

CURRICULUM VITAE

Personal Data

Full Name: KASELOURIS EVAGGELOS
Date of Birth: 25 May 1981
Nationality: Hellenic
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Education

- 05.2012-till now** Technical University of Crete, School of Production Engineering and Management
PhD Candidate, Thesis title: *“Study of matter behavior dynamics governed by the interaction with laser pulses and external strong currents”*
- 10.2006- 10.2008** National Technical University of Athens in collaboration with University of Patras
School of Mechanical Engineering, NTUA
Masters degree, “Biomedical Engineering” (General degree: 8.23)
Master thesis title: *“Investigation on biomechanical stresses and strains of a trochanteric fi-nail intramedullary implant fixation using the finite element method”*
- 10.2000-10.2006** National Technical University of Athens, School of Applied Mathematical and Physical Sciences, (General degree: 7.01)
Thesis title: *“Experimental and theoretical investigation on the optical properties of skin (fluorescence, reflectivity) using laser pulses”*

Research interests

- Simulation of coupled multiphysics phenomena
 - Laser matter interaction with nanosecond laser pulses
 - Simulation of plasma formation from pulsed powered devices
 - Computational Biomechanics
 - Finite element method
 - Laser induced fluorescence on skin tissue samples
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Participation in Research Projects

- 07.2007- 07.2008** *“Photodiagnosis of skin Neoplasia with the use of Laser Induced Fluorescence”* (collaboration of ‘A. Siggros’ Hospital with the Department of Physics of the National Technical University of Athens).
- 09.2008-02.2009&
02.2010-02.2011** Scientific collaboration of the Laboratory of Dynamics and Structures (School of Mechanical Engineering, NTUA) with the B’ Medical School of Athens B’ Orthopedic Clinic, Agia Olga Hospital) concerning biomechanical finite element investigation on bones.
- 03.2011-06.2011** *“HiPER”, European High Power laser Energy Research Facility – Preparatory Phase Study, WP12 – “Fundamental Science Programme”*
- (T.E.I. of Crete, Centre for Plasma Physics & Lasers - CPPL)
- 09.2012-11.2014** *“Archimedes Project III”, Innovative optoacoustic device for 3D spatiotemporal micro-characterization of composite material based on ultrafast laser pulses*, (T.E.I. of Crete, Centre for Plasma Physics & Lasers - CPPL)
- 09.2013-12.2015** *“HiPER-ETPA”,* (T.E.I. of Crete, Centre for Plasma Physics & Lasers - CPPL)

Teaching experience

- 10.2011- 02.2016** Laboratory collaborator in Technological Educational Institute of Crete (TEI Crete), Department of Musical Technology and Acoustics and Department of Electronics.
- Laboratory Courses:
- Electronic Circuits
 - Laboratory Physics
 - Optoelectronics and Laser

Computer skills

Knowledge of: ANSYS, MATLAB, LS-DYNA, Visual Basic Mathematica, Origin, Mimics, Corel, Microsoft Office (Word, Excel, PowerPoint), Adobe Premiere, Image J.

Publications

Refereed Scientific journals

- [1] E. Drakaki, **E. Kaselouris**, M. Makropoulou, A.A. Serafetinides, A. Tsenga, A.J. Stratigos, A.D. Katsambas, C. Antoniou, Laser-Induced Fluorescence and Reflectance Spectroscopy for the Discrimination of Basal Cell Carcinoma from the Surrounding Normal Skin Tissue, *Skin pharmacology and physiology* **22**(3) (2009) 158-65.
- [2] Φ.Ν. Ευπνητός, Γ.Κ. Παπαχρήστου, Π. Χατζηγηγηγόρης, Ε. Χρονόπουλος, **Ε.Ν. Κασελούρης**, Δ.Τ. Βενετσάνος, Χ.Γ. Προβατίδης, Ν.Ε. Ευσταθόπουλος, Τρισδιάστατη διερεύνηση της άρθρωσης της πηγεοκαρπικής με τη χρήση των πεπερασμένων στοιχείων, *Ορθοπαιδική* **22** (2009) 85-93.
- [3] **Ε.Ν. Kaselouris**, D.T. Venetsanos, C.G. Provatidis, F.N. Xypnitos, V. Nikolaou, J. Lazarettos, N.E. Efstathopoulos, Investigation of a trochanteric fi-nail intramedullary implant fixation using the finite element method, *Journal of Orthopaedics* (2009) 6(4)e1.
- [4] N. Efstathopoulos, V.S. Nikolaou, F.N. Xypnitos, D. Korres, I. Lazarettos, K. Panousis, **E. Kasselouris**, D. Venetsanos, C. Provatidis, Investigation on the distal screw of a Trochanteric Fi-Nail Intramedullary Implant Using a Simplified Finite Element Model, *Injury Int. J. Care Injured* **41**(3) (2010) 259–265.
- [5] E.V. Brilakis, **E. Kaselouris**, F. Xypnitos, C.G. Provatidis, N.E Efstathopoulos, Effects of foot posture to fifth metatarsal fractures' biomechanics. A Finite Element Study, *The Journal of Foot and Ankle Surgery* **51**(6) (2012) 720-728.
- [6] Y. Orphanos, V. Dimitriou, **E. Kaselouris**, E Bakarezos, Nikolaos Vainos, M. Tatarakis, N. A. Papadogiannis, An integrated method for material properties characterization based on pulsed laser generated surface acoustic waves, *Microelectron. Eng.* **112** (2013) 249-254.
- [7] V. Dimitriou, **E. Kaselouris**, Y. Orphanos, E Bakarezos, Nikolaos Vainos, M. Tatarakis, N. A. Papadogiannis, Three dimensional transient behavior of thin films surface under pulsed laser excitation, *Appl. Phys. Letters* **103** (2013) 114104.
- [8] V. Dimitriou, **E. Kaselouris**, Y. Orphanos, E Bakarezos, N. Vainos, I.K. Nikolos, M. Tatarakis, N. A. Papadogiannis, The thermo-mechanical behavior of thin metal films on dielectric substrates under nanosecond laser pulse excitation above the thermoelastic regime, *Appl. Phys. A.* **118** (2015) 739-748.
- [9] **E. Kaselouris**, I.K. Nikolos, Y. Orphanos, E Bakarezos, N. A. Papadogiannis, M. Tatarakis, V. Dimitriou, A Review of simulation methods of laser matter interactions focused on nanosecond laser pulsed systems, *J. Multiscale Model.* (2015) 05, 1330001 DOI: 10.1142/S1756973713300013.

- [10] **E. Kaselouris**, I.K. Nikolos, Y. Orphanos, E Bakarezos, N. A. Papadogiannis, M. Tatarakis, V. Dimitriou, Elastoplastic study of nanosecond-pulsed laser interaction with metallic films using 3D multiphysics fem modeling, *Int. J. Damage Mech.* January (2016) Vol. **25**(1) 42-55.
- [11] **E. Kaselouris**, E. Skarvelakis, I. K Nikolos, G. Stavroulakis, Y. Orphanos, E. Bakarezos, N. A Papadogiannis, M. Tatarakis and Vasilios Dimitriou, Simulation of the Transient Behavior of Matter with Characteristic Geometrical Variations & Defects Irradiated by Nanosecond Laser Pulses Using FEA, *Key Engineering Materials* Vol **665** (2016), Advances in Fracture and Damage Mechanics XIV, pp. 157-160, selected, peer reviewed papers from the 14th International Conference on Fracture and Damage Mechanics, 21-23 September 2015, Montenegro.

Publications

Conferences Proceedings (Refereed)

- [12] M. Makropoulou, **E. Kaselouris**, E. Drakaki, A. A. Serafetinides, J. A. Sianoudis, A diffusion approximation model of light transport in multilayered skin tissue, *Progress in Biomedical Optics and Imaging - Proceedings of SPIE* **6628**, article number 662818, *Diagnostic Optical Spectroscopy in Biomedicine IV Conference*, July 2007, Munich.
- [13] E. Drakaki, **E. Kaselouris**, M. Makropoulou, A.A. Serafetinides, Laser induced fluorescence spectroscopy for ex vivo diagnosis and classification of basal cell carcinoma, *Sixth European Symposium on Biomedical Engineering*, 19-21 June 2008, Chania.
- [14] **E.N. Kaselouris**, D.T. Venetsanos, C.G. Provatidis, J. Lazarettos, V.S. Nikolaou, F.N. Xypnitos, N.E. Efstathopoulos, Investigation on the distal screw of a trochanteric Finail intramedullary implant in a healed femur, *Third Congress of the Hellenic Society of Biomechanics*, 26-28 September 2008, Athens.
- [15] F. Xypnitos, G. Papachristou, N. Efstathopoulos, **E. Kaselouris**, D. Venetsanos, C. Provatidis, Investigation of the mechanical behavior of typical scaphoid fractures during their healing process using the finite element method, *SEECCM 2009 (2nd South-East European Conference on Computational Mechanics)*, 22-24 June 2009, Rhodes.
- [16] F. Xypnitos, G. Papachristou, P. Grigoris, E. Chronopoulos, **E. Kaselouris**, D. Venetsanos, C. Provatidis, E. Kolliakou, N. Efstathopoulos, A Preliminary three dimensional investigation of the radiocarpal joint using the finite element method, *3rd International Conference on Experiments/Process/System Modeling/Simulation & Optimization (3rd IC-EpsMsO)*, 8-11 July 2009, Athens.
- [17] E. Kolliakou, F. N. Xypnitos, **E. Kaselouris**, A. Gouliamos, C. Provatidis, D.S. Korres, Normal and dysplastic hip joint mechanical behavior: a comparison study, *Abstracts from the 9th Domestic Meeting of the EUROPEAN HIP SOCIETY, Hip International* **20**(3) (2010) 383.

- [18] N.E. Efstathopoulos, F.N. Xypnitos, V. Nikolaou, J. Lazarettos, **E.N. Kaselouris**, D.T.Venetsanos, C.G. Provatidis, Investigation of a trochanteric Fi-Nail intramedullary implant fixation using the Finite Element Method, *Journal of Bone and Joint surgery – British volume, Vol 93-B, Issue SUPP III* (2011) 356.
- [19] I. Ορφανός, Β. Δημητρίου, **Ε. Κασελούρης**, Σ. Μπρέζας, Ε. Μπακαρέζος, Μ. Ταταράκης, Ν. Βάινος, Ν.Α. Παπαδογιάννης, Τρισδιάστατη απεικόνιση ολικού πεδίου νανο-ακουστικών κυμάτων σε μεταλλικές και διηλεκτρικές επιφάνειες με τη χρήση παλμικών πηγών laser, *6ο Πανελλήνιο Συνέδριο Ακουστικής*, Πρακτικά ΣΣ. 120-127, ΕΚΔ: Α. Φλωρός & Α. Μνιέστρης, 8-10 Οκτωβρίου 2012, Κέρκυρα.
- [20] **E. Kaselouris**, Y. Orphanos, V. Dimitriou, E. Bakarezos, N. Vainos, M. Tatarakis, N. A. Papadogiannis, 3D finite element modeling of laser-generated surface acoustic waves in film-substrate systems validated by experiments, *10th HSTAM International Congress on Mechanics*, 25-27 May 2013, Chania.
- [21] **E. Kaselouris**, V. Dimitriou, I.K. Nikolos, Y. Orphanos, E. Bakarezos, N.A. Papadogiannis, M. Tatarakis, Numerical simulations for the study of matter behavior dynamics governed by the interaction with laser pulses or external strong currents, *10th HSTAM International Congress on Mechanics*, 25-27 May 2013, Chania.
- [22] V. Dimitriou, **E. Kaselouris**, Y. Orphanos, E. Bakarezos, N. Vainos, I.K. Nikolos, N.A. Papadogiannis, M. Tatarakis, Matter dynamics under the interaction with laser pulses in the thermoelastic & plasma regimes, *40th EPS Conference on Plasma Physics*, Volume 1, Pages 493-496, 1-5 July 2013, Espoo Finland.
- [23] **E. Kaselouris**, V.M. Dimitriou, A. Skoulakis, I. Ftilis, Y. Orphanos, I. Nikolos, E. Bakarezos, N. Papadogiannis, M. Tatarakis, Experimental and numerical study of the initial stages of explosion of thick single wire z-pinch, *41th EPS Conference on Plasma Physics*, 23-27 June 2014, Berlin.
- [24] **E. Kaselouris**, I. K. Nikolos, Y. Orphanos, E. Bakarezos, N. Vainos, N.A. Papadogiannis, M. Tatarakis and V. Dimitriou, 3D multiphysics FEM modeling of nanosecond pulsed laser interaction with metallic films, *Joint 11th World Congress on Computational Mechanics, WCCM, the 5th European Conference on Computational Mechanics, ECCM and the 6th European Conference on Computational Fluid Dynamics, ECFD*, Proceedings Vol II, 758-769, 20-25 July 2014, Barcelona.
- [25] I. Σιδηράς, Ε. Κοκκινάκης, I. Ορφανός, Ε. Μπακαρέζος, **Ε. Κασελούρης**, Β. Δημητρίου, και Ν.Α. Παπαδογιάννης, Δονητικά χαρακτηριστικά παραδοσιακών κρουστών μουσικών οργάνων με τη χρήση λέιζερ και θεωρητικών προσομοιώσεων, *7ο Πανελλήνιο Συνέδριο Ακουστικής*, 20-21 Οκτωβρίου 2014, Θεσσαλονίκη.
- [26] Ε. Τζιανάκη, I. Ορφανός, **Ε. Κασελούρης**, Ε. Μπακαρέζος, Β. Δημητρίου, Ν. Βάινος, Μ. Ταταράκης, και Ν.Α. Παπαδογιάννης, Νανοακουστικά κύματα με τη χρήση υπερβραχέων παλμών λέιζερ και οι εφαρμογές τους σε σύνθετα υλικά, *7ο Πανελλήνιο Συνέδριο Ακουστικής*, 20-21 Οκτωβρίου 2014, Θεσσαλονίκη.
- [27] I. Ftilis, A. Skoulakis, **E. Kaselouris**, I. K. Nikolos, E. Bakarezos, N. A. Papadogiannis, V.M. Dimitriou, M. Tatarakis, Diagnosing the initial stages from solid

to plasma phase for dense plasma explosions, *1st EPS Conference on Plasma Diagnostics*, 14-17 April 2015, Frascati, Italy.

- [28] I. Ftilis, A. Skoulakis, **E. Kaselouris**, I. K. Nikolos, E. Bakarezos, N. A. Papadogiannis, V.M. Dimitriou, M. Tatarakis, Progress of the initial times of single wire explosion for plasma generation through numerical and experimental method, *42th EPS Conference on Plasma Physics*, 22-26 June 2015, Lisbon.
- [29] **E. Kaselouris**, A. Skoulakis, V.M. Dimitriou, I. Ftilis, I. K. Nikolos, E. Bakarezos, N. A. Papadogiannis, M. Tatarakis, Finite Element study of the initial stages of explosion of single wire z-pinch validated by experiments, *8th GRACM International Congress on Computational Mechanics*, 12-15 July 2015, Volos.
- [30] **E. Kaselouris**, E. Skarvelakis, I. K. Nikolos, G. Stavroulakis, Y. Orphanos, E. Bakarezos, N. A. Papadogiannis, M. Tatarakis and Vasilios Dimitriou, A FEM study on the influence of the geometric characteristics of metallic films irradiated by nanosecond laser pulses, *8th GRACM International Congress on Computational Mechanics*, 12-15 July 2015, Volos.

Publications

Conference announcements

- [31] E. Drakaki, **E. Kaselouris**, M. Makropoulou, A.A. Serafetinides, A. Tsenga, A.J. Stratigos, A.D. Katsambas, C. Antoniou, Laser Induced Fluorescence and Reflectance Spectroscopy for the discrimination of basal cell carcinoma from the surrounding normal skin tissue, *International conference in Advanced Laser Technologies*, 13-18 September 2008, Poster, Siofok, Hungary.
- [32] N. Efstathopoulos, F. Xypnitos, V. Nikolaou, J. Lazarettos, **E. Kaselouris**, D. Venetsanos, C. Provatidis, Investigation of a trochanteric FI-Nail intramedullary implant using a simplified finite element model, *10th EFORT Congress*, Poster P1944, 3 – 6 June 2009, Vienna, Austria.
- [33] Ν.Ε. Ευσταθόπουλος, Φ.Ν. Ξυπνητός, Β. Νικολάου, Ι. Λαζαρέττος, Ε. Κολλιάνκου, **Ε. Κασελούρης**, Δ. Βενετσάνος, Χ. Προβατίδης, Χρήση της εγγύς ή της άπω περιφερικής βίδας σε ενδομυελικό ήλο διατροχαντηρίων καταγμάτων. Εμβιομηχανική μελέτη, *20^ο Πανκύπριο Ορθοπαιδικό Συνέδριο*, 6-8 Νοεμβρίου 2009, Πάφος, Κύπρος.
- [34] Ε. Κολλιάνκου, Φ. Ξυπνητός, **Ε. Κασελούρης**, Α. Γουλιάμος, Δ. Κορρές, Χ. Προβατίδης, Συγκριτική μελέτη της μηχανικής συμπεριφοράς της φυσιολογικής και δυσπλαστικής άρθρωσης του ισχίου, *Πρακτικά 4^ο Συνεδρίου ΕΛΕΜΒΙΟ (Ελληνικής εταιρείας Εμβιομηχανικής)*, 4-6 Ιουνίου 2010, Ιωάννινα.
- [35] Ε. Κολλιάνκου, Φ. Ξυπνητός, **Ε. Κασελούρης**, Α. Γουλιάμος, Δ. Κορρές, Χ. Προβατίδης, Συγκριτική μελέτη της μηχανικής συμπεριφοράς της άρθρωσης του ισχίου επί δυσπλασίας και χαμηλού εξάρθρηματος, *66^ο Πανελλήνιο Ορθοπαιδικό Συνέδριο*, 13-16 Οκτώβρη 2010, Αθήνα.

- [36] I. Tzianaki, D. Zaharioudakis, **E. Kaselouris**, Y. Orphanos, M. Bakarezos, G. Konstantinidis, M. Tatarakis, A. Lyras, C. Kosmidis, N.A. Papadogiannis, The role of non-thermal electrons in ultrafast laser-metal film nano-acoustics, experiments and theory, *8th International Conference on Nanosciences and Nanotechnologies (NN11)*, 12-15 July 2011, Thessaloniki, Greece.
- [37] E. Μπριλάκης, **E. Κασελούρης**, Φ. Ξυπητός, Χ. Προβατίδης, Ν. Ευσταθόπουλος, Εμβιομηχανική Μελέτη Καταγμάτων 5^{ου} Μεταταρσίου με τη Μέθοδο των Πεπερασμένων Στοιχείων, *68^ο Πανελλήνιο Ορθοπαιδικό Συνέδριο*, 3-6 Οκτωβρίου 2012 Αθήνα.
- [38] Y. Orphanos, V. Dimitriou, **E. Kaselouris**, E. Bakarezos, N. Vainos, M. Tatarakis, N. A. Papadogiannis, Short-pulse laser-generated surface nano-acoustic waves, *5th International Conference on Micro- Nanoelectronics, Nanotechnology and MEMS*, 7-10 October 2012, Heraklion, Greece.
- [39] I. Fitis, A. Skoulakis, S. M. Hassan, E.L. Clark, **E. Kaselouris**, V. Dimitriou, J. Chatzakis, P. Lee, T.G. Papadoulis, M. Bakarezos, C. Petridis, I. K. Nikolos, E. Drakakis, C. Kosmidis, N. A. Papadogiannis and M. Tatarakis, Study of a Miniature Plasma Focus Neutron Source, *The 2015 International Conference on Applications of Nuclear Techniques*, 14-20 June 2015, Crete.
- [40] M. Koliou, E. Variantza, **E. Kaselouris**, I. Papadopoulos and Vasilios Dimitriou, Seismic testing and dynamic character analysis of high-rise building structure in Crete based on FEM, *8th GRACM International Congress on Computational Mechanics*, 12-15 July 2015, Volos.
- [41] T. Papadoulis, E. Variantza, **E. Kaselouris** and V. Dimitriou, CAD/FEM Simulation of the governing mechanics of dry turning, *8th GRACM International Congress on Computational Mechanics*, 12-15 July 2015, Volos.
- [42] M. Bakarezos, Y. Orphanos, I. Tzianaki, **V. Kaselouris**, V. Dimitriou, G.D. Tsibidis, P.A. Loukakos, M. Tatarakis, N.A. Papadogiannis, Ultrafast dynamics and imaging of laser-generated nano-acoustic waves in metal/substrate layered systems, *PHOTONICA2015, 5th International school and conference on photonics*, 24-28 August 2015 Belgrade, Serbia.
- [43] **E. Kaselouris**, E. Skarvelakis, Y. Orphanos, M. Bakarezos, M. Tatarakis, N.A. Papadogiannis and V. Dimitriou, FEM simulation of SAWs dynamics generated by ns Laser pulses in thin films as a diagnostic of defects in matter, *ScinTE2015, International Conference Science in Technology*, Poster 205-A01-121, 5-7 November 2015 Athens.

