

KRISTALIA MELESSANAKI

LIST OF PUBLICATIONS

SUBMITTED- IN PRESS:

1. **“Combined multiphoton and photoacoustic imaging for stratigraphic analysis of paintings”**, George J. Tserevelakis, Vassilis Tsafas, Kristalia Melessanaki, Giannis Zacharakis, and George Filippidis, Accepted on 18/12/2018 to the Optics Letters

ARTICLES IN SCIENTIFIC JOURNALS

1. **“Laser-Assisted Removal of Graffiti from Granite: Advantages of the Simultaneous Use of Two Wavelengths”**, J. S. Pozo-Antonio, A. Papanikolaou, K. Melessanaki, T. Rivas, P. Pouli, *Coatings*, 8, 124 (2018); doi:10.3390/coatings8040124
2. **“Photoacoustic signal attenuation analysis for the assessment of thin layers thickness in paintings”**, G. J. Tserevelakis, A. Dal Fovo, K. Melessanaki, R. Fontana, and G. Zacharakis, *Journal of Applied Physics* 123, 123102 (2018);doi :10.1063/1.5022749
3. **“POLYGNOSIS”: The development of a Thesaurus in an Educational Web Platform on optical and laser-based investigation methods for Cultural Heritage analysis and diagnosis**, N. Platia, M. Chatzidakis, C. Doerr, L. Charami, Ch. Bekiari, K. Melessanaki, K. Hatzigiannakis, P. Pouli, *Heritage Science* (2017) 5:50, doi:10.1186/s40494-017-0163-0
4. **“A method for the registration of spectral images of paintings and its evaluation”**, A. Zacharopoulos, K. Hatzigiannakis, P. Karamaounas, V. M. Papadakis, M. Andrianakis, K. Melessanaki, X. Zabulis, *Journal of Cultural Heritage*, 29, 10-18 (2018); doi:10.1016/j.culher.2017.07.004.
5. **“Photoacoustic imaging reveals hidden underdrawings in paintings”**, G.J. Tserevelakis, I. Vrouvaki, P. Siozos, K. Melessanaki, K.Hatzigiannakis, C. Fotakis, G. Zacharakis, *Scientific Reports*, 7: 747 (2017); doi:10.1038/s41598-017-00873-7.
6. **“Polarization SHG discriminates between Fresh and Aged, starch based, cultural heritage, restoration adhesives”**, S. Psilodimitrakopoulos, E. Gavgiotaki, K. Melessanaki, V. Tsafas, G. Filippidis, *Microscopy and Microanalysis*, 22(5):1072-1083 (2016); doi: 10.1017/S1431927616011570
7. **“A multi-technique approach, based on mobile/portable laser instruments, for the in-situ pigment characterization of stone sculptures on the island of Crete dating from Venetian and Ottoman period”**, Z. E. Papiaka, A. Philippidis, P. Siozos, M. Vakondiou, K. Melessanaki, D. Anglos, submitted to the thematic series "Optical Technologies applied to Cultural Heritage" of 'Heritage Science' Journal, 4:15 (2015); doi: 10.1186/s40494-016-0085-2
8. **“Laser-assisted removal of dark cement crusts from mineral gypsum (selenite) architectural elements of peripheral monuments at Knossos”**, G. Grammatikakis, K.D. Demadis, K. Melessanaki, P. Pouli, *Studies in Conservation*, 60 (S1), S3-S11 (2015); doi: 10.1179/0039363015Z.000000000201.
9. **“Assessment of the in depth degradation of artificial aged triterpenoid paint varnishes using non-linear imaging microscopy techniques”**, G. Filippidis, M. Mari, L. Kelegkouri, A. Philippidis, A. Selimis, K. Melessanaki, M. Sygletou, C. Fotakis, *Microscopy and Microanalysis* 21 510-517 (2015); doi:10.1017/S1431927614013580.
10. **“Holographic testing of possible mechanical effects of laser cleaning on the structure of model fresco samples”**, Zs. Márton, I. Kisapáti, Á. Török, V. Tornari, E. Bernikola, K. Melessanaki, P. Pouli, *NDT&E International* 63, 53-59 (2014); doi:10.1016/j.ndteint.2014.01.007.

11. **"Synchronized deformation monitoring in laser cleaning: an application for Cultural Heritage conservation"** V. Tornari, E. Bernikola, K. Hatzigiannakis, K. Melessanaki, P. Pouli, *Universal Journal of Physics and Application* 1(2): 149-159, (2013); doi:10.13189/ujpa.2013.010215.
12. **"The use of model probes for assessing in-depth modifications induced during the laser cleaning of modern paintings"**, P. Vounisiou, A. Selimis, G. J. Tserevelakis, K.Melessanaki, P. Pouli, G. Filippidis, C. Beltsios, S. Georgiou and C. Fotakis, *Applied Physics A: Materials Science & Processing* 100, 647–652 (2010); doi: 10.1007/s00339-010-5647-7.
13. **"Multiphoton excitation fluorescence and Third Harmonic generation microscopy measurements combined with Confocal Raman Microscopy for the analysis of layered samples of varnished oil films"**, A. Nevin, D. Comelli, I. Osticioli, G. Filippidis, K. Melessanaki, G. Valentini, C. Fotakis, *Applied Physics A: Materials Science & Processing* 100, 599-606 (2010); doi: 10.1007/s00339-010-5644-x.
14. **"Second and third harmonic generation measurements of glues used for lining of painted artworks"** G. Filippidis, K. Melessanaki, C. Fotakis, *Analytical and Bioanalytical Chemistry*, 395, 2161–2166 (2009); doi: 10.1007/s00216-009-3060-x.
15. **"THG and MPEF imaging microscopy techniques for the online art conservation diagnosis"**, E.J. Gualda, G. Filippidis, K. Melessanaki, C. Fotakis, *Applied Spectroscopy* 63, 280-285 (2009); <http://www.opticsinfobase.org/as/abstract.cfm?uri=as-63-3-280>.
16. **"The use of lasers for the removal of shellac from wood"**, E.M. Aligizaki, K. Melessanaki and A. Pournou, e-PS, 5, 36-40 (2008); <http://www.morana-rtd.com/e-preservationscience/2008/Aligizaki-21-02-2008.pdf>.
17. **"Nonlinear imaging microscopy techniques as diagnostic tools for art conservation studies"**, G. Filippidis, E. J. Gualda, K. Melessanaki, and C. Fotakis, *Optics Letters*, 33, 240-242 (2008); <http://dx.doi.org/10.1364/OL.33.000240>.
18. **"Laser-Induced Breakdown Spectroscopy (Libs) in Archaeological Science-Applications and Prospects"**, A. Giakoumaki, K.Melessanaki, D. Anglos, *Analytical and Bioanalytical Chemistry*; 387, 749-60 (2007); doi: 10.1007/s00216-006-0908-1.
19. **"Pigment analysis in Bronze Age Aegean and Eastern Mediterranean painted plaster by laser-induced breakdown spectroscopy (LIBS)"**, A. Brysbaert, K. Melessanaki, D. Anglos, *Journal of Archaeological Science* 33, 1095-1104 (2006); doi:10.1016/j.jas.2005.11.016.
20. **"Multianalytical Study of Laser Pulse Duration Effects in the IR Laser Cleaning of Wall Paintings from the Monumental Cemetery of Pisa"** A. Andreotti, M. P. Colombini, A. Nevin, K. Melessanaki, P. Pouli, C. Fotakis, *Laser Chemistry*, vol. 2006, Article ID 39046, 11 pages, (2006); doi:10.1155/2006/39046.
21. **"Laser Cleaning and Spectroscopy: A Synergistic Approach in the Conservation of a Modern Painting"**, K. Melessanaki, C. Stringari, C. Fotakis, D. Anglos, *Laser Chemistry*, vol., Article ID 42709, 5 pages, (2006); doi:10.1155/2006/42709.
22. **"Measuring the thickness of protective coatings on historic metal objects using nanosecond and femtosecond LIBS depth profiling"**, P. Pouli, K. Melessanaki, A. Giakoumaki, V. Argyropoulos, D. Anglos, *Spectrochimica Acta Part B* 60, pp 1163-1171 (2005); doi: 10.1016/j.sab.2005.05.028.
23. **"Laser characterization and cleaning of nineteenth century Daguerreotypes II"**, V.V. Golovlev, M. Gresalfi, J.C. Miller, D. Anglos, K. Melesanaki and V. Zafirooulos, *Journal of Cultural Heritage* 4, S134-S139 (2003); doi:10.1016/S1296-2074(00)00185-0.
24. **"Yellowing effect and discoloration of pigments: Experimental and Theoretical studies"**, V. Zafirooulos, C. Balas, A. Manousaki, G. Marakis, P. Maravelaki-Kalaitzaki, K. Melesanaki, P. Pouli, T. Stratoudaki, S. Klein, J. Hildenhagen, K. Dickmann, B. S. Luk'yanchuk, C. Mujat, A. Dogariu, *Journal of Cultural Heritage* 4, S249-S256 (2003); doi: 10.1016/S1296-2074(02)01205-0.
25. **"Laser Induced Breakdown Spectroscopy for the analysis of 150-year old daguerreotypes"**, D. Anglos, K. Melessanaki, V. Zafirooulos, M. J. Gresalfi, J. C. Miller, *Appl. Spectrosc.* 56, 423-432 (2002); <http://www.opticsinfobase.org/as/abstract.cfm?URI=as-56-4-423>.

26. **"The application of LIBS for the analysis of archaeological ceramic and metal artifacts"**, K. Melessanaki, M.P. Mateo, S.C. Ferrence, P.P. Betancourt, D. Anglos, *Appl. Surf. Sci.* 197-198, 156-163 (2002); doi:10.1016/S0169-4332(02)00459-2.
27. **"Pigment identification in paintings employing Laser Induced Breakdown Spectroscopy (LIBS) and Raman microscopy"**, L. Burgio, K. Melessanaki, M. Doulgeridis, R. J. H. Clark, D. Anglos, *Spectrochimica Acta Part B* 56, 905-913 (2001); doi:10.1016/S0584-8547(01)00215-4.
28. **"Laser Induced Breakdown Spectroscopy (LIBS) and Hyper-spectral Imaging Analysis of Pigments on an Illuminated Manuscript"**, K. Melessanaki, V. Papadakis, C. Balas, D. Anglos, *Spectrochimica Acta Part B* 56, 2337-46 (2001); doi:10.1016/S0584-8547(01)00302-0.
29. **"Study on the discolouration of pigments induced by laser irradiation"**, T. Stratoudaki, A. Manousaki, K. Melesanaki, V. Zafirooulos, G. Oriol, *Revue de Métallurgie* 9, 795-801 (2001), doi:10.1051/metal:2001125.

INVITED CHAPTERS IN BOOKS

1. **"Laser Tools in Archaeology and Conservation. How Far Can We Get?"** A. Philippidis, P. Siozos, Z.E. Papiaki, K. Melessanaki, K. Hatzigiannakis, M. Vakondiou, G. Manganas, K. Diamanti, A. Giakoumaki, D. Anglos, Chapter in "Best Practices of Ggeoinformatic Technologies for the Mapping of Archaeolandscapes" A. Sarris (Ed.), Archaeopress Publishing Ltd, Oxford, 2015, .pp. 261-269, <http://www.archaeopress.com/Public/displayProductDetail.asp?id={A29B6318-83A5-4B36-BF5B-50B1EFA29AB9}> ISBN 9781784911621
2. **"An Integrated Approach To The Study And Preservation Of Paintings Using Laser Light Technology; Diagnosis, Analysis And Cleaning"**, P. Pouli, K. Melessanaki, V. Tornari, E. Bernikola, G. Filippidis, D. Anglos, C. Fotakis, invited Chapter no 14 in "the Science and Art: The Painting Surface", edited by A. Sgamellotti, B.G. Brunetti, C. Miliani, Royal Society of Chemistry, Chapter 14, p. 287-313 (2014) ISBN- 978-1-84973-636-7

CONFERENCE PROCEEDINGS

1. **"Monitoring and mapping of deterioration products on cultural heritage monuments using imaging and laser spectroscopy"**, K. Hatzigiannakis, K. Melessanaki, A. Philippidis, O. Kokkinaki, E. Kalokairinou, P. Siozos, P. Pouli, E. Politaki, A. Psaroudaki, A. Dokoumetzidis, E. Katsaveli, E. Kavoulaki and V. Sithiakaki, Proceedings of the 1st International Conference TMM-CH "Transdisciplinary Multispectral Modelling and Cooperation for the Preservation of Cultural Heritage", 10-13 October, 2018 Athens, Greece
2. **"Studies on Azulejo glaze welding by means of laser irradiation"**, S. R. M. Pereira, K. Hatzigiannakis, E. Polychronaki, K. Melessanaki, P. Pouli, J. M. Mimoso, GlazeArt2018, International Conference Glazed Ceramics in Cultural Heritage, Lisbon, October 29-30, 2018, <http://glazeart2018.lnec.pt/>
3. **"Towards the understanding of the two wavelength laser cleaning in avoiding yellowing on stonework: a micro-Raman and LIBS study"**, A. Papanikolaou, P. Siozos, A. Philippidis, K. Melessanaki, P. Pouli, Lasers in the Conservation of Artworks XI, Proceedings of LACONA XI, P. Targowski, M. Walczak, P. Pouli (Eds.), NCU Press, Torun, 95-104 , 2017, doi: 10.12775/3875-4.06
4. **"Real-time monitoring of laser assisted removal of shellac from wooden artefacts using Digital Holographic Speckle Pattern Interferometry"** E. Bernikola, K. Melessanaki, K. Hatzigiannakis, P Pouli and V. Tornari, Lasers in the Conservation of Artworks, eds D. Saunders, M. Strlic, C. Korenberg, N. Luxford and K. Birkholzer, Archetype publications Ltd, London, 52-59 (2013).
5. **"IRIS"; a novel spectral imaging system for the analysis of Cultural Heritage objects"** V. Papadakis, Y. Orphanos, S. Kogou, K. Melessanaki, P. Pouli, C. Fotakis, Proc. of SPIE Vol. 8084 (2011); doi: 10.1117/12.889510.

6. **“Laser cleaning applied to contemporary paintings: optimization of working parameters”**, G. De Cesare, K. Melessanaki, P. Pouli, F. Rosi Domingues, C. Miliani, C. Fotakis; in *“New insights into the Cleaning of Paintings”* proceedings from the Cleaning 2010 International Conference, Universidad Politécnica de Valencia and Museum Conservation Institute, Smithsonian Institution Scholarly Press, number 3, (2010) 91-92.
7. **“Il laser nella pulitura delle pitture contemporanee: selezione dei parametri operativi”** De Cesare G., Melessanaki K, Pouli P., Domingues J., Rosi F., Miliani C., Fotakis C., in proceedings of the APLAR 3, Applicazioni laser nel restauro conference 17-18 giugno 2010, (2010) 105-111.
8. **“Laser cleaning applied to contemporary paintings: optimization of working parameters”**, De Cesare G., Melessanaki K, Pouli P., Domingues J., Rosi F., Miliani C., Fotakis C. in proceedings of the FLAMN 10 conference, St Petersburg State University of Information technologies, mechanics and optics, preprints.
9. **“In-depth assessment of modifications induced during the laser cleaning of modern paintings”**, A. Selimis, P. Vounisiou, G.J. Tserevelakis, K. Melessanaki, P. Pouli, G. Filippidis, C. Beltsios, S. Georgiou and C. Fotakis, Proc. SPIE, Vol. 7391, 73910U (2009); doi:10.1117/12.827658.
10. **“Laser cleaning studies of hard insoluble aluminosilicate crusts on minoan (LM IIIC) pottery shreds”**, S. Chlouveraki, P. Pouli, K. Melessanaki, K. Zervaki, M. Yiannakaki, in the *Proceedings of the 5th International Conference on Lasers in the Conservation of Artworks (LACONA V)*, Series Eds. K. Dickmann, C. Fotakis, J. F. Asmus (Springer Proceedings in Physics 100, 2005) pp 143-148; doi: 10.1007/3-540-27176-7_18.
11. **“Evaluating the Effectiveness of Lasers for the Removal of overpaint from a 20th C Minimalista Painting”**, C. McGlinchey, C. Stringari, E. Pratt, M. Abraham, K. Melessanaki, V. Zafirooulos, D. Anglos, P. Pouli, C. Fotakis, in the *Proceedings of the 5th International Conference on Lasers in the Conservation of Artworks (LACONA V)*, Series Eds. K. Dickmann, C. Fotakis, J. F. Asmus (Springer Proceedings in Physics 100, 2005) pp 209-216; doi: 10.1007/3-540-27176-7_26.
12. **“Analysis of archaeological objects with LM^{NTI}, a new transportable LIBS instrument”** K. Melessanaki, A. Mastrogiannidou, S. Chlouveraki, S.C. Ferrence, P.P. Betancourt, D. Anglos, in the *Proceedings of the 5th International Conference on Lasers in the Conservation of Artworks (LACONA V)*, Series Eds. K. Dickmann, C. Fotakis, J. F. Asmus (Springer Proceedings in Physics 100, 2005), pp 443- 451; doi: 10.1007/3-540-27176-7_56.
13. **“Problems in stabilizing historic iron-bladed weapons displayed in an uncontrolled environment in the Criminal Museum of Athens, Greece”**, V. Argyropoulos, M. Giannoulaki, Z. Sakki, A. G. Karydas, Ch. Zarkadas, P. Pouli, K. Melessanaki, A. Giakoumaki, D. Anglos, in the *Proceedings of the 14th Triennial Meeting of ICOM Committee for Conservation, The Hague, 12- 16 September 2005: Isabelle Verger (managing ed.). – London: James & James/Earthscan. volume 1, pp 1-8 (2005).*
14. **“The conservation of fifteen islamic plaster stained glass windows, the Benaki Museum Islamic Art Collection”** Y. Doganis, A. Galanos, A. Legakis, P. Pouli, K. Melessanaki, in the *proceedings of the 10th International Congress on Deterioration and Conservation of Stone, ICOMOS, 27June-2 July 2004, Stockholm Sweden*, Series Eds. Daniel Kwiatkowski and Runo Lofvendahl (ICOMOS Sweeden, 2004), pp 1025-1032.