

NOTES ON CONTRIBUTORS

Fotis Arnaoutoglou received his B.Sc. (Hons) in computer studies (visualization) from the University of Derby, U.K. in 2000. He has been working as a freelance programmer and 3D visualization specialist since 2003. His experience in various computer science fields ranges from 3D scanning and reconstruction to software development, but his main expertise is in real-time 3D computer graphics programming. His frequent cooperation with the Athena Research Center in Xanthi, Greece, has led to a dozen publications on a number of 3D visualization projects.

Ahmad Baik is an architect specializing in Islamic architecture. He is a lecturer at King Abdul-Aziz University (KAU), Jeddah, Saudi Arabia, and researcher at the 3D Imaging, Metrology and Photogrammetry Applied Coordinate Technologies (3DIMPact) group, Civil, Environmental and Geomatic Engineering (CEGE), University College London (UCL), UK. His interests include Heritage Building Information Modelling (HBIM).

Anna Bentkowska-Kafel, Ph.D., is an art historian. Her academic and museum career spans over thirty years. She worked for the Royal Castle in Warsaw, Poland, the Courtauld Institute of Art in London, UK, and was lecturer in digital art history at the Department of Digital Humanities, King's College London. Her research interests include the use of 3D electronic imaging in documentation, representation, and scholarly interpretation of art and architecture. She has been involved in the Computers and the History of Art (CHArt); the IS&T/SPIE Electronic Imaging Symposia on Computer Vision and Image Analysis of Art; the UK-wide 3D Visualisation in the Arts Network (3DVisA); the European Virtual Museum Transnational Network of Excellence (V-MusT). She was Vice-Chair of the COST Action TD1201, Colour and Space in Cultural Heritage. For publications see bentkowska.wordpress.com.

Frank Boochs, Ph.D., is professor of applied informatics at the Institute for Spatial Information and Surveying Technology of the University of Applied Sciences in Mainz, Germany. He has been chairing the Image Processing group of the German Society of Photogrammetry, Remote Sensing and Geoinformation since 2012. His research interests include the use of images and point clouds for generation of different types of knowledge about objects, with the focus on geometrical processing concepts that make it possible to generate high-precision data about position, shape, and form of objects; the use of spectral image characteristics for the detection and classification of objects; the use and structuring of knowledge to be integrated into the analysis of data sets. He served as Chair of the COST Action TD1201, Colour and Space in Cultural Heritage.

Jonathan Brecko is a researcher at the Royal Belgian Institute of Natural Sciences (RBINS) in Brussels and at the Royal Museum for Central Africa (RMCA) in Tervuren, Belgium. He has a Master's degree in science, biology, and specializes in herpetology. He is a Ph.D. candidate at the University of Antwerp, researching aquatic feeding of snakes of the Natricinae. He is involved, as part of the Scientific Heritage Service (RBINS) and Biological Collections (RMCA), in digitization of type specimens routinely using focus stacking and 3D scanning techniques.

Irina Mihaela Ciortan is a researcher at the University of Verona—Department of Computer Science. She works for the Horizon 2020 project, Scan4Reco, on multimodal scanning and characterization of cultural heritage artefacts, focusing on Reflectance Transformation Imaging and Microprofilometry for small metallic objects. In 2013 she graduated from the international joint Erasmus Mundus Master of Color in Informatics and Media Technology. Her expertise is digital image processing, as well as colour and spectral science. After graduation, she worked in industry, as an image processing analyst in the research and development sector. In 2014, she was awarded a Marie Curie scholarship to conduct a research study on the spectral reproduction of paintings. In COSCH she led the Case Study on Digitization at the National Museum of Romanian History.

Amandine Colson has a Master's degree in conservation-restoration of cultural heritage from the Ecole de Condé, Paris, France. She has been working for the German Maritime Museum in Bremerhaven, Germany, since 2013 and as a Ph.D. candidate since 2016. Originally a specialist in the conservation of archaeological objects, her participation, since 2014, in COSCH resulted in her active participation in building up a dialogue between the spatial and spectral fields and conservation-restoration, and assessing the needs of professionals from her own field. Between 2014 and 2016 she was coordinating the COSCH case study of the Bremen Cog and went on to conduct doctoral research into deformation monitoring of large-scale cultural heritage objects.

Marco Cucchi has high-school qualifications in surveying and electronics. He received a certified qualification in testing of concrete, reinforced concrete, pre-stressed concrete, and masonry using flat jack tests in 2006, and a certified qualification in infrared thermographic technique for civil and industrial investigations in 2012. He works as a technician in the Laboratory for Diagnostic and Monitoring of Built Heritage at the Technical University of Milan, Italy. His main activities and responsibilities are the study of ancient buildings; non-destructive evaluation of structures, diagnostic tests on material, mechanical characterization of brick, concrete, and stone-masonry, dynamic and static monitoring of bridges and structures. He is the co-author of several papers.

Christian Degriigny graduated in electrochemistry and gained his Ph.D. in analytical chemistry from the University of Paris VI. He is a professor at the Haute Ecole Arc Conservation-restauration in Neuchâtel, Switzerland. He is also a co-manager of the Château de Germolles in Burgundy, France. His main interest is in corrosion science applied to conservation of metal artefacts. He coordinated the ICOM-CC Metal Working Group during two periods between 2002 and 2008. He is also interested in the application of spatial and spectral imaging techniques to material cultural heritage, from the end-users' perspectives. He chaired COSCH Working Group 3, which looked at the analysis and restoration of surfaces and objects of cultural heritage.

Vincent Detalle is research scientist at the Centre for Research and Restoration of the Museums of France (C2RMF), in charge of the development of laser laboratory and optical spectroscopic applications. He gained his Ph.D. in science and analytical strategies from the University of Lyon Claude Bernard, France and worked for five years at the National Research Council Canada (CNRC) developing laser spectroscopic techniques. He went on to lead, for ten years, the mural painting group at the Laboratoire de Recherche des Monuments Historiques (LRMH) in Champs-sur-Marne, France, where he was also responsible for coordinating research. He is head of science of the Equipex Patrimex programme, in charge of the development of the French Molab laboratory dedicated to cultural heritage, as part of the European Union's programme, Integrated Platform for the European Research Infrastructure ON Cultural Heritage (IPERION-CH).

Massimiliano Ditta holds a Master's degree in maritime archaeology from the University of Southern Denmark in Esbjerg. He has been working as a freelancer and research associate at the University of Southern Denmark since his graduation in 2014. His other research interests are in 3D documentation and recording methods.

Jean-Philippe Farrugia received his Ph.D. in computer graphics from the Université Jean-Monnet and Ecole des Mines de Saint Etienne, France, in 2002. He has been associate professor at the Université Lyon 1 since 2005, where he co-directs the R3AM research team of the LIRIS laboratory, specializing in realistic rendering. His main research interests are real-time rendering, Augmented Reality, and computer vision. He previously worked as a research engineer for Telecom Paris Sud, where he was the technical director of the Graphics Processing Unit Computer Vision (GPUCV) project.

Sony George received a masters in electronics (2005) and Ph.D. in photonics (2012) from Cochin University of Science and Technology, India. Since 2012, Sony is working as a researcher at the Norwegian Colour and Visual Computing Laboratory group within the Department of Computer Science at the Norwegian University of Science and Technology (NTNU), Norway. Sony's current research interests include colour science, multispectral and hyperspectral imaging, spectral image quality, and digital documentation of cultural heritage artefacts.

Susie Green specializes in Structure from Motion and image processing methodologies for archaeology. She works on archaeology projects with the Institute of Archaeology of University College London and the British Museum, London, UK.

Julien Guery is a geomorphologist specializing in 2D/3D imagery (photogrammetry, LiDAR, multispectral) and UAVs. He was involved in COSCH through his scientific consultant activity (www.jmmg-consulting.com) and the development of a start-up dedicated to photogrammetric recording of cultural heritage sites. He is now in charge of sensors and drones sales for 3D mapping purposes and of customer care for AIRINOV, France, partner of Parrot Company and senseFly Ltd. His expertise in photogrammetry and technical documentation of artefacts was required to serve as the interface between specialists in technology and its end-users involved in cultural heritage, to establish reliable and user-friendly protocols for data acquisition and processing.

Jon Y. Hardeberg received his M.Sc. degree in signal processing from the Norwegian Institute of Technology in Trondheim, Norway in 1995, and his Ph.D. from Ecole Nationale Supérieure des Télécommunications in Paris, France in 1999. After a short industry career in the U.S., where he designed, implemented, and evaluated colour imaging system solutions for multifunction peripherals, he joined Gjøvik University College in Gjøvik, Norway, in 2001. He is a professor of colour imaging at the Department of Computer Science, Norwegian University of Science and Technology (NTNU), and member of the Norwegian Colour and Visual Computing Laboratory (www.colourlab.no). His research interests include

multispectral colour imaging, print and image quality, colorimetric device characterization, colour management, and cultural heritage imaging. He has co-authored more than 150 publications.

Mona Hess, Ph.D., is a research associate at Civil, Environmental and Geomatic Engineering of University College London (UCL), UK. She is a member of the UCL 3DIMPact research group, which specializes in 3D imaging, metrology and photogrammetry applied coordinate technologies. She holds a Dipl. Ing. Univ. in architecture and a Master of Arts in heritage conservation. She received her Ph.D. in 3D imaging metrology for cultural heritage from UCL in 2015. She has more than ten years of experience in cross-disciplinary international 3D imaging projects, and is specialized in 3D close-range optical imaging recording for cultural heritage and conservation science. She researches the creation of fit-for-purpose 3D digital colour image data. She has developed a test artefact for the performance evaluation of 3D imaging systems, based on engineering metrology.

Julio M. del Hoyo-Meléndez holds a Ph.D. in science and conservation of cultural heritage from the Department of Conservation and Restoration of Cultural Heritage of the Polytechnic University of Valencia, Spain. He received a Bachelor's and a Master's degree in chemistry from the University of Puerto Rico and the University of Houston, respectively. He was a graduate intern in the Museum Research Laboratory (now Collections Research Laboratory) of the Getty Conservation Institute in Los Angeles, USA from 2005 to 2006. In 2007 he was awarded a predoctoral fellowship at the Smithsonian Museum Conservation Institute in Maryland for conducting research on the action of light on cultural heritage materials. He currently works as a research scientist in the Laboratory of Analysis and Non-Destructive Investigation of Heritage Objects (LANBOZ) of the National Museum in Kraków, Poland.

András Jung (www.andrasjung.de) is a proximal and remote sensing scientist with a special interest in hyperspectral imaging and field spectroscopy. He earned his Ph.D. in hyperspectral remote sensing in 2006. Since 2011 he has been involved in snapshot spectral imaging developments for mobile mapping and UAV applications at the Ulm University, Germany. He holds a shared patent on snapshot spectral imaging (EP2944930). He is involved in a German-Hungarian collaboration between Leipzig University and Szent István University, focusing on non-destructive spectroscopy and chemical field imaging.

Ashish Karmacharya received his Ph.D. in information science from the University of Bourgogne, Auxerre, France, in July 2011. He has a Master's degree in photogrammetry and geoinformatics from the University of Applied Sciences,

Stuttgart, Germany, where he received awards for academic excellence. He has worked for the Institute for Spatial Information and Surveying Technology, i3mainz, of the University of Applied Sciences in Mainz, Germany since 2007. His main area of research is knowledge representation and semantic technologies. He is a core member of the team designing and developing COSCH Knowledge Representation (COSCH^{KR}). In his native Nepal, he worked as an information system officer at IUCN—The World Conservation Union Nepal Country Office. He was mainly responsible for planning and executing ICT-related activities within the organization.

Anestis Koutsoudis, Ph.D., is a principal researcher at the Athena Research Center, Xanthi, Greece. Since his undergraduate studies, he has been working in the area of computer graphics as a designer and as a software engineer. His research interests involve 3D scanning, 3D graphics programming, photogrammetry, and content-based retrieval. He has participated in many research and development projects with an emphasis on 3D graphics programming, 3D digitization, multimedia, and IT application in the cultural heritage and education domains. He is an IEEE senior member and a member of the Hellenic Informatics Union.

Gaëtan Le Goïc received his Ph.D. from the University of Savoie Mont-Blanc in Annecy, France, in 2012. He went on to postdoctoral fellowship at the Laboratoire Systèmes et Matériaux pour la Mécatronique (SYMME) at the same university. He is associate professor at the University of Bourgogne Franche-Comté and a member of the Laboratoire d'Electronique, Informatique et Image (LE2I). He leads research and industrial projects on surface topography metrology and visual appearance digitization.

João Linhares received his undergraduate degree in optometry and vision sciences from the University of Minho, Braga, Portugal, in 2002 and his M.Phil. from the University of Manchester, UK, in 2006. He then returned to the University of Minho to continue his research and was awarded his Ph.D. in October 2011. After a period of lectureship in the Department of Vision and Hearing Sciences at Anglia Ruskin University, Cambridge, UK, he became an assistant professor at the Department of Physics of the University of Minho. His main research interests are the use of hyperspectral imaging to study the chromatic diversity in complex scenarios for normal colour vision and colour vision deficiencies.

Lindsay MacDonald received his Ph.D. in “Realistic Visualisation of Cultural Heritage Objects” in the Faculty of Engineering at University College London (UCL), where he subsequently worked as a research fellow, in the 3DIMPact Research Group. He previously worked for twenty years in industrial R&D, devel-

oping colour imaging systems for the graphic arts, for which he holds fifteen patents. He is visiting professor of image science at the University of Westminster. He has over 150 scientific publications and is a fellow of the British Computer Society (BCS), the Institution of Electrical Engineers (IEE), the Royal Photographic Society (RPS), and the Society of Imaging Science and Technology (IS&T). His passion is for colour as an interdisciplinary research subject. Since January 2016 he has been the secretary/treasurer of the International Colour Association (AIC). He has published over 150 conference papers and journal articles, and has co-edited eight books, the latest of which was *Digital Heritage* (Elsevier, Oxford, 2006).

Alamin Mansouri received his Ph.D. from the University of Bourgogne, Auxerre, France, in 2005. He was a postdoctoral fellow at the ColorLab laboratory in Norway. He is professor at the University of Bourgogne Franche-Comté and member of the Laboratoire d'Electronique, Informatique et Image (LE2I) where he leads a thematic project of physical and multimodal imaging. His current research is focused on acquisition and processing/analysis of multispectral imaging and its interactions with cultural heritage and media technology.

Dominique Martos-Levif is a restorer of wall paintings. She read history of art at the Ecole du Louvre and has a Master's degree in conservation-restoration of cultural heritage from the University of Panthéon Sorbonne in Paris, France. She also has a degree in cultural heritage research. She worked as an engineer in the mural painting and polychromy department of the Laboratoire de Recherche des Monuments Historiques (LRMH). She is interested in the scientific and technical studies of painting, to better understand issues in preservation and to advance knowledge of the history of techniques. At present (2016) she is in charge of a paint studio at the Centre de Recherche et de Restauration des Musées de France (C2RMF).

Aurore Mathys is a researcher specializing in 3D digitization for the Royal Belgian Institute of Natural Sciences (RBINS) in Brussels and at the Royal Museum for Central Africa (RMCA) in Tervuren, Belgium. She holds a Bachelor's degree in computer graphics from the Haute École Albert Jacquard (Namur, Belgium) and a Master's degree in art history and archaeology from the University of Liège, Belgium. She is studying towards a doctorate.

Frédéric Merienne has been professor at Arts et Metiers and director of the Image Institute, Chalon sur Saone, France, a research team of the Le2i Laboratory, since 2004. He received his Ph.D. from the National Polytechnical Institute of Grenoble (INPG) in 1996. His research interests focus on virtual immersion: the interaction process with virtual mock-ups, motion sickness in Virtual Reality, and the multi-

sensory feedback, in connection with engineering, cultural heritage, and health applications. He has been involved in different projects with industrial partners, and initiated a number of international collaborative academic projects in the area of Virtual Reality with universities in the USA, Australia, Colombia and Malaysia.

Natasa Michailidou holds a B.A. in archaeology from the Aristotle University of Thessaloniki, Greece, and an M.A. in museum and gallery management from the City University in London, U.K. She has been a research associate with the Cultural Heritage Department of the Athena Research Center, Xanthi, Greece, for several years working on cultural projects involving applications of digital technology. Her research interests include documentation, multimedia databases, 3D reconstruction, museum guides, and other educational applications. She has worked in various institutions for children's programmes in archaeology and in culture. She also organizes cultural guided tours.

Vera Moitinho de Almeida, Ph.D., is a researcher, honorary collaborator at the Quantitative Archaeology Lab, Universitat Autònoma de Barcelona (LAQU-UAB), Spain, as well as an independent Digital Cultural Heritage consultant specializing in 3D imaging and analysis. Her interdisciplinary background includes a doctorate from UAB, focusing on the technological and functional analysis of archaeological objects using 3D digital models and reverse engineering processes; an M.Sc. in Prehistoric Archaeology, also from UAB; an interdisciplinary M.Sc. in Multimedia Technologies from the Faculty of Engineering (FEUP), University of Oporto, Portugal; and a B.A. in Fine Arts from the Polytechnic Institute of Coimbra (IPC), Portugal. She has been actively involved in several international projects, and has authored more than forty scientific publications in the field of 3D applications to research into cultural heritage.

Cristina Montagner holds a Ph.D. in conservation science from NOVA University of Lisbon, Portugal (2015). In her doctoral work she used image processing techniques to support investigations into authentication of paintings. Her research interests are in the application of multi-analytical approaches to characterization of painting materials, and the use of multi- and hyperspectral imaging techniques for pigment characterization and colour analysis. She has a Master's degree in chemical sciences for conservation and restoration from the University Ca' Foscari, Venice, Italy (2008). Her Master's research involved the application of UV-Vis-NIR Fibre Optic Reflectance Spectroscopy for the characterization of organic dyes. In 2005 she completed a two-year professional course in art conservation at the International University of Arts in Venice, Italy.

Aurélie Mounier received her Ph.D. in archaeological science from the University of Bordeaux Montaigne, France, in 2010. Her thesis was on gilding of medieval wall paintings. In 2012 she completed a postdoctoral project on the miniatures of the Marcadé Collection in the Treasury of Bordeaux Cathedral. Since 2013 she has been contracted as a research engineer in the Institut de Recherche sur les Archéomatériaux (IRAMAT), Centre de recherche en Physique Appliquée à l'Archéologie (CRPAA) in Pessac, France. Her research focuses on the characterization of painting materials, using non-invasive spectroscopic techniques, such as hyperspectral imaging and fluorimetry. Technical developments in the latter technique led her to file a patent, in 2014, for a portable LED μ spectrofluorimeter. She has been a member of the ICOM-CC Scientific Research group since 2013.

Orla Murphy, Ph.D., is a college lecturer in the School of English at University College Cork (UCC), Ireland, and in the Irish national, inter-institutional Digital Arts and Humanities Ph.D. programme. She is the coordinator of UCC's M.A. in digital arts and humanities, and the online M.A. in digital cultures. She researches intermediality, particularly how the text is, was, and will be transmitted in all its forms, including 3D representation in cultural heritage; how we read, represent, and share knowledge in new networked, linked and virtual environments.

Sérgio Nascimento graduated in physics from the University of Porto, Portugal, and has a Ph.D. in colour science from Keele University, UK. He is an associate professor with aggregation of physics at the University of Minho, Portugal, where he teaches optics, vision sciences, and colour science. His research focuses on colorimetry and colour vision, in particular applications of spectral imaging, colour constancy and colour rendering, colour in art and models of colour vision. He has published over one hundred research articles on colour vision and related topics. He is a member of the Board of Directors of the International Color Vision Society and topical editor for colour vision of the *Journal of the Optical Society of America A*.

Anthony Pamart graduated in architecture from the Université libre de Bruxelles (ULB), Belgium, with a specialization in 3D digitization (AIICe Lab, Brussels). In 2014 he was a fellow at the Center for Khmer Studies (CKS), Cambodia, hosted by the research institute of the École Française d'Extrême-Orient (EFEO) in Siem Reap, to develop practices of close-range photogrammetry in the archaeological park of Angkor. In 2015, he joined the MAP laboratory in Marseilles (UMR 3495 CNRS/MCC) to work on the shape analysis, and more recently as a tenure studies engineer in charge of the acquisition, processing, and analysis of 3D data. He has been involved in other scientific partnerships and actions concerned with the multimodality and dissemination of 3D content, such as COSCH, and currently (2014–18) the Consortium 3D at the Centre national de la recherche scientifique (CNRS).

George Pavlidis received his Ph.D. in electrical engineering, earning the distinction of the Ericsson Awards of Excellence in Telecommunications. He has been working on numerous R&D projects with emphasis on multimedia systems in culture and education. In 2002 he joined the Athena Research Center, Xanthi, Greece, where he is now a research director and head of the Multimedia Research Group and head of research at Clepsydra Cultural Heritage Digitization Center. His research interests include 2D/3D imaging, CBIR, multimedia technologies, human-computer interaction, intelligent user interfaces, multi-sensory environments and ambient intelligence, 3D digitization and reconstruction, 3D-GIS and mixed/Augmented/Virtual Reality. He is a member of the Technical Chamber of Greece, of the Hellenic Researchers' Association, a senior member of the IEEE, and a founding member of the Researchers' Association of the Athena Research Center.

Marcello Picollo graduated in geology from the University of Florence and has a Ph.D. in photonics from the University of Eastern Finland, Faculty of Science and Forestry, Joensuu, Finland. He is a researcher at the Nello Carrara Institute of Applied Physics of the National Research Council of Italy (IFAC-CNR) in Florence. He has been working on spectroscopic investigations of works of art since 1991. His main interest is in the characterization of artists' materials using non-invasive spectroscopic and imaging techniques. Since 2008 he has been an adjunct professor at the Faculty of Sciences, University of Florence, Italy, teaching image elaboration to the undergraduate course in technology for the conservation and restoration of cultural heritage.

Ruven Pillay is a research scientist at the C2RMF working on the scientific imaging of art, in particular on multispectral and hyperspectral imaging, software development, digital image processing, and visualization. He holds Master's degrees in physics and computer science and a Ph.D. in hyperspectral imaging. He has over a decade of experience in the museum sector, having worked also at the Scientific Department of the National Gallery in London, the National Museum in Stockholm, and the Getty Conservation Institute in Los Angeles. He is also currently a working group coordinator for ICOM-CC, the conservation committee of ICOM.

Francesca Piqué is a wall paintings conservator and professor of heritage conservation science at the University of Applied Sciences and Arts of Southern Switzerland (SUPSI). She has an undergraduate degree in chemistry from the University of Florence and a Master's degree in conservation science from the Courtauld Institute of Art, University of London, UK. From 1991 to 2004 she worked for the Getty Conservation Institute on several multidisciplinary projects, focusing on the conservation of decorated surfaces on immovable heritage: wall

paintings, bas-reliefs, mosaics, and archaeological sites. Since 2009 she has been a teacher and researcher at SUPSI where she is involved in several conservation and research projects. She has authored three books and over fifty articles on the conservation of wall paintings.

Dirk Rieke-Zapp manages the business field of arts and culture at AICON 3D Systems, a German company developing, manufacturing, and distributing close range 3D measurement devices. He has a research and teaching background in earth sciences (M.Sc. 1998, Ph.D. 2002) with special interest in the application of close range measurement tools on surface process quantification. He is involved in several national and international research projects, serves on the editorial boards of surveying and archaeological journals, and plays an active role in international organizations.

Selma Rizvić, Ph.D., is an associate professor at the Faculty of Electrical Engineering of the University of Sarajevo, Bosnia and Herzegovina, and a founder of Sarajevo Graphics Group. She also works as a visual artist and head of the Broadcast Design Department at the Bosnia-Herzegovina Radio Television. Her scientific interests are computer graphics, computer animation, broadcast graphics, virtual heritage, and digital storytelling. She was involved in the FP7 Network of Excellence 270404 Virtual Museum Transnational Network (V-MusT.net) and co-chaired the visualization group of COSCH. She is currently (2016) involved in the H2020 Research and Innovation project iMARECULTURE. She and her colleagues from Sarajevo Graphics Group created many virtual cultural heritage projects, including Sarajevo Survival Tools, a virtual museum of the Sarajevo siege of 1992–96. More information at <http://people.etf.unsa.ba/~srizvic/>.

Santiago Royo is associate professor at the Universitat Politècnica de Catalunya (UPC) in Terrassa, near Barcelona, and Director of the Centre for Sensor, Instruments and System Development (CD6), a research and innovation centre in optical engineering in Terrassa. He has participated in and led research projects involving different, optical metrology techniques since the mid-1990s. He has over fifty refereed publications and nine patents, of which five have been licensed to companies. He is a co-founder of three spin-off companies, SnellOptics and Beamagine, both in Terrassa, Spain, and ObsTech in Santiago, Chile. He co-chairs the COST Action BM1205, on Laser Imaging for Skin Cancer Detection. He is a member of the Board of Stakeholders of Photonics21, a co-secretary of the Spanish mirror Fotónica21, and a member of the board of SECPhO, the Spanish Cluster on Photonics and Optics.

Christos Stentoumis is an engineer and a Ph.D. candidate at the Laboratory of Photogrammetry of the School of Rural and Surveying Engineering, National Technical University of Athens, Greece, from which he graduated in 2007. He has teaching and supervision experience in photogrammetry and computer vision. Previously he worked in the private engineering and geomatics sectors, 3D recording of high fidelity models mainly in the field of cultural heritage. He was a senior researcher on national and EU projects. He is a reviewer of several journals and conferences, including those of IEEE, IET, and ISPRS societies; Elsevier and MDPI publishers (e.g., *Image and Vision Computing* and *IET Image Processing*). In 2016 he co-founded the up2metric P.C., a computer vision engineering company, which specializes in consulting, R&D and custom software development in computer vision, photogrammetry, and remote sensing.

Levente Tamas received his M.Sc. and Ph.D. degrees in electrical engineering from the Technical University of Cluj-Napoca, Romania, in 2005 and 2010, respectively. He is a post-doctoral researcher at the Faculty of Computer Science and Automation of the Technical University of Cluj-Napoca, currently (November 2016) on study visit to the University of Applied Sciences, Bern, Switzerland. His research focuses on spatial perception and fusion of heterogeneous 2D/3D data. He has been actively involved in COSCH, contributing to work involving detection of material changes through 3D scanning, and data fusion.

Cristina Tedeschi graduated in architecture at the Politecnico di Milano, Italy, and received her Ph.D. in conservation from the same university in 2004. She was appointed assistant professor ICAR/19 the same year. She serves on the Ph.D. Council in Preservation of the Architectural Heritage as a member of different technical committees: repair mortars for historic masonry; design and application of hydraulic grouts for repair and strengthening of historic masonry structures; specifications for non-structural grouting of historic architectural surfaces; masonry strengthening with composite materials. She has authored more than a hundred papers in international journals, proceedings, and books chapters. She is currently (2016) head of the Laboratory for Diagnostic and Investigation on Built Heritage Materials at the Politecnico di Milano. Her main research activities are the characterization of materials and studies on compatibility and durability.

Despoina Tsiafaki is director of research at the Athena Research Center, Xanthi, Greece. She received her doctoral degree in archaeology from the Aristotle University of Thessaloniki. She worked in the Antiquities Department of the J. Paul Getty Museum, Los Angeles, where she was involved among others, in technological projects regarding cultural heritage. She has been involved in many projects in archaeology and cultural technology. She published several books on archaeology and pottery, as

author and editor, and over one hundred papers on Greek culture and cultural technology in international conference proceedings and journals. Her research involves archaeology, ancient ceramics, archaeometry, and cultural technology.

Jean-Marc Vallet, Ph.D., graduated in earth science from the University of Poitiers, France, in 1993. He is a research coordinator and researcher at the Interdisciplinary Centre for the Conservation of Cultural Heritage (CICRP) in Marseilles, France, which he joined in 1996. His main interest is in the conservation of wall paintings and stone. His research is on degradation mechanisms of built heritage surfaces and murals conservation, applying multi-analytical approaches, including developments of multidimensional databases and platforms for merging non-destructive testing (NDT) analyses on points clouds. He is involved in several national and international research programmes such as FIAT-LUX and MONUMENTUM.

Tatiana Vitorino graduated in conservation and restoration with a specialization in conservation science from the Department of Conservation and Restoration of the Faculty of Sciences and Technology, NOVA University of Lisbon, Portugal, in 2012, where she kept working as a research grantee. Since 2015 she has been a Ph.D. student in conservation science, in a collaboration between the NOVA University and the Nello Carrara Institute of Applied Physics, National Research Council of Italy. Her research interests concern the study of paintings and artists' materials, applying multi-analytical approaches and using historically accurate reconstruction techniques, while working within interdisciplinary teams.

E. Keats Webb is a digital imaging specialist at the Smithsonian's Museum Conservation Institute (MCI) in Suitland, Maryland, USA. Her work involves using a variety of scientific and computational imaging techniques to aid in the research and conservation of Smithsonian collections. She is also a doctoral candidate at the Science and Engineering in Arts, Heritage and Archaeology Centre for Doctoral Training (SEAHA CDT) at the University of Brighton, UK. She has an M.Res. in heritage science from University College London, UK, as part of the SEAHA CDT and a B.F.A. in photography from the University of North Carolina at Chapel Hill, USA.

Stefanie Wefers, Ph.D., is an archaeologist and research associate at the Institute for Spatial Information and Surveying Technology, i3mainz, at the University of Applied Sciences in Mainz, Germany, where she was also the grant holder manager for COSCH. She is a core member of the team designing and developing COSCH Knowledge Representation (COSCH^{KR}). She received her Ph.D. from the Westfälische Wilhelms-University Münster, Germany in 2008, for a thesis on Late Iron Age rotary querns in the Mayen and Lovosice quarry districts. In 2012 she completed a postdoctoral project on the Late Antique and Early Byzantine water-powered workshop and milling complex of Terrace House 2 in Ephesos, Turkey.

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