Short CV

Vivi TORNARI
female, single, vegan
Place of birth: Athens 1962

PhDc Applied Science,
BSc Physical Optics,
MSc Engineering Materials,
MPhil Dr Art Science Conservation RCA.

Current position: Head of Holography lab and project coordinator at IESL/FORTH.

Since 1995 research staff at Institute of Electronic Structure and Laser of the Foundation for Research and Technology Hellas/ (IESL/FORTH) specialising on optical holography and holographic interferometry techniques for non-destructive structural diagnostics in art conservation. Since 2000 established and is heading the holography laboratory and applied holographic metrology team. She is experienced coordinator of National, International, and European research projects. She is the author and co-author in over 100 papers in peer-review journals, academic magazines, conference proceedings, manuals, reports, protocols, and text books.

Coordinator of EC projects LASERACT and MULTIENCODE, educational programs and Romanian/ Italian/ Chinese/ Swiss bilateral co-operations, supervisor in National/ International projects with industry, museums and galleries, technical partner and workpackage leader in FP4-FP7 EC projects. Her research lies in the optimisation and development of laser holographic techniques and instrumentation for the study of physical and mechanical aspects of aging, defect detection, growth, deterioration mechanisms, photomechanical and long-term effects, environmental impact, originality assessment, fringe pattern classification, etc. Research interests varying from applied physics and coherent metrology fundamentals to applications on artwork conservation field to include physics and mechanisms of laser-matter interactions and optical system developments to the philosophy of physics and specially to wave interference and interconnection of information.

She has been awarded several Internships and has various publications in book, conference proceedings, open-access and printed journals. Member of international Committees for Optics, Holography, Optical Metrology and Interferometry. Production and several exhibits of holographic artworks.

Articles in scientific journals

1. “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, http://dx.doi.org/10.1016/j.ndteint.2014.01.007 (2014)
2. “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, DOI: 10.13189/ujpa.2013.010215 (2013).
3. “Micro-mapping of defect structural micro-morphology in the documentation of fresco wallpaintings”, V. Tornari, E. Bernikola, E. Tsiranidou, K. Hatzigiannakis, M. Andrianakis, V. Detalle, J.L. Bodnar, International journal of heritage in the digital era, 2 (1), 2013

4. “Micro-mapping of defect structural micro-morphology in the documentation of fresco wallpaintings”, V. Tornari, E. Bernikola, E. Tsiranidou, K. Hatzigiannakis, M.Andrianakis, V. Detalle, J.L. Bodnar, International journal of heritage in the digital era, 1 (2) (2013)
5. “Spatial Coordinates in Interferometry Fringes: A Timeless Artwork Multipurpose Documentation”, V. Tornari, Journal of basic and applied physics, 1 (2), 39-48 (2012).
6. “Interference fringe-patterns association to defect-types in artwork conservation: an experiment and research validation review”, V Tornari, E. Tsiranidou, E. Bernikola, Applied Physics A 106(2), 397–410 (2012).
7. “Rapid initial dimensional changes in wooden panel paintings due to simulated climate-induced alterations monitored by digital coherent out-of-plane interferometry”, E. Bernikola, A. Nevin, V. Tornari, Applied Physics A 95, pp. 387-399 (2009).

Book

“*Lasers in the Preservation of Cultural Heritage; Principles and applications*”, Fotakis C., D. Anglos, V. Zafiropulos, S. Georgiou, V. Tornari, Ed. R. G. W. Brown, E. R. Pike (Taylor and Francis, New York 2006).

Conference Proceedings

1. “Experimental methods on monitoring of materials surfaces in climate change conditions”, V. Tornari, E. Bernikola, J. Leissner, C. Bertolini, D. Camuffo, EWCHP-2013, 3RD European Workshop on Cultural Heritage Preservation Bozen/Bolzano, Italy, 16-18/09/2013
2. “Surface reaction under climate impact: A direct holographic visualization of assumed processes”, V. Tornari, E. Bernikola, K. Hatzigiannakis, M. Andriannakis, P. Bellendorf, C. Bertolin, D. Camuffo, L. Kotova, D. Jacobs, J. Leissner, FRINGE 2013, The 7th International Workshop on Advanced Optical Imaging and Metrology, 8-11/09/2013, Germany
3. “Deterioration estimation of paintings by means of combined 3D and hyperspectral data analysis” , L.G.Montagud, C. Portales-Ricart, B. Pastor-Carbonell, E. Ribes-Gómez, A. Gutiérrez-Lucas, V. Tornari, V.M. Papadakis, R.M. Groves, B. Sirmacek, A. Bonazza, I. Ozga, J.P. Vermeiren, K.Van Der Zanden, M. Föster, P. Aswendt, A. Borreman, J. D. Ward, A. Cardoso, L. Aguiar, F.Alves, P. Ropret, J.M. Luzón-Nogué, C. Dietz, SPIE proceedings Vol. 8790, Optics for Arts, Architecture and Archaelogy IV- June 2013
4. “Surface monitoring measurements of materials on environmental change conditions” V. Tornari, E. Bernikola, P. Bellendorf, C. Bertolin, D. Camuffo, L. Kotova, D. Jacobs, R. Zarnic, V. Rajcic, SPIE proceedings Vol. 8790, Optics for Arts, Architecture and Archaelogy IV- June 2013
5.“Modern technology in originality and authentication dispute on movable and detached artworks” V.Tornari, E. Kouloumpi, F. Koussiaki, SPIE proceedings Vol. 8790, Optics for Arts, Architecture and Archaelogy IV- June 2013
6. “Remote photonic metrology in the conservation of cultural heritage”, V. Tornari, G. Pedrini, W. Osten, SPIE proceedings Vol. 8790, Optics for Arts, Architecture and Archaelogy IV- June 2013
7. “SYDDARTA: new methodology for digitization of deterioration estimation in paintings”, L.G.Montagud, C. Portales-Ricart, B. Pastor-Carbonell, E. Ribes-Gómez, A. Gutiérrez-Lucas, V. Tornari, V.M. Papadakis, R.M. Groves, B. Sirmacek, A. Bonazza, I. Ozga, J.P. Vermeiren, K.Van Der Zanden, M. Föster, P. Aswendt, A. Borreman, J. D. Ward, A. Cardoso, L. Aguiar, F.Alves, P. Ropret, J.M. Luzón-Nogué, C. Dietz, SPIE proceedings Vol. 8790, Optics for Arts, Architecture and Archaelogy IV- June 2013
8. “Modern technology in originality and authentication dispute on movable and detached artworks” V. Tornari, E. Kouloumpi, F. Koussiaki, SPIE proceedings Vol. 8790, Optics for Arts, Architecture and Archaelogy IV- (June 2013)
9. “Remote photonic metrology in the conservation of cultural heritage” , V. Tornari, G. Pedrini, W. Osten, SPIE proceedings Vol. 8790, Optics for Arts, Architecture and Archaelogy IV- (June 2013)
10. “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)

11. “Laser cleaning of excavated fresco fragments; testing and optimization of laser parameters and structural monitoring by means of Digital Holographic Speckle Pattern Interferometry”, Zs. Márton, I. Kisapáti, P. Pouli, E. Bernikola, V. Tornari, Lasers in the Conservation of Artworks - LACONA IX proceedings, eds D. Saunders, M. Strlic, C. Korenberg, N. Luxford and K. Birkholzer, Archetype publications Ltd, London, 59-66 (2013)
12. “Studying transportation effects on canvas paintings by full field digital holographic techniques” E. Tsiranidou, E. Bernikola, V. Tornari, T. Fankhauser, M. Läuchli, N. Baschlin, C. Palmbach, Lasers in the Conservation of Artworks - LACONA IX proceedings, eds D. Saunders, M. Strlic, C. Korenberg, N. Luxford and K. Birkholzer, Archetype publications Ltd, London, 210-212 (2013)
13. “A new portable Digital Holographic Speckle Pattern Interferometry system for artworks structural documentation”, Kostas Hatzigiannakis, Eirini Bernikola, Vivi Tornari, Lasers in the Conservation of Artworks - LACONA IX proceedings, eds D. Saunders, M. Strlic, C. Korenberg, N. Luxford and K. Birkholzer, Archetype publications Ltd, London, 210-212 (2013)
14. “Monitoring of changes in the surface movement of model panel paintings following fluctuations in relative humidity; preliminary results using digital holographic speckle pattern interferometry”, E. Bernikola, V. Tornari, A. Nevin, E. Kouloumpi. In the Proceedings of the 7th International Conference on Lasers in the Conservation of Artworks (LACONA VII), Series Eds. Castillejo et al., Taylor and Francis group, London, 391-397 (2008).
15. “Laser-based structural diagnosis: A museums’ point of view”, E. Kouloumpi, A.P. Moutsatsou, M. Trompeta, J. Olafsdottir, C. Tsaroucha, A.V. Terlixi, R.M. Grooves, M. Georges, G.M. Hustinix, V. Tornari. In the Proceedings of the 7th International Conference on Lasers in the Conservation of Artworks (LACONA VII), Series Eds. Castillejo et al., Taylor and Francis group, London, 407- 411 (2008).
16. “Comparative Holography in the Conservation Structural Diagnosis; An El Greco Exemplary Exploitation.”, V. Tornari, A. Bonarou, V. Zafiropulos, C. Fotakis, N. Smyrnakis, S. Stassinopoulos, 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 513- 524.