

Curriculum Vitae

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

- 2004- Associated Researcher, Institute of Electronic Structure and Laser, Foundation for Research and Technology - Hellas ([IESL-FORTH](#)), Heraklion, Greece.
- 1/3/2022-31/7/2022 Teaching duties in the Department of Material Science, [University of Crete](#), Heraklion, Greece (Lecturer of Course ‘*General Mathematics II*’-ETY112).
- 1/3/2021-31/7/2021 Teaching duties in the Department of Physics, [University of Crete](#), Heraklion, Greece (1. Lecturer of Course ‘*Introduction to Circuit theory*’, 2. Assistant in lab Course ‘*Physics II-Electricity*’).

- 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: multiscale modelling, excitation, ultrafast processes, investigation of electron-phonon coupling, electron-electron scattering, out-of-equilibrium processes, relaxation processes, surface plasmon excitation, optical parameter evolution), Density Functional Theories Calculations
- Machine-learning based approaches in the investigation of laser-patterning
- Introduction of spin-temperature to investigate of role of spin in magnetic materials relaxation processes and how patterned magnetic materials influence demagnetisation (new direction)

- Theoretical investigation of the formation of nano/micro-sized structures on solids after irradiation with pulses laser sources-craters, ripples, grooves, spikes (fundamentals: heat diffusion equations, phase transitions),
- 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: Navier-Stokes equations),
- Exploration of stress/strain generation and thermomechanical effects (fundamentals: Elastoplastic equations),
- 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

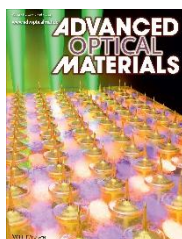
Previous Research interests

- 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 tumour 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)

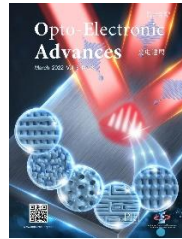
1. Maragkaki S., Vlahou M., Perrakis G., Manousaki A., **Tsibidis GD.**, Stratakis E. ‘Investigation of the Thickness-Dependent Formation of High-Spatial-Frequency LIPSS in Mo Thin Films Induced by UV Femtosecond Lasers’ (**Under Submission**).
2. Vlahou M. **Tsibidis GD***, Stratakis E., ‘Fabrication of Laser-Induced Periodic Surface Structures on Bulk Polycarbonate Using Ultrafast Laser Processing in the Infrared Regime’ (**Under Submission**)
3. Dimitris Tsikritzis, Stella Maragkaki, Marinos Tountas, Nikos Kavousanos, Andreas Michael, **Tsibidis GD**, Maria Pervolaraki, Dimitra Vernardou, Emmanuel Stratakis, Emmanuel Kymakis, ‘Laser-Reduced Graphene Oxide as Electrode for ITO-Free Perovskite Solar Cells and Supercapacitors’, (**Under review**)
4. Kanaev A., **Tsibidis GD.**, Stratakis E. and Museur L., ‘Periodic surface structuring of rutile TiO₂ single crystal with cross- polarized beams of UV femtosecond laser: Effect of the interpulse delay on the formation mechanism’ (**Under review**).
5. **Tsibidis GD**, ‘Influence of Inter-Pulse Delay and Geometric Constraints on Damage and Optical Characteristics in thin Metal Targets Irradiated by Double Ultrashort Laser Pulses’ (**To appear in Applied Surface Science**).
6. **Tsibidis GD***, Vlahou M., Maragkaki S., Konidakis I., Stratakis E., ‘Deciphering Carrier Dynamics in Polycarbonate following excitation with Ultrashort Laser Pulses’ [*Journal of Applied Physics* **138**, 053103 \(2025\).](#) (**Editor’s Pick**).
7. Fraggelakis F., Lingos P., **Tsibidis GD**, Cusworth E., Kravets VG, Grigorenko AN, Kabashin AV, Stratakis E, ‘Highly-ordered LIPSS fabricated over large area on thin Au film by double-pulse femtosecond laser structuring for ultrasensitive plasmonic biosensing applications’ [*ACS Nano* **19** \(25\) 2358 \(2025\).](#)
8. Vlahou M., Protopapa N., Maragkaki S., **Tsibidis GD** and Emmanuel Stratakis, ‘Fabrication of highly uniform laser-induced periodic structures on polycarbonate via UV femtosecond pulses’, [*Optics and Laser Technology* **189** 113121 \(2025\).](#)

9. Chapalo I., Sarakatsianos V., Grantzioti E., Konstantaki M., **Tsibidis GD**, Manouras T., Vamvakaki M., Pissadakis S., 'Inscription of Bragg reflectors in polypropylene no-core optical fibers using 248 nm laser radiation', [*Optics Express* **32** \(26\), 45554 \(2024\).](#)
10. Biljana B., Petrovic S., Siogka C., Milovanovic D., Momčilović M., **Tsibidis GD**, Stratakis E., 'Selective ablation and laser-induced periodical surface structures (LIPSS) produced on (Ni/Ti) nano layer thin film with ultra-short laser pulses', [*Photonics* **11** \(1\), 1054 \(2024\).](#)
11. **Tsibidis G.D.***, Stratakis E., 'Tailoring the ultrafast dynamics and electromagnetic surface modes on silicon upon irradiation with mid-infrared femtosecond laser pulses using SiO₂ coatings', [*Physical Review B* **109**, 184113 \(2024\).](#)
12. Vilkevičius K., **Tsibidis G.D.**, Selskis A., Stratakis E., and Stankevičius E., 'Plasmonic structures formation in different thicknesses of gold film using direct laser writing', [*Advanced Optical Materials* **2400172** \(2024\).](#), (**Inside of Front Cover**).



13. Kanaev A., Perrakis G., **Tsibidis G.D.**, Stratakis E., Englezis A, and Museur L., 'Investigating the transition from high to low spatial frequency periodic nanoripples on TiO₂ (001) upon irradiation with UV-femtosecond pulses', [*Applied Surface Science* **659**, 159853 \(2024\).](#)
14. Velli M.C., Maragkaki S., Vlahou M., **Tsibidis G.D.***, and Stratakis E., 'Evaluation of the role of pulse duration and film thickness on the damage threshold of metal thin films irradiated with femtosecond laser pulses', [*Applied Surface Science* **657**, 159810 \(2024\).](#)
15. Perrakis G., Tsilipakos O., **Tsibidis G.D.**, and Stratakis E., 'Impact of Hybrid Electromagnetic Surface Modes on the Formation of Low Spatial Frequency LIPSS: A Universal Approach', [*Laser & Photonics Reviews* **2301990** \(2024\).](#)
16. **Tsibidis G.D.***, Stratakis E., 'Influence of Antireflection Si coatings on the Damage Threshold of fused silica upon irradiation with Mid-IR femtosecond laser pulses', [*Optics Letters* **48** \(18\), 4841 \(2023\).](#)
17. Lingos P., Perrakis G., Tsilipakos O., **Tsibidis G.D.**, Stratakis E., 'Impact of plasmonic modes on the formation of self-organised nano-patterns in thin films', [*Optics and Laser Technology* **163**, 109415 \(2023\).](#)
18. Maragkaki S., **Tsibidis G.D.***, Haizer L., Pápa Z., Flender R., Kiss B., Márton Z., Stratakis E., 'Tailoring surface topographies on solids with Mid-IR femtosecond laser pulses', [*Applied Surface Science* **612**, 155879 \(2023\).](#)
19. **Tsibidis G.D.***, Stratakis E., 'Ionization dynamics and damage conditions in fused silica irradiated with Mid-Infrared femtosecond pulses', [*Applied Physics Letters* **122** \(4\) 04350 \(2023\).](#)
20. **Tsibidis G.D.***, Stratakis E., 'The impact of the substrate on the opto-thermal response of thin metallic targets following irradiation with femtosecond laser pulses', [*Journal of Central South University* **29**, 3410 \(2022\).](#)
21. **Tsibidis G.D.***, Lingos P, Stratakis E., 'The synergy of electromagnetic effects and thermophysical properties of metals in the formation of laser induced periodic surface structures', [*Optics Letters* **47**, 4251 \(2022\).](#)
22. **Tsibidis G.D.***, Mansour E., Stratakis E., 'Damage threshold evaluation of thin metallic films exposed to femtosecond laser pulses: the role of material thickness', [*Optics and Laser Technology* **156**, 108484 \(2022\).](#)

23. Fraggelakis F., **Tsibidis G.D.***, Stratakis E., ‘Ultrashort pulsed laser induced complex surface structures generated by tailoring the melt hydrodynamics’, [*Opto-Electronic Advances*, 5 210052 \(2022\)](#), (**Front Cover of Issue**).



24. Vlahou M., Fraggelakis F., Manganas P., **Tsibidis G.D.**, Ranella A., and Stratakis E., ‘Fabrication of biomimetic 2D nanostructures through irradiation of stainless steel surfaces with double femtosecond pulses’ [*Nanomaterials* 12 \(4\) 623 \(2022\)](#) [Editor’s Choice].
25. Petrović S., **Tsibidis G.D.**, Kovacevic A., Bozinovic N., Perusko D., Mimidis A., Manousaki A., and Stratakis E., ‘Effects of static and dynamic femtosecond laser modifications of Ti/Zr multilayer thin films’, [*European Journal of Physics D* 75, 304 \(2021\)](#).
26. Maragkaki S., Lingos P., **Tsibidis G.D.**, Deligeorgis P., Stratakis E., ‘Impact of pre-patterned structures on features of Laser Induced Periodic Surface Structures’, [*Molecules* 26 \(3\) 7330 \(2021\)](#).
27. Nivas J.JJ, Allahyari E., Skoulas E., Bruzzese R., Fittipaldi R., **Tsibidis G.D.**, Stratakis E. and Amoroso S., ‘Incident angle influence on ripple and grooves produced by femtosecond laser irradiation of silicon’, [*Applied Surface Science*, 570, 151150 \(2021\)](#).
28. Genieys T., Petrakakis M.N., **Tsibidis G.D.**, Sentis M., Uteza O., ‘Unraveling ultrashort laser excitation of nickel at 800nm wavelength’, [*Journal of Physics D: Applied Physics*, 54, 495302 \(2021\)](#).
29. Museur L., Manousaki A., Anglos D., **Tsibidis G.D.** and Kanaev A. ‘Pathways control in modification of solid surfaces induced by femtosecond laser pulses separated in time’, [*Applied Surface Science*, 566, 150611\(2021\)](#).
30. Fraggelakis F., **Tsibidis G.D.***, Stratakis E., ‘Tailoring Sub-micrometer Periodic Surface Structures via Ultrashort Pulsed Direct Laser Interference Patterning’, [*Physical Review B* 103, 054105 \(2021\)](#).
31. Kuznietsov O.V., **Tsibidis G.D.**, Demchishin A.V., Demchishin A.A, Gnilitzki I., ‘Femtosecond Laser-Induced Periodic Surface Structures on 2D Ti-Fe Multilayer Condensates’, [*Nanomaterials* 11\(2\), 316 \(2021\)](#).
32. **Tsibidis G.D.***, Museur L. and Kanaev A., ‘The Role of Crystalline Orientation in the Formation of Surface Patterns on Solids Irradiated with Femtosecond Laser Double Pulses’, [*Applied Sciences* 10, \(24\) 8811 \(2020\)](#).
33. Velli MC, **Tsibidis G.D.*** Mimidis A., Skoulas E., Pantazis Y., Stratakis E., ‘Predictive modeling approaches in laser-based material processing’, [*Journal of Applied Physics*, 28 183102 \(2020\)](#).
34. Skoulas E., Mimidis A., Demeridou I., **Tsibidis G.D.***, Stratakis E., ‘Polarization dependent spike formation on black silicon via ultrafast laser structuring’ [*Journal of Optoelectronics and Advanced Materials* 22, 501 \(2020\)](#).
35. Kudryashov S., Samokhvalov A., Shelygina S., Karabutov A., **Tsibidis G.D.**, Pankin D. Veiko V., ‘Electronic and vibrational processes during femtosecond laser absorption in absorbing liquids in sub- and filamentation regimes: ultrasonic and optical characterization’ [*Laser Physics Letters*, 17 105302 \(2020\)](#).
36. Allahyari,E., Nivas J.JJ, Skoulas E., Bruzzese R., **Tsibidis G.D.**, Stratakis E., and Amoroso S., ‘On the formation and the features of the supra-wavelength grooves generated during femtosecond laser surface structuring of silicon’ [*Applied Surface Science*, 528 146607 \(2020\)](#).

37. Stratakis E., Bonse J., Heitz J., Siegel J., **Tsibidis G.D.**, Skoulas E. Papadopoulos A., Mimidis A., Joel A.-C., Comanns P., Kruger J., Florian C., Fuentes-Edfuf Y., Solis J., Baumgartner W., ‘Laser Engineering of Biomimetic Surfaces’ (**Review Article**), [*Materials Science and Engineering: R: Reports*, **141**, 100562 \(2020\).](#)
38. **Tsibidis G.D.***, Stratakis E., ‘Ionization processes and laser induced periodic surface structures in dielectrics with mid-infrared femtosecond laser pulses’, [*Scientific Reports* **10**, 8675 \(2020\).](#)
39. **Tsibidis G.D.***, Mouchliadis L., Pedio M., Stratakis E., ‘Modelling ultrafast out-of-equilibrium carrier dynamics and relaxation processes upon irradiation of hexagonal Silicon-Carbide with femtosecond laser pulses’, [*Physical Review B* **101**, 075207 \(2020\).](#)
40. 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 \(2019\).](#)
41. 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 \(2019\).](#)
42. 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 \(2019\).](#)
43. 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 \(2018\).](#)
44. 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 \(2018\).](#)
45. 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 \(2018\).](#)
46. **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 \(2018\).](#)
47. **Tsibidis G.D.***, ‘Ultrafast dynamics of non-equilibrium electrons and strain generation under femtosecond laser irradiation of Nickel’, [*Applied Physics A*, **124**, 311 \(2018\).](#)
48. 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 \(2018\).](#)
49. 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 \(2018\).](#)
50. **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 \(2018\).](#)
51. 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 \(2018\).](#)
52. 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 \(2017\).](#)

53. **Tsibidis G.D.***, and Stratakis E., ‘Ripple formation on silver after irradiation with radially polarized ultrashort-pulsed lasers’, [*Journal of Applied Physics* **121**, 163106 \(2017\).](#)
54. **Tsibidis G.D.***, Skoulas E., Papadopoulos A., 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 \(2016\).](#)
55. 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 \(2016\).](#)
56. 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 \(2016\).](#)
57. 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 \(2015\).](#)
58. **Tsibidis G.D.***, Skoulas E., and Stratakis E., ‘Ripple formation on Nickel irradiated with radially polarized femtosecond beams’, [*Optics Letters*, **40** \(22\), 5172 \(2015\).](#)
59. **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 \(2015\).](#)
60. 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 \(2015\).](#)
61. 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 \(2015\).](#)
62. **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 \(2014\).](#)
63. **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 \(2014\).](#)
64. 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 \(2013\).](#)
65. **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 \(2012\).](#)
66. **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 \(2012\).](#)
67. Daskalaki A., Shalaby N.A., Kux K., Tsoumpekis 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 \(2011\).](#)
68. **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 \(2011\).](#)
69. 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 \(2009\).](#)

70. **Tsibidis, G.D.***, ‘Quantitative interpretation of binding reaction for rapidly diffusing proteins using Fluorescence Recovery After Photobleaching’. [*Journal of Microscopy*, **233** \(3\), 384-390 \(2009\).](#)
71. 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 \(2009\).](#)
72. **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 \(2008\).](#)
73. 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 \(2008\).](#)
74. **Tsibidis G.D.***, and Tavernarakis N., ‘Nemo: a computational tool for analyzing nematode locomotion’. [*BMC Neuroscience* **8**, 86 \(2007\).](#)
75. **Tsibidis G.D.***, ‘Quark-antiquark bound states and the Breit equation’, [*Acta Phys. Polonica B.*, **35**, 2329-2365 \(2004\).](#)

Review Paper

1. Stratakis E., Bonse J., Heitz J., Siegel J., **Tsibidis G.D.**, Skoulas E. Papadopoulos A., Mimidis A., Joel A.-C., Comanns P., Kruger J., Florian C., Fuentes-Edfuf Y., Solis J., Baumgartner W., ‘Laser Engineering of Biomimetic Surfaces’ (**Review Article**), [*Materials Science and Engineering: R: Reports*, **141**, 100562 \(2020\).](#)

Book Chapters

1. Chapter Title: ‘[Ultrafast laser biomimetic micro/nanostructuring](#)’, by **G.D.Tsibidis** and E.Stratakis in [Ultrafast Laser Nanostructuring - The Pursuit of Extreme Scales](#), editors: J.Bonse and R.Stoian, Springer Nature Switzerland AG(2023).
2. 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 Staford (2017).

Software Development

Additionally to codes developed to understand the fundamental mechanisms, the web-based computational platforms were developed (optical parameters+thermal response)

- [Modelling and Machine Learning | NFFA.eu](#) (optical parameters + thermal response of materials that are excited with ultrashort laser pulses)
- [RIANA](#) (damage threshold of materials that are excited with ultrashort laser pulses)
- A user-friendly, fast and precise algorithm to compute thermal and optical response of ultrathin metal films irradiated with ultrashort laser pulses (Ag, Au, Al, Cu, Ti, Ni, Steel, Mo, Cr, Pt, W) (**to be released**)

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

1. Fraggelakis F., Lingos P., **Tsibidis G.D.**, Cusworth E., Kravets VG, Grigorenko AN, Kabashin AV, Stratakis E. ' Impact of plasmonic modes and thermophysical properties on the double-pulse structuring of highly ordered LIPSS for biosensing applications' Proceedings of SPIE, (in Press) (2026)
2. Litsas A., Fraggelakis F., **Tsibidis G.D.**, Stratakis E., Pantazis Y., 'Inferring the Parameters of Ultrafast Lasers from Images with Surface Patterns ", [2023 International Symposium on Image and Signal Processing and Analysis \(ISPA\), September 18-19, Rome, Italy, \(2023\)](#)
3. 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 \(2014\).](#)
4. 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 \(2013\).](#)
5. 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 (2009).
6. 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 \(2009\).](#)
7. 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)
8. 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 \(2003\).](#)
9. **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 \(2001\).](#)

Software development

- Evaluation of damage threshold of various materials via a web-based platform ([NFFA Tool \(forth.gr\)](#)) [Virtual Access: Nanostructures Predictive Service and Materials Modeling](#) (presented at NFFA Summer School, June 10th-14th, Heraklion, Crete, Greece)

Workshop/Conference organisation

1. Organiser of COST action meeting ("[TOWARDS UNDERSTANDING AND MODELLING INTENSE ELECTRONIC EXCITATION](#)"), 18th, 2022, Heraklion, Crete, Greece
2. 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.***, ‘Interpulse Delay-Driven Mechanisms in Double Femtosecond Pulse Fabrication of Uniform Plasmonic Surface Structures on thin films’, [13th LIPSS Workshop, University of Twente, October 29th-31st, 2025, Enschede, the Netherlands.](#)
2. **Tsibidis G.D.***, ‘Laser-Based Fabrication Strategies for High-Resolution and Functional Biomimetic Structures’, [1st International Conference of PanHellenic Optical Society \(PHOS\), 10 – 11 October, 2025, Heraklion, Crete.](#)
3. **Tsibidis G.D.***, ‘Investigating Excitation processes and dynamics in Polycarbonate Following exposure to Ultrashort Laser Pulses’, [13th International Conference on Photo-Excited Processes and Applications, September 14th-19th, 2025, Lecce, Italy](#) (INVITED for Oral talk).
4. **Tsibidis G.D.***, ‘Double-Pulse Femtosecond Laser Fabrication of Highly Ordered Periodic Structures on Au Thin Films Enabling Low-Cost Plasmonic Applications’, [3rd International Conference on Nanotechnologies & Bionanoscience, September 8th-12nd 2025, Heraklion, Crete, Greece.](#)
5. **Tsibidis G.D.***, ‘Tailoring the properties of the electromagnetic modes excited by Mid-IR fs pulses at the interface between Si and SiO₂ coatings by adjusting the thickness of the dielectric material’ [Conference on Lasers and Electro-Optics/Europe \(CLEO/Europe 2025\) and European Quantum Electronics Conference \(EQEC 2025\)](#), 23-27 June, 2025, Munich, Germany.
6. **Tsibidis G.D.***, ‘Controlling the damage threshold and excited electromagnetic waves on Si with SiO₂ coatings upon irradiation with Mid-IR femtosecond laser pulses’, [17th International Conference on Laser Ablation \(COLA 2024\), September 29th-October 4th, Heraklion, Greece.](#)
7. **Tsibidis G.D.***, ‘Is the Damage Threshold of transparent materials influenced via the use of coatings upon irradiation with Mid-IR femtosecond laser pulses?’, [VIII International Conference on Ultrafast Optical Science UltrafastLight-2024, September 30th-October 2nd, Moscow, Russia.](#)
8. **Tsibidis G.D.***, ‘Tailoring the Damage Threshold of fused silica upon irradiation with Mid-IR femtosecond laser pulses the use of Silicon coatings’, [25th Laser Processing Micronanofabrication, June 11th-14th, San Sebastian, Spain, \(2024\).](#)
9. Lingos P., Perrakis G., Tsilipakos O., **Tsibidis G.D.***, Stratakis E (2023). ‘Influence of Electromagnetic surface modes on the formation of self-organised nano-patterns in thin Au films’, *2nd International Conference on Nanotechnologies and Bionanoscience (NanoBio 2023)*, [Conference Proceedings](#), September 11th-15th, Heraklion, Crete, Greece (2023).
10. **Tsibidis G.D.***, and Stratakis E. (2023). ‘Ionisation dynamics, damage conditions and surface patterning in fused silica irradiated with Mid-Infrared femtosecond pulses’, *European Conference on Lasers and Electro-Optics (CLEO) 2023*, [Conference Proceedings](#), June 26th-30th, Munich, Germany (2023).
11. Lingos P., Perrakis G., Tsilipakos O., **Tsibidis G.D.***, Stratakis E (2023). ‘Impact of plasmonic modes on the formation of self-organised nano-patterns in thin films’, *European Conference on Lasers and Electro-Optics (CLEO) 2023*, [Conference Proceedings](#), June 26th-30th, Munich, Germany (2023).
12. Maragkaki S., **Tsibidis G.D.**, Haizer L., Pápa Z., Flender R., Kiss B., Márton Z., Stratakis E., (2023). ‘Tailoring surface topographies on solids with Mid-IR femtosecond laser pulses’, *European Conference on Lasers and Electro-Optics (CLEO) 2023*, [Conference Proceedings](#), June 26th-30th, Munich, Germany (2023).
13. **Tsibidis G.D.***, Lingos P., Stratakis E. (2022), ‘Laser processing of materials: the role of electromagnetic effects and the thermophysical properties of the irradiated solids’, (INVITED for Oral talk), *VI International Conference on Ultrafast Optical Science*, October 3th-October 7th, Lebedev Physical Institute, Moscow, Russia.

14. **Tsibidis G.D.***, Lingos P., Stratakis E. (2022), ‘Laser processing of materials: the role of electromagnetic effects and the thermophysical properties of the irradiated solids’, (INVITED for Oral talk), *36th Panhellenic Conference on Solid State Physics and Materials Science*, September 26th -28th, Heraklion, Crete, Greece.
15. **Tsibidis G.D.***, Maragkaki S., Stratakis E. (2022) ‘Modelling of the ultrafast dynamics and patterning formation upon irradiation of Solids with Mid-IR femtosecond laser pulses’, (INVITED for Oral talk), *VII Ultrafast Dynamics and Metastability-Ultrafast Bandgap Photonics*, June 6th-10th, Hersonissos, Crete, Greece.
16. **Tsibidis G.D.*** (2021) ‘Tailoring submicrometer periodic surface structures via ultrashort pulsed direct laser interference patterning’, (INVITED for Oral talk, **CHAIRMAN of a session and member of the Program Organising Committee**), *International Conference on Ultrafast Optical Science*, October 6th-October 10th, Lebedev Physical Institute, Moscow, Russia.
17. **Tsibidis G.D.*** (2021), ‘Ultrafast Dynamics in Solids with Mid-IR laser femtosecond pulses and laser induced periodic surface structures’, (INVITED for Oral talk), *35th Panhellenic Conference on Solid State Physics and Materials Science*, September 26th -29th, Athens, Greece.
18. **Tsibidis G.D.*** (2021), Fraggelakis F. and Stratakis E. ‘Tailoring submicrometer periodic surface structures via ultrashort pulsed direct laser interference patterning’, (INVITED for Oral talk), *ALT21*, September 6th -10th, Moscow, Russia.
19. Maragkaki S, **Tsibidis G.D.***, Stratakis E. (2021), ‘Laser Induced periodic structure formation via mid-IR ultrashort laser pulses’, *The 22nd International Symposium on Laser Precision Microfabrication*, June 8th -11th, Aomori, Japan.
20. **Tsibidis G.D.***, Velli MC, Mimidis A., Skoulas E., Pantazis Y., Stratakis E., (2021), ‘Prediction of the morphological features of laser-based patterned surfaces through the use of machine learning approaches’, *The 22nd International Symposium on Laser Precision Microfabrication*, June 8th -11th, Aomori, Japan.
21. **Tsibidis G.D.*** (2020) ‘Multiscale modelling of surface modification mechanisms in laser-based processing’, (**Keynote Speaker** in [10th International Conference on Multiscale Materials Modelling](#) (Session: ‘Computer modelling of laser and ion beam interactions with materials’), Baltimore, October 19th-23rd, Baltimore, MD, USA ([postponed due to COVID-19 until 2022](#)).
22. **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.
23. **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.
24. **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.
25. **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.
26. **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.

27. 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.
28. **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.
29. **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.
30. **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](#)).
31. **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) *14th Conference on Laser Ablation (COLA)*, September 3-8, Marseille, France.
32. **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.
33. 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.
34. **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.
35. **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.
36. **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.
37. **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.
38. 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.
39. **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) *13rd Conference on Laser Ablation (COLA)*, October 6-11, Australia.
40. **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.

41. **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.
42. 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.
43. 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, Strasbourg 2010, France.
44. 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.
45. 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.
46. 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 Optoelectronics, Proceedings of SPIE, Vol. 7357, 73570K*, April 20-23th, Prague, Czech Republic.
47. **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.*
48. 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.
49. 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).
50. 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.

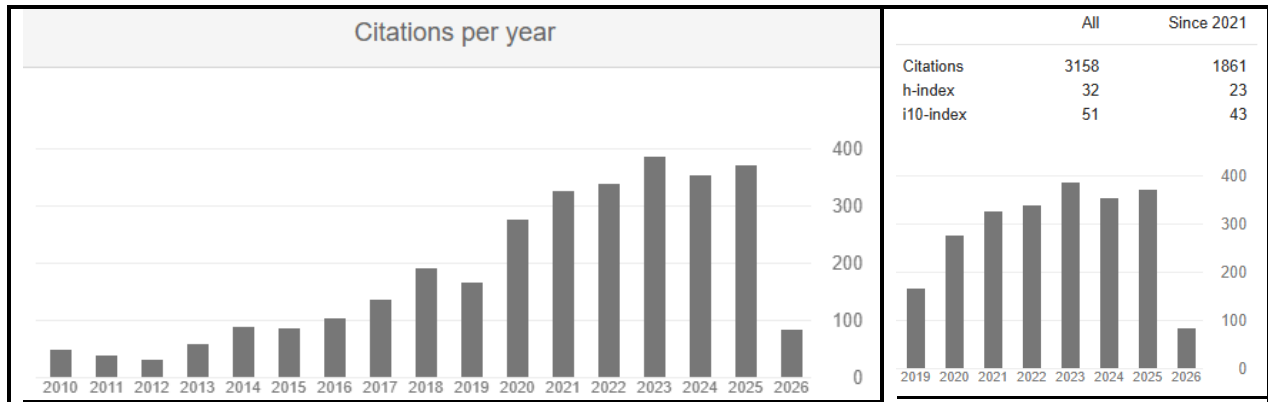
Participation in Workshops (asterisks indicate person who presented the talk)

1. **Tsibidis G.D.***, (2023). ‘Ionisation dynamics, damage conditions and surface patterning in fused silica irradiated with Mid-Infrared femtosecond pulses’ (INVITED for Oral talk) *Working Group Meeting of COST Action ‘Towards understanding and modelling intense electronic excitation’*, February 20th, 2023, Belgrade, Serbia.
2. **Tsibidis G.D.***, (2022). ‘Advances in the investigation of periodic structure formation with ultrashort laser pulses’, (INVITED for Oral talk) *6th Workshop on Laser Induced Periodic Surface Structures*, September 21th-23th, 2022, Orleans, France.
3. **Tsibidis G.D.*** (2022) ‘Damage threshold evaluation of thin metallic films exposed to femtosecond laser pulses: the role of material thickness’, (INVITED for Oral talk) *Working Group Meeting of COST Action ‘Towards*

understanding and modelling intense electronic excitation’, July 18th 2022, Heraklion, Crete, Greece.

- 4 **Tsibidis G.D.*** (2022) ‘Ultrashort pulsed laser induced complex surface structures generated by tailoring the melt hydrodynamics’, (INVITED for Oral talk) *Working Group Meeting of COST Action ‘Towards understanding and modelling intense electronic excitation*’, April 28th-29th 2022, Prague, Czech Republic.
- 5 **Tsibidis G.D.*** (2020) ‘Ultrafast dynamics following irradiation of solids with mid-infrared femtosecond laser pulses’, (INVITED for Oral talk) *Working Group Meeting of COST Action ‘Towards understanding and modelling intense electronic excitation*’, February 17th-18th 2020, Warsaw, Poland.
- 6 **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*, November 7th-8th, 2019, Szeged, Hungary.
- 7 **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.
- 8 **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.
- 9 **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.
- 10 **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.
- 11 **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.
- 12 **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 of microtubule plus ends. *LASERLAB Foresight Workshop and Users Meeting, Trends of Laser Applications in Biology and Biomedicine, Heraklion, Crete.*
- 13 **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.*
- 14 **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.*
- 15 **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.*
- 16 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.*

Citation maps (as of March 2nd 2026): Google Scholar



Inclusion in the ‘Top 2% of Scientists in the World’ (Stanford List) (<https://lnkd.in/dVjv3Xit>)

Five Most cited research articles

Research paper	Web of Science	Scopus	Google Scholar
1. 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) .	264	264	346
2. Stratakis E., Bonse J., Heitz J., Siegel J., Tsibidis G.D. , Skoulas E., Papadopoulos A., Mimidis A., Joel A.-C., Comanns P., Kruger J., Florian C., Fuentes-Edfuf Y., Solis J., Baumgartner W., ‘Laser Engineering of Biomimetic Surfaces’ (Review Article), Materials Science and Engineering: R: Reports, 141, 100562 (2020) .	252	267	332
3. 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) .	238	246	283
4. 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) .	143	146	181
5. Tsibidis G.D.* , Skoulas E., Papadopoulos A., 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) .	124	104	162

Participation in Research Programs/Actions (22)

- 2022-2026 [METAMORPHA](#): (Funding scheme: HORIZON-CL4-2021-TWIN-TRANSITION-01-03 - Laser-based technologies for green manufacturing (Photonics - Made in Europe Partnerships) (RIA)) ‘Made-to-measure micromachining with laser beams tailored in amplitude and phase’. **Role in project**: Modelling of laser-matter interaction and structure formation.
- 2019-2022 [BioCombs4Nanofibers](#): (Funding scheme: H2020-FETOPEN-2018-2019-2020-01 RIA) ‘Antiadhesive Bionic Combs for Handling of Nanofibers’. **Role in project**: Modelling formation of periodic structure formation following irradiation with femtosecond pulses in various laser conditions.
- 2018-2021 [SINTERINK](#): (Funding scheme: H2020-FETOPEN-2018-2019-2020-01 RIA) ‘Digital conductive and dielectric nanoinks printing for energy applications’. **Role in project**: Modelling sintering process.
- 2017-2021 *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).
- 2018-2019 [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.
- 2015-2018 ‘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.
- 2013-2017 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).
- 2015-2015 *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/>).*
- 2014-2014 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).
- 2012-2014 KPIΠΗΣ-BIOΣ-IΗΔΔ). **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).
 - 2010-2011 ‘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).
 - 2009-2010 ‘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).
 - 2008-2009 ‘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, Laser and Photonics Reviews, 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, etc.

Journal Editor

- *Applied Sciences*, Guest Editor of Special Issue on '[Multiscale Modelling of Laser-Induced Phenomena on Solids](#)'

Supervision (Present and Past Members)

Leader of the Subgroup 'Laser Processing Group' (<https://www.iesl.forth.gr/en/research/ULNMP-Group>) that consists of Postdoctoral researchers, PhD, MSc and Diploma students.

i. Postdoctoral researchers

1. Dr Stella Maragkaki
2. Dr Ioanna Sakellari
3. Dr Fotis Fraggelakis (Past Member)
4. Dr Panagiotis Lingos (Past Member)
5. Dr Dimitrios Mansour (Past member)

ii. Postgraduate Students

1. Maria-Christina Velli: PhD Student (Materials and Predictive modelling techniques).
2. Matina Vlahou: PhD Student.
3. Stella Markogiannaki: PhD Student.
4. Andreas Michael: PhD Student.
5. Christina Siogka: MSc Student-Past student (now Phd Student at the University of Athens).
6. Antonios-Stylianios Valavanis: BSc Student (Mathematics Department): '*Theoretical investigation of laser matter interaction-development of algorithms*'-Past student (now Phd Student at the University of Virginia, USA, with Professor Leonid Zhigilei).
7. Spyridon Georgopoulos: MSc in 2017. (Title of MSc thesis: '*Interaction of ultra-short laser pulses with solid surfaces and double-layers*')-Past student (now Data Scientist at Pfizer).