fiber'. *IEEE Photonics Technology Letters*, **21**, 227-229.

19. **Tsibidis G.D.*** and Ripoll J. (2008). 'Investigation of binding mechanisms of nuclear proteins using Confocal Scanning Laser Microscopy and FRAP'. *Journal of Theoretical Biology*, **253**, 755-768.

20. Dragestein K.A., van Cappellen W.A., van Haren J., **Tsibidis G.D.**, Akhmanova A., Knoch T.A., Grosveld F., and Galjart N., (2008). 'Dynamic behavior of GFP-CLIP-170 reveals fast protein turnover on microtubule plus ends'. *Journal of Cell Biology* ,**180**, 729-37.

21. **Tsibidis G.D.**[*], and Tavernarakis N. (2007). 'Nemo: a computational tool for analyzing nematode locomotion'. *BMC Neuroscience* **8**, 86.

22. **Tsibidis G.D.**[*] (2004). 'Quark-antiquark bound states and the Breit equation', *Acta Phys. Polonica B.*, **35**, 2329-2365.

Work in Preparation/under Review

23. Tzianaki E., Bakarezos M., **Tsibidis G.D.**, Petrakis S., Loukakos P.A., Kosmidis C., Tatarakis M., and Papadogiannis N.A., (2016), 'Controlling nanoscale acoustic strains in Silicon using chirped femtosecond laser pulses' (*Applied Physics Letters*, (under *review*)).

24. **Tsibidis G.D.**[*], Skoulas E., A.Papadopoulos, and Stratakis E., (2016), (*To be submitted*).

25. **Tsibidis G.D.**[*] (2016), (*Physical Review B*, *In preparation*).

26. **Tsibidis G.D.**[*] et al.(2016), (*Applied Physics A*, *In preparation*).

Book Chapter

1. 'Ultrafast Processes on semiconductor surfaces irradiated by temporally shaped fs laser pulses: tuning & controlling surface micro/nano-structures', by Loukakos P.A., Tsibidis G.D., and Stratakis E.

Participation in Conferences and Workshops

1. **Tsibidis G.D.,** (2016). '(TBA)', (INVITED for Oral talk and Chairman of session on Fundamental Processes) *International High Power Laser Ablation and Directed Energy (HPLA/DE)*, April 4-7, Santa Fe, USA.

2. **Tsibidis G.D.,** (2016). '(TBA)', (INVITED for Oral talk in the Conference 'Developing the Physics and the Scientific Community for Inertial Fusion, April 18 -20, Belgrade, Serbia.

3. **Tsibidis G.D.,** (2016). '(TBA)', (INVITED for Oral talk) Third Annual Conference on Optical Nanospectroscopy*)*, March 22 -25, Rome, Italy.

4. **Tsibidis G.D.,** (2015). 'From ripples to spikes', (INVITED for Oral talk) 5^{th} *Workshop on Laser Induced Periodic Surface Structures*, December 7, St-Etienne, France.

5. **Tsibidis G.D.,** Fotakis C., and Stratakis E., and (2015). 'From ripples to spikes: a hydro-dynamical physical mechanism to interpret femtosecond laser induced self-assembled structures', (INVITED for Oral talk) $13rd^{h}$ *Conference on Laser Ablation (COLA)*, October 6-11, Australia.

6. **Tsibidis G.D., (**2014), 'Controlled ripple formation on Si surfaces after irradiation with temporally separated double pulses: a hydro-dynamical approach', (INVITED for Oral talk), 4^{th} *Worksop on Laser Induced Periodical Structures*, November 11^{th}, Prague, Czech Republic.

7. **Tsibidis G.D., (**2014), **'**From ripples to spikes: a hydro-dynamical physical mechanism to interpret femtosecond laser induced self-assembled structures', (INVITED for Oral talk) *International Conference on Advanced Laser Technologies* (ALT14), October 6-10, Cassis, France.

8. **Tsibidis G.D.,** Barberoglou M., Loukakos P.A., Stratakis E., and Fotakis C (2013). 'Ripple formation dynamics on silicon surfaces after irradiation with ultrashort pulsed lasers in submelting or subalation conditions', (INVITED for Oral talk) *12th Conference on Laser Ablation (COLA)*, October 6-11, Italy.

9. **Tsibidis G.D.** (2012). 'A systematic methodology to investigate ripple formation dynamics on silicon surfaces after irradiation with ultrashort pulsed lasers in submelting or subalation conditions', *INVITED talk at the Workshop: Laser Micro and Nanostructuring : fundamentals and applications*, December 10-12, Paris, France.

10. Barberoglou M., **Tsibidis G.D**., Gray D, Magoulakis E., Fotakis C., Stratakis E., and Loukakos P.A. (2011), 'The influence of femtosecond double pulse laser irradiation on the morphology of Si and ZnO surfaces', *11th Conference on Laser Ablation (COLA)*, November 13-19, Mexico.

11. Papadopoulou E.I, Axente E., Magoulakis E., **Tsibidis G.D.**, Fotakis C. and Loukakos P.A (2010), 'Laser Induced Forward Transfer of ZnO and TiO2 using double ultrashort pulses', *European Material Research Society meeting*, Strasburg 2010, France.

12. **Tsibidis G.D,** (2010), 'Mass and heat transfer in micro- and nano-scale', (*INVITED* talk at the Summer School on Multiscale Material Mechanics and Engineering Sciences, Epanomi, Greece.

13. Roniotis A, Marias K, Sakkalis V, **Tsibidis G.D.,** and Zervakis M., (2009). A complete mathematical study of a 4D model of heterogeneous and anisotropic glioma evolution,. *31st Annual International IEEE EMBS Conference of the IEEE Engineering in Medicine and Biology Society, Conference Proceedings* ***2807-2810****, Minneapolis, Minnesota, USA.*

14. Pissadakis S., **Tsibidis G.D.**, and Livitziis M. (2009). Photosensitivity and Grating Recording in All-silica Standard and Microstructured Optical Fibres using 248nm, fs and ps Laser Radiation. *European Conference on Lasers and Electro-Optics (CLEO) and the 11th European Quantum Electronics Conference 2009, Munich, Germany*.

15. Pissadakis S., Livitziis M., **Tsibidis G.D**., Kobelke J., and Schuster K. (2009). Inscription of type IIA Bragg reflectors in a highly non-linear microstructured optical fiber using deep ultraviolet laser radiation. *SPIE Europe, Optics and Optoelectronis, Proceedings of SPIE, Vol. 7357, 73570K, Prague, Czech Republic.*

16. **Tsibidis G.D.**, Draegenstein K, van Cappellen W., van Haren J., Akhmanova A., Knock T, Grosveld F., Galjart N., (2008). Employment of fluoresnce–based approaches to investigate fast protein association o microtubule plus ends. *LASERLAB Foresight Workshop and Users Meeting, Trends of Laser Applications in Biology and Biomedicine, Heraklion, Crete.*

17. **Tsibidis G.D.** (2008). Investigation of binding mechanisms of nuclear proteins using Confocal Scanning laser Microscopy and FRAP. *LASERLAB Foresight Workshop and Users Meeting, Trends of Laser Applications in Biology and Biomedicine, Heraklion, Crete.*

18. **Tsibidis G.D.**, Ripoll, J., Draegenstein K. And Galjart N. (2006). Study of Binding mechanisms by Fluorescence Recovery after Photobleaching. *Mol. Biol.Cell 17 (suppl). L59. (Published conference abstracts). The American Society for Cell Biology 46th Annual Meeting, 2006, San Diego, USA.*

19. **Tsibidis, G.D.**, Ripoll, J., Draegenstein K. And Galjart N. (2006). Quantifying Microtubule Polymerisation using feature point tracking and trajectory analysis. *Poster talk (INVITED) at the EMBL Summer School on Molecular Imaging, Heidelberg, Germany.*

20. Favicchio R., Garofalakis A., Meyer H., **Tsibidis G.D.**, Zacharakis G., Papamatheakis J., Mamalaki C., and Ripoll J. (2006). Multimodal Imaging in a Transgenic Mouse Model. *EMBL Summer School on Molecular Imaging, Heidelberg, Germany.*

21. **Tsibidis G.D.** (2006). Introduction of the use of Confocal and Two Photon Laser Microscopy in the field of Biology. *INVITED talk at the Workshop: Advances in Optical Technologies for Environment and Industries. Gagliari-Sardinia, Italy.*

22. Burroughs N.J, **Tsibidis G.D.,** Gaze W. and Wellington E.M.H (2003). Study of Spatial Biological Systems Using a Graphical User Interface, *Computer-Human Interaction Conference, Conference Proceedings, **1**, 48-52 (INVITED), Heraklion, Crete, Greece.*

23. Gaze, W., Burroughs N.J., **Tsibidis G.D.**, Wellington E.M.H and Gallagher M.P (2002). Protozoa-bacteria interactions in a model system, *40th Annual Meeting British Section Society of Protozoologists, The Journal of Eukaryotic Microbiology (INVITED talk), Bristol, UK.*

24. Gibson D., **Tsibidis G.D.**, Spann M. and Woolley S (2001). Diagnostically lossless video compression for angiogram data using a wavelet-based texture modeling approach. *Human Vision and Electronic Imaging VI, Proceedings of SPIE, **4299**, 126-134, San Jose, USA.(SPIE Library).*

25. Gibson D., **Tsibidis G.D.**, Spann M. and Woolley S (2001). Angiogram Video Compression using a wavelet-based texture modeling approach**,** *Medical Image Understanding and Analysis, Conference Proceedings, Birmingham, UK.*

Reviewer to peer-reviewed international journals

- *Physical Review Letters,*
- *Physical Review B*
- *Applied Physics A,*
- *Applied Physics Letters,*
- *Physics Letters A,*
- *Optics Letters,*
- *Journal of Laser Micro/Nanoengineering*
- *Biophysical Journal,*
- *Journal of Theoretical Biology,*
- *Journal of Biomedical Engineering,*
- *BMC Neuroscience,*
- *Biocontrol Science and Technology,*
- *Micron*

Computer skills

Matlab, Fortran, C, Maple, Mathematica OptiFDTD, COMSOL (FEMLAB).