

Curriculum Vitae

George D. Tsibidis

Personal Data

Name: George D. Tsibidis
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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 (Supervisor: Prof. Norman Dombey).
- 1991-1993 *MSc* from the Physics Department, University of Pennsylvania, USA.
Title: Beyond the Standard Model (Supervisor: Prof. Mirjam Cvetič).
- 1985-1990 *BSc* (Diploma) from the Department of Physics, University of Athens, Greece.
Title: A classical approach for spin description and connection to a Chern-Simons system (Supervisor: Prof. Christos Ktorides).

Working experience/ Teaching History

- Currently Researcher, Institute of Electronic Structure and Laser, Foundation for Research and Technology – Hellas (IESL-FORTH), Heraklion, Greece.
- 2004-2018 Associated Researcher, Institute of Electronic Structure and Laser, Foundation for Research and Technology – Hellas (IESL-FORTH), Heraklion, Greece.
- 1/9/2017-30/9/2017 Visiting Professor, University of Lyon, Laboratoire Hubert Curien, University of Saint Monnet, Saint-Etienne, France (collaboration with the Group of Profs. J.P. Colombier and F. Garrelie on theoretical aspects of laser-matter interaction).

- 6/2/2017-19/5/2017 Teaching duties in the Department of Material Science, University of Crete, Heraklion, Greece (Course on Special Topics of Computational Methods used in Material Science including heat transfer/diffusion/electromagnetic wave propagation-Course ETY 448-«Ειδικά Κεφάλαια στην Υπολογιστική Επιστήμη Υλικών»).
- 2008-2016 Teaching duties at the Technical Educational Institute of Crete, Heraklion, Greece (Teaching of: Applied Mathematics, Mathematics) in the Department of Sciences and Department of Mechanical Engineering.
- 16/3/2013-31/7/2013 Teaching duties at the University of Crete (Department of Material Science)-«Διδασκαλία Μαθήματος Έργαστήριο Φυσικής II: Ηλεκτρισμός-Οπτική» (Lab Instructor in Laboratory course 'Physics II: Electricity-Optics')
- 1/11/2012-15/3/2013 Teaching duties at the University of Crete (Department of Material Science)-«Διδασκαλία Μαθήματος Έργαστήριο Φυσικής I: Μηχανική-Θερμότητα» (Lab Instructor in Laboratory course 'Physics I: Mechanics-Heat')
- 1/3/2012-15/7/2012 Teaching duties at the University of Crete (Department of Material Science)-«Διδασκαλία Μαθήματος Έργαστήριο Φυσικής II: Ηλεκτρισμός-Οπτική» (Lab Instructor in Laboratory course 'Physics II: Electricity-Optics')
- 2003-2004 Military Service.
- 6/11/2000-6/12/2002 Scientific Research Computer Programmer in the Mathematics Institute, University of Warwick, UK.
- 1/5/2000-31/10/2000 Computer Officer in the School of Electrical Engineering, University of Birmingham, UK.
- 1/10/1999-31/12/1999 Postdoctoral Research Fellow in the School of Electrical Engineering, University of Birmingham, UK.
- 9/3/1998-30/6/1999 Advisor in the Computing Centre, University of Sussex, UK.
- 1991-1992 Teaching Assistant, Physics Department, University of Pennsylvania, USA.
- 1991-1992 Teaching Assistant, Mathematics Department, University of Pennsylvania, USA.

Current Research interests

- Theoretical modelling and simulation of the interaction of pulsed lasers with semiconducting, metallic and dielectric surfaces (fundamental physical mechanisms),
- Theoretical investigation of the formation of nano/micro-sized structures on solids after irradiation with pulses laser sources-craters, ripples, grooves, (fundamentals),
- Theoretical investigation of local nano-heating and substrate modification based on enhanced absorption and near-field properties of metallic nanoparticles,
- Fluid dynamics modelling to explain surface modification effects (fundamentals),
- Exploration of stress/strain generation and thermomechanical effects (fundamentals),

- Electromagnetic wave propagation inside solids (Finite Difference Time Domain techniques),
- 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.).
- Solution of Partial differential equations/ development of efficient numerical schemes

Previous Research interests

- 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,
- Simulation of bound states problems in fermion-antifermion systems for long- and short-range interactions.

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

1. Fuentes-Edfuf Y., Sánchez-Gil J.A., Garcia-Pardo MG., Serna R., **Tsibidis G.D.**, Giannini V., Solis J. and Siegel J., ‘Tuning the period of femtosecond laser induced surface structures in steel: from angled incidence to quill writing’ *Applied Surface Science* **493**, 948 (2019).
2. Petrakakis E., **Tsibidis G.D.***, and Stratakis E., ‘Modelling of the ultrafast dynamics and surface plasmon properties of silicon upon irradiation with mid-IR femtosecond laser pulses’ *Physical Review B* **99**, 195201 (2019).
3. Papadopoulos A., Skoulas E., Mimidis A., Perrakis G., Kenanakis G., **Tsibidis G.D.**, and Stratakis E., ‘Biomimetic omnidirectional anti-reflective glass via ultrafast laser nanostructuring’, *Advanced Materials* **31**, (32), 1901123 (2019).
4. Margiolakis A., **Tsibidis G.D.**, Dani K.M. and Tsironis G.P., ‘Ultrafast dynamics and sub-wavelength periodic structure formation following irradiation of GaAs with femtosecond laser pulses’ *Physical Review B* **98**, 224103 (2018).
5. Museur L., **Tsibidis G.D.**, Manousaki A., Anglos D., and Kanaev A. ‘Surface structuring of rutile TiO₂ (100) and (001) single crystals with femtosecond pulsed laser irradiation’, *Journal of Optical Society of America B*, **35**, 10, 2600 (2018).
6. Orlandi F., Aza E., Bakaimi I, Kiefer K., Klemke B., Zorko A., Arčon D., Stock C., **Tsibidis G.D.**, Green M.A., Manuel P. and Lappas A., ‘Incommensurate atomic and magnetic modulations in the spin-frustrated β -NaMnO₂ triangular lattice’, *Physical Review Materials* **2**, 074407 (2018).
7. **Tsibidis G.D.***, ‘The influence of dynamical change of optical properties on the thermomechanical response and damage threshold of noble metals under femtosecond laser irradiation’, *Journal of Applied Physics* **123**, 085903 (2018).
8. **Tsibidis G.D.***, ‘Ultrafast dynamics of non-equilibrium electrons and strain generation under femtosecond laser irradiation of Nickel’, *Applied Physics A*, **124**,311 (2018).
9. Bakarezos M., Tzianaki E., Petrakis S., **Tsibidis G.D.**, Loukakos P.A., Dimitriou V., Kosmidis C., Tatarakis M., and Papadogiannis N.A., ‘Ultrafast laser pulse chirp effects on laser-generated nanoacoustic strains in Silicon’, *Ultrasonics* **86**, 14-19 (2018).

10. Papadopoulos A., Skoulas E., **Tsibidis G.D.**^{*}, and Emmanuel Stratakis E., ‘Formation of periodic surface structures on dielectrics after irradiation with laser beams of spatially variant polarisation: a comparative study’, [*Applied Physics A* **124**, 146 \(2018\).](#)
11. **Tsibidis G.D.**^{*}, Mimidis A., Skoulas E., Kirner S.V, Krüger J, Bonse J and Stratakis E., ‘Modelling periodic structure formation on 100Cr6 steel after irradiation with femtosecond-pulsed laser beams’, [*Applied Physics A* **124**, 27 \(2018\).](#)
12. Zuhlke C., **Tsibidis G.D.**, Anderson T., Stratakis E., Gogos G., and Alexander R.D., ‘Investigation of femtosecond laser induced ripple formation on copper for varying incident angle’, [*AIP Advances* **8**\(1\):015212 \(2018\).](#)
13. Gaković B., **Tsibidis G.D.**, Skoulas E., Petrović S., Vasić B. and Stratakis E., ‘Selective ablation of Ti/Al nano-layer thin film by single femtosecond laser pulse’, [*Journal of Applied Physics* **122**, 223106 \(2017\).](#)
14. **Tsibidis G.D.**^{*}, and Stratakis E., ‘Ripple formation on silver after irradiation with radially polarized ultrashort-pulsed lasers’, [*Journal of Applied Physics* **121**, 163106 \(2017\).](#)
15. **Tsibidis G.D.**^{*}, Skoulas E., A.Papadopoulos, and Stratakis E., ‘Convection roll-driven generation of supra-wavelength periodic surface structures on dielectrics upon irradiation with femtosecond pulsed lasers’, [*Physical Review B \(Rapid Communications\)* **94**, 081305 \(2016\).](#)
16. Tzianaki E., Bakarezos M., **Tsibidis G.D.**, Petrakis S., Loukakos P.A., Kosmidis C., Tatarakis M., and Papadogiannis N.A., ‘Controlling nanoscale acoustic strains in Silicon using chirped femtosecond laser pulses’, [*Applied Physics Letters*, **108** \(26\), 254102 \(2016\).](#)
17. Dessi C., **Tsibidis G.D.**, Dimitris Vlassopoulos D., Corato M., Trofa M., D’Avino G., Maffettone P., and Coppola S., ‘Analysis of dynamic mechanical response in torsion’, [*Journal of Rheology*, **60** \(2\), 275 \(2016\).](#)
18. Konidakis I., Konstantaki M., **Tsibidis G.D.** and Pissadakis S., ‘An all light driven optofluidic switch developed in a ZnO-overlaid microstructured optical fiber’, [*Optics Express*, **23** \(24\) 31496-31509 \(2015\).](#)
19. **Tsibidis G.D.**^{*}, Skoulas E., and Stratakis E., ‘Ripple formation on Nickel irradiated with radially polarized femtosecond beams’, [*Optics Letters*, **40** \(22\), 5172 \(2015\).](#)
20. **Tsibidis G.D.**^{*}, Fotakis C., and Stratakis E., ‘From ripples to spikes: a hydro-dynamical physical mechanism to interpret femtosecond laser induced self-assembled structures’, [*Physical Review B \(Rapid Communications\)*, **92**, 041405 \(2015\).](#)
21. Tzianaki E., Bakarezos M., **Tsibidis G.D.**, Orphanos Y., Loukakos P.A., Kosmidis C., Patsalas P., Tatarakis M., and Papadogiannis N.A., ‘High acoustic strains in Si through ultrafast laser excitation of Ti thin-film transducers’, [*Optics Express*, **23**\(13\), 17191-17204 \(2015\).](#)
22. Roussou A., **Tsibidis G.D.**, Smyrnakis J, Mageiropoulos M., Efremidis N.K., Jackson A.D., and Kavoulakis G., ‘Hysteresis and metastability of Bose-Einstein-condensed clouds of atoms confined in ring potentials’, [*Physical Review A* **91**, 023613 \(2015\).](#)
23. **Tsibidis G.D.**, Stratakis E., Loukakos P.A., and Fotakis C., ‘Controlled ultrashort pulse laser induced ripple formation on semiconductors’, [*Applied Physics A \(Invited Paper\)*, **114**:57–68 \(2014\).](#)
24. **Tsibidis G.D.**^{*}, ‘Thermal response of double-layered metal films after ultrashort-pulsed laser irradiations: the role of nonthermal electron dynamics’, [*Applied Physics Letters* **104**, 051603 \(2014\).](#)

25. Barberoglou M., **Tsibidis G.D.***, Grey D., Magoulakis M., Fotakis C., Stratakis E., and Loukakos P.A., ‘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 (2013).
26. **Tsibidis G.D.***, Barberoglou M., Loukakos P.A., Stratakis E., and Fotakis C., ‘Dynamics of ripple formation on silicon surfaces by ultrashort laser pulses in subablation conditions’, *Physical Review B*, **86**, 115316 (2012).
27. **Tsibidis G.D.***, Stratakis E., Aifantis K.E., ‘Thermoplastic deformation of silicon surfaces induced by ultrashort pulsed lasers in submelting conditions’, *Journal of Applied Physics*, **111**, 053502 (2012).
28. Daskalaki A, Shalaby N.A, Kux K., Tsoumpekos G., **Tsibidis G.D.**, Muskavitch M.A.T, and Delidakis C., ‘Distinct intracellular motifs of Delta mediate its ubiquitylation and activation by Mindbomb1 and Neuralized’, *Journal of Cell Biology* **195 (6)**, 1017-1031 (2011).
29. **Tsibidis, G.D.***, Burroughs, N.J, Gaze, W. and Wellington E.M.H., ‘Semi-Automated *Acanthamoeba polyphaga* detection and computation of *Salmonella typhimurium* concentration in spatio-temporal images’, *Micron*, **42(8)**:911-20 (2011).
30. Pissadakis S., Livitziis M., and **Tsibidis G.D.**, ‘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 (2009).
31. **Tsibidis, G.D.***, ‘Quantitative interpretation of binding reaction for rapidly diffusing proteins using Fluorescence Recovery After Photobleaching’. *Journal of Microscopy*, **233 (3)**, 384-390 (2009).
32. Pissadakis S., Livitziis M, **Tsibidis G.D.**, Kobelke J., and Schuster K., ‘Type IIA Grating Inscription in Highly Nonlinear Microstructured Optical Fiber’. *IEEE Photonics Technology Letters*, **21**, 227-229 (2009).
33. **Tsibidis G.D.*** and Ripoll J., ‘Investigation of binding mechanisms of nuclear proteins using Confocal Scanning Laser Microscopy and FRAP’. *Journal of Theoretical Biology*, **253**, 755-768 (2008).
34. Dragestein K.A., van Cappellen W.A., van Haren J., **Tsibidis G.D.**, Akhmanova A., Knoch T.A., Grosveld F., and Galjart N., ‘Dynamic behavior of GFP-CLIP-170 reveals fast protein turnover on microtubule plus ends’. *Journal of Cell Biology* **180**, 729-37 (2008).
35. **Tsibidis G.D.***, and Tavernarakis N., ‘Nemo: a computational tool for analyzing nematode locomotion’. *BMC Neuroscience* **8**, 86 (2007).
36. **Tsibidis G.D.***, ‘Quark-antiquark bound states and the Breit equation’, *Acta Phys. Polonica B.*, **35**, 2329-2365 (2004).

Manuscripts submitted/under Submission (“*” indicates the corresponding author)

37. **Tsibidis G.D.***, Mouchliadis L., Pedio M., Stratakis E., ‘Modelling ultrafast non-equilibrium carrier dynamics and relaxation processes upon irradiation of hexagonal Silicon-Carbide with femtosecond laser pulses’ (*Under Review* <http://arxiv.org/abs/1910.14501>)
38. **Tsibidis G.D.***, Stratakis E., ‘Ionization processes and laser induced periodic surface structures in dielectrics with mid-infrared femtosecond laser pulses’ ‘Invitation for Special Collection: [Intense ultra-short pulses from femtosecond to attosecond](#)’ (*Under Review*)

Review Paper

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

Book Chapter

1. Chapter Title: ‘Ultrafast Processes on semiconductor surfaces irradiated by temporally shaped fs laser pulses: tuning & controlling surface micro/nano-structures’, by P.A.Loukakos, **G.D.Tsibidis** and E.Stratakis, in *Pulsed Laser Ablation, Advances and Applications in Nanoparticles and Nanostructuring Thin films*, editors: Ion N. Mihailescu, Anna Paola Caricato, Pan Stafford (1017).

Full articles in Conference proceedings (“*” indicates the corresponding author)

1. Konstantaki M., **Tsibidis G.D.**, Childs P., Sozzi M, and Pissadakis S. (2013), ‘Laser etched gratings inside microstructured optical fibres’, *MATEC Web of Conferences* **8**, 05001 (2013).
2. 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, Conference Proceedings*, June 14th-19th, Munich, Germany.
3. 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 Optics + Optoelectronics, 2009, Prague, Czech Republic Proceedings of SPIE*, **75**, 7357 (2009).
4. Roniotis A., Marias K., Sakkalis V., **Tsibidis G.D.**, and Zervakis M., (2009), ‘A complete mathematical study of a 3D model of heterogeneous and anisotropic glioma evolution’, *Engineering in Medicine and Biology Society, 2009. EMBC 2009. Annual International Conference of the IEEE*, 2807-2810, (2009)
5. Loukakos P.A., Stratakis E., **Tsibidis G.D.**, Gray D, Barberoglou M, Fotakis C., ‘Ultrafast processes on semiconductor surfaces irradiated by temporally shaped fs Laser Pulses:Tuning and Controlling surface Micro/Nano-Structures’, *Journal of. Modern Trends in Physics Research*, **14**, 42-54 (2014).
6. Burroughs N.J., **Tsibidis G.D.**, Gaze W., and Wellington L.,(2003), ‘Study of spatial biological systems using a graphical user interface’, 10th International Conference on Human-Computer Interaction 2003, Heraklion, Crete, *Proceedings, CRC Press, pp. 48-52.*
7. **Tsibidis G.D.**, Gibson D., Spann M., Woolley S. (2001), ‘Diagnostically lossless video compression for angiogram data using a wavelet-based texture modelling approach’ *Photonics West 2001-Electronic Imaging, 2001, San Jose, CA, USA, Proceedings of SPIE* **4299** 127 (2001).

Workshop/Conference organisation

1. Organiser of the 6th *International Workshop on Laser Induced Periodic Surface Structures (LIPSS)*, November 24th-25th, 2016, Heraklion, Crete, Greece.

Participation in Conferences (with appearance in the Abstracts-asterisks indicate person who presented the talk)

1. **Tsibidis G.D.*** (2019) ‘Modelling of the ultrafast dynamics and surface plasmon properties upon irradiation of Silicon with mid-infrared femtosecond laser pulses’, (INVITED for Oral talk, **CHAIRMAN of a session and member of the Program Organising Committee**), *International Conference on Ultrafast Optical Science*, September 30th-October 4th, Lebedev Physical Institute, Moscow, Russia.
2. **Tsibidis G.D.*** (2019), ‘Irradiation of semiconductors with mid-infrared femtosecond laser pulses’, (INVITED for Oral talk), *ALT19*, 15-20 September 15th -20th, Prague, Czech Republic.
3. **Tsibidis G.D.*** E.Petrakakis, E.Stratakis (2019), ‘Ultrafast dynamics of silicon after irradiation with mid-infrared femtosecond laser pulses’, (INVITED for Oral talk) *15th Conference on Laser Ablation (COLA)*, September 8-13, Hawaii, USA.
4. **Tsibidis G.D.*** (2019), ‘Ultrafast phenomena following Mid-infrared femtosecond laser pulsed irradiation of Silicon’, (INVITED for Oral talk) *International Symposium “Fundamentals of Laser Assisted Micro- and Nanotechnologies” (FLAMN-19)* June 30- July 04, St. Petersburg, Russia.
5. **Tsibidis G.D.*** (2018) ‘Periodic Structure Formation on Dielectrics After Irradiation with ultrashort pulsed lasers’ (INVITED for Oral talk and **CHAIRMAN of session**) *International Conference on Ultrafast Optical Science*, October 1st-5th, Lebedev Physical Institute, Moscow, Russia.
6. Skoulas E, Mimidis A., Livakas N., **Tsibidis G.D.***, Stratakis E (2018) ‘Versatile surface processing using CV femtosecond laser pulses’ (INVITED for oral talk) *International Conference on Photo-Excited Processes and Applications*, September 10th-14th, Vilnius, Lithuania.
7. **Tsibidis G.D.***, Skoulas E, Mimidis A., Stratakis E (2018) ‘Ultrafast dynamics of non-equilibrium electrons and strain generation under femtosecond laser irradiation of Nickel’ (INVITED for oral talk) *International Conference on Photo-Excited Processes and Applications*, September 10th-14th, Vilnius, Lithuania.
8. **Tsibidis G.D.***, Skoulas E, Mimidis A., Stratakis E, (2018) ‘Laser induced biomimetic structures: from fundamentals to applications’ (**KEYNOTE** Invited Talk) *International Workshop on Frontiers in Lasers and Applications (FLA 2018)*, April 16-19, Okinawa-Ishigaki, Japan.
9. **Tsibidis G.D.***, (2018) ‘Periodic Structure Formation on Dielectrics After Irradiation with ultrashort pulsed lasers’ (INVITED for Oral talk and **CHAIRMAN** of session) *International High Power Laser Ablation and Directed Energy (HPLA/DE)*, March 26-29, Santa Fe, USA. (Funding from the [US Air Force Windows on Science program](#)).
10. **Tsibidis G.D.***, Skoulas E., Papadopoulos A., and Stratakis E., (2017), ‘Convection roll- driven generation of supra-wavelength periodic surface structures on dielectrics upon irradiation with femtosecond pulsed lasers’, (INVITED for Oral talk) *14rd Conference on Laser Ablation (COLA)*, September 3-8, Marseille, France.
11. **Tsibidis G.D.**, (2017), ‘Ultrafast dynamics of electrons and strain generation after femtosecond pulsed laser irradiation of Nickel’, *14rd Conference on Laser Ablation (COLA)*, September 3-8, Marseille, France.
12. Fuentes-Edfuf Y., Florian C., Garcia-Lechuga M., Solis J., Mimidis A., Skoulas E., **Tsibidis G.D.**, Stratakis E., and Siegel J.(2017), ‘Understanding angle dependence of LIPSS in steel’, *Conference on Laser Ablation (COLA)*, September 3-8, Marseille, France.
13. **Tsibidis G.D.**, Stratakis E., and Loukakos P. (2016), ‘Ultrafast laser-induced processes on surfaces at the micro/nano-scale by temporally-shaped fs laser pulses’, *10th International Conference on Photoexcited Processes and Applications (ICPEPA-10)*, August 29th - September 2nd, 2016, Brasov, Romania.

14. **Tsibidis G.D.***, (2016). ‘Periodical structures formation on surfaces of solids after irradiation with pulsed lasers’, (INVITED for Oral talk in the Conference ‘*Developing the Physics and the Scientific Community for Inertial Fusion*’, April 18 -20, Belgrade, Serbia.
15. **Tsibidis G.D.***, (2016). ‘From ripples to spikes’, (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.
16. **Tsibidis G.D.***, (2016). ‘Interpretation of formation of periodical structures on solids upon irradiation with lasers’, (INVITED for Oral talk) Third Annual Conference on Optical Nanospectroscopy), March 22 -25, Rome, Italy.
17. Bakarezos E., Orphanos I., Tzianaki E., Kaselouris E., Dimitriou V., **Tsibidis G.D.**, Loukakos P.A., Papadogiannis N.A., Tatarakis M., (2015), ‘Ultrafast dynamics and imaging of laser-generated nano-acoustic waves in metal/substrate layered systems’, *Fifth International School and Conference on Photonics, Photonica 2015*, August 24th-28th, Belgrade, Serbia.
18. **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’, (INVITED for Oral talk) 13rdth *Conference on Laser Ablation (COLA)*, October 6-11, Australia.
19. **Tsibidis G.D.***, (2014), ‘Fundamentals of surface modification after irradiation of silicon with ultrashort laser pulses: From ripples to spikes’, (INVITED for Oral talk) *International Conference on Advanced Laser Technologies (ALT14)*, October 6-10, Cassis, France.
20. **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 subablation conditions’, (INVITED for Oral talk) 12th *Conference on Laser Ablation (COLA)*, October 6-11, Italy.
21. 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.
22. 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*, June 7th-10th, Strasburg 2010, France.
23. 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*, September 2nd-6th, Minneapolis, Minnesota, USA.
24. Pissadakis S., **Tsibidis G.D.**, and Livtziis 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, Conference Proceedings*, June 14th-19th, Munich, Germany.
25. Pissadakis S., Livtziis 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 Optoelectronics, Proceedings of SPIE, Vol. 7357, 73570K*, April 20-23th, Prague, Czech Republic.
26. **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. (Conference abstracts). The American Society for Cell Biology 46th Annual Meeting, 2006*, December 9th-13th, San Diego, USA.

27. 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), June 22nd- 27th, Heraklion, Crete, Greece.
28. 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. *Photonics West, Human Vision and Electronic Imaging VI, Proceedings of SPIE, 4299*, 126-134, January 20th-26th, San Jose, USA.(SPIE Library).
29. 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.

Participation in Workshops (asterisks indicate person who presented the talk)

1. **Tsibidis G.D.***, (2019). ‘Modelling of the ultrafast dynamics and surface plasmon properties upon irradiation of Silicon with mid-infrared femtosecond laser pulses’, (INVITED for Oral talk) at 7th Workshop ELI-ALPS User, March 7th-8th, 2019, Szeged, Hungary.
2. **Tsibidis G.D.***, (2019). ‘Electronic excitation following irradiation with ultrashort-pulsed lasers: The role of nonthermal electrons’, (INVITED for Oral talk) at 1st Working Group Meeting of COST Action ‘Towards understanding and modelling intense electronic excitation’, March 6th, 2019, Porto, Portugal.
3. **Tsibidis G.D.***, (2016). ‘Convection roll-driven generation of supra-wavelength periodic surface structures on dielectrics upon irradiation with femtosecond pulsed lasers’, (INVITED for Oral talk) 6th Workshop on Laser Induced Periodic Surface Structures, November 24th-25th, 2016, Heraklion, Crete, Greece.
4. **Tsibidis G.D.***, (2015). ‘A consistent theoretical framework to predict self-assembled structures on solids upon irradiation with ultrashort pulsed lasers’, (INVITED for oral talk) 5th Workshop on Laser Induced Periodic Surface Structures, December 7th, St-Etienne, France.
5. **Tsibidis G.D.***, (2012). ‘A systematic methodology to investigate ripple formation dynamics on silicon surfaces after irradiation with ultrashort pulsed lasers in submelting or subablation conditions’, (INVITED for oral talk) at the Workshop: Laser Micro and Nanostructuring: fundamentals and applications, December 10-12, Paris, France.
6. **Tsibidis G.D.***, (2010), ‘Mass and heat transfer in micro- and nano-scale’, (INVITED for oral talk) at the Summer School on Multiscale Material Mechanics and Engineering Sciences, August 21st-30th, Epanomi, Greece.
7. **Tsibidis G.D.***, Draegenstein K, van Cappellen W., van Haren J., Akhmanova A., Knock T, Grosveld F., Galjart N., (2008). Employment of fluorescence-based approaches to investigate fast protein association on microtubule plus ends. *LASERLAB Foresight Workshop and Users Meeting, Trends of Laser Applications in Biology and Biomedicine, Heraklion, Crete.*
8. **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.*
9. **Tsibidis G.D.*** (2006). Introduction of the use of Confocal and Two Photon Laser Microscopy in the field of Biology. *INVITED for oral talk at the Workshop: Advances in Optical Technologies for Environment and Industries. Gagliari-Sardinia, Italy.*
10. **Tsibidis G.D.***, Ripoll, J., Draegenstein K. And Galjart N. (2006). Quantifying Microtubule Polymerisation using feature point tracking and trajectory analysis. *Poster talk (INVITED for oral talk) at the EMBL Summer School on Molecular Imaging, Heidelberg, Germany.*
11. 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, Bristol, UK.*

Participation in Research Programs/Actions

- 2018-2022 *European Cooperation in Science and Technology (COST action CA17126-Nanospectroscopy: Towards understanding and modelling intense electronic excitation:* <http://www.cost-ca17126.industriales.upm.es/>) (Management Committee).
- 2017-2021 **MOULDTEX**: (Funding scheme: H2020-IND-CE-2016-17, FOF-06-2017 RIA) ‘*Friction optimization of seals through advanced laser surface texturing of moulds*’. **Role in project:** Theoretical investigation of the laser-matter interaction physical processes that explain formation of structures of variable shape and size and periodicity.
- 2018-2019 ‘*Development of biomimetic micro/nano-sized structures through modification of the polarisation state of ultrashort-pulsed lasers*’ (Ανάπτυξη βιομιμητικών μικρο/νανο-δομών μέσω διαμόρφωσης της πόλωσης υπερβραχέων παλμών λέιζερ). (Funding Scheme: ΕΣΠΑ 2014-2020). **Role in project:** Theoretical investigation of laser-matter interaction related physical processes towards laser-based production of biomimetic structures.
- 2015-2018 **LinaBioFluid**: (Funding scheme: Future Emerging Technologies European Project-Horizon 2020, H2020-FETOPEN-2014-2015RIA. **Role in project:** Theoretical investigation of the laser-matter interaction physical processes towards producing biomimetic structures.
- 2015-2018 NFFA-RIA: (Nanoscience Foundries and Fine Analysis Research and Innovation Actions)-Partner in the project representing IESL-FORTH)- **Role in project:** to lead the theoretical activities related to the theoretical investigation of the physical processes that account for surface modification. In charge of the Theoretical investigations/ultrafast phenomena- (<http://www.nffa.eu/offer/theory-simulation/installation-3/multiscale-modeling-of-materials-under-extreme-irradiation/>).
- 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/>).
- 2015-2015 Greek-German bilateral project: ‘*Computational methods for optimization of thin solar cells*’ (SOLAR-NANO). **Role in project:** To lead the theoretical activities related to the periodic structure formation on metals/dielectrics/semiconductors after irradiation with ultrashort-pulsed lasers (sub-ablation regime).
- 2014-2014 ΚΡΙΠΗΣ-ΒΙΟΣ-ΙΗΔΛ). **Role in project:** To lead the theoretical activities related to the periodic structure formation on metals/dielectrics/semiconductors after irradiation with ultrashort-pulsed lasers (sub-ablation regime).
- 2012-2014 ‘*3D Scaffolding hosting neural stem cells: developing Neuroimplants and Neurobiosensors*’, funded by ESPA. Acronym: 3DNEUROSCAFFOLDS. **Role in project:** To lead the theoretical activities related to the periodic structure formation on silicon after irradiation with ultrashort-pulsed lasers (sub-ablation regime).
- 2010-2011 ‘*Probing the Micro-Nano Transition: Theoretical and Experimental Foundations, Simulations*

and Applications’, funded by the EU ERC (Starting Grant). Acronym: MINATRAN. **Role in project:** To lead the theoretical activities related to the periodic structure formation on silicon after irradiation with ultrashort-pulsed lasers (elasto-plastic regime).

- 2009-2010 ‘*Compact Ultrafast laser Sources Based on Novel Quantum Dot Structures*’, funded by EU-FP7. **Role in project:** To lead the theoretical activities related to the periodic structure formation on solids after irradiation with ultrashort-pulsed lasers.
- 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. **Role in project:** To lead the theoretical activities related to electromagnetic wave propagation inside fused silica.
- 2004-2007 ‘*Transcription complex dynamics controlling specific gene expression programs*’, funded by EU-FP6 (TRANS-REG: LSHG-CT-2004-502950). **Role in project:** Development of theoretical models (based on reaction-diffusion) and computational algorithms to describe protein diffusion inside biological cells.
- 2000-2002 ‘*Amoebae-salmonella spatial dynamics*’, Funded by the British Engineering and Physical Sciences Research Council (EPSRC). **Role in project:** Development of theoretical models (based on reaction-diffusion) and computational algorithms (image analysis techniques) to describe protozoa movement inside complex biological material.
- 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). **Role in project:** Development of computational codes to produce compress images
- 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). **Role in project:** Development of theoretical models (based on small-world networks) to compute smallest route in particular problems.

Reviewer to peer-reviewed international journals

Nature-Scientific Reports, Advanced Functional Materials, ACS Photonics, Physical Review Letters, Physical Review Applied, Physical Review Materials, Physical Review B, Physical Review E, Journal of Physics D, Applied Physics A, Applied Physics B, Journal of Applied Physics, Applied Physics Letters, Materials, Physics Letters A, Optics Letters, Optical Materials Express, Applied Optics, Thin Solid Films, Journal of Laser Micro/Nanoengineering, Biophysical Journal, Journal of Theoretical Biology, Journal of Biomedical Engineering, BMC Neuroscience, Biocontrol Science and Technology, Micron.

Supervision.

1. Spyridon Georgopoulos: MSc in 2017. (Title of MSc thesis: ‘*Interaction of ultra-short laser pulses with solid surfaces and double-layers*’).
2. Emmanuel Petrakakis: PhD Student. (Theoretical aspects of laser-matter interaction)
3. Maria-Christina Velli: PhD Student (Materials and Predictive modelling techniques)

4. Antonios-Stylianos Valavanis: BSc Student (Mathematics Department): Theoretical investigation of laser matter interaction-development of algorithms