



Optics for Arts, Architecture, and Archaeology (O3A) VIII (OM103)

Conference Chairs: **Haida Liang**, Nottingham Trent Univ. (United Kingdom); **Roger M. Groves**, Technische Univ. Delft (Netherlands)

Programme Committee: **Dario Ambrosini**, Univ. degli Studi dell'Aquila (Italy); **Marta Castillejo**, Consejo Superior de Investigaciones Científicas (Spain); **Daniela Comelli**, Politecnico di Milano (Italy); **Claudia Daffara**, Univ. degli Studi di Verona (Italy); **Vincent Detalle**, Centre de Recherche et de Restauration des Musées de France (C2RMF) (France); **John K. Delaney**, National Gallery of Art (USA); **Martin C. Fischer**, Duke Univ. (USA); **Raffaella E. M. Fontana**, Istituto Nazionale di Ottica (Italy); **Igor P. Gurov**, ITMO Univ. (Russian Federation); **Alexander J. Kossolapov**, State Hermitage Museum (Russian Federation); **Gaël Latour**, Univ. Paris-Sud (France); **Nicola Masini**, Consiglio Nazionale delle Ricerche (Italy); **Vadim A. Parfenov**, S. I. Vavilov State Optical Institute (Russian Federation); **Luca Pezzati**, Istituto Nazionale di Ottica-CNR (Italy); **David R. Saunders**, International Institute for Conservation (United Kingdom); **Robert Sitnik**, Warsaw Univ. of Technology (Poland); **Piotr Targowski**, Nicolaus Copernicus Univ. (Poland); **Mathieu Thoury**, Synchrotron SOLEIL (France); **Vivi Tornari**, Foundation for Research and Technology-Hellas (Greece)

The Optics for Arts, Architecture and Archaeology Conference, 8th under the O3A series and 10th since its conception, is being held again in Munich as part of the SPIE Optical Metrology Symposium at the World of Photonics Congress in June 2021. We are proud to celebrate 20 years of this optics community in 2021.

O3A is an established event for discussing advanced methods and new instruments for the historical study, conservation and documentation of cultural heritage. The symposium is a unique forum focused on optics research in the field of heritage science. Optics applications in cultural heritage has a long and dynamic history owing to the non-destructive nature of optical imaging starting with microscopy, infrared photography and X-radiography. Optical imaging provided the most popular methods of examination for cultural heritage before micro-chemical analysis became possible. In recent years, the development of new imaging and spectroscopic techniques have revitalized the application of optics in cultural heritage. The non-invasive nature of these techniques has meant that whole objects and collections can now be examined with multiple techniques which will inevitably result in an unprecedented amount of data collected that will in turn push new boundaries in data and image processing methods. The demand of the developing European Research Infrastructure for Heritage Science (www.e-rihs.eu) for news instruments, data processing methods and facilities will no doubt advance the field even further.

The 2021 symposium will cover instruments and techniques that span the entire electromagnetic spectrum covering a broad range of scales along with the associated data and image processing and visualization methods. New instruments and techniques, multi-modal imaging and multi-technique integrated analysis and data fusion techniques that meets the challenges of big data analytics are expected to be the focus.

Contributions are welcome and will be considered in all fields of research for cultural and natural heritage including the following areas of interest:

- 3D topographic scanning, surface examination and analysis (e.g. RTI, structured light and other imaging and triangulation based methods, optical profilometry etc.)

- 3D tomographic imaging, stratigraphic and depth resolved methods (e.g. optical coherence tomography, non-linear microscopy, terahertz imaging, micro-CT etc.)
- structural analysis (e.g. holography and other interferometric techniques)
- imaging and spectroscopy for material analyses (e.g. the various spectral imaging modalities such as reflectance imaging from UV to infrared, fluorescence imaging and fluorescence lifetime imaging, laser induced breakdown spectroscopy, laser induced fluorescence and Raman spectroscopy, X-ray imaging, synchrotron based techniques etc.)
- remote imaging, sensing and spectroscopy at large stand-off distances including drone based methods
- new portable instruments for in situ applications
- multimodal imaging and multitechnique analysis
- multiscale and multiwavelength imaging for structural and material analysis
- light-matter interactions (e.g. fundamentals of laser interactions with materials, light induced material degradation, including those used for the illumination and excitation in the various techniques)
- advanced image processing methods including artificial intelligence and machine learning method to tackle big data problems
- new data visualization methods
- new methods and applications to cultural heritage research.

The symposium will be an ideal forum to introduce new applications, to exchange ideas and to discuss methods and best practices for optics applied to heritage science. The World of Photonics Congress offers a perfect opportunity for instrumentalists to engage with industry finding out the latest developments in sensor technology and optical components at the accompanying exhibition. Senior researchers, early career researchers, and students are encouraged to participate.

ABSTRACT SUBMISSION

By submitting an abstract, I agree to the following conditions:

AN AUTHOR OR COAUTHOR (INCLUDING KEYNOTE, INVITED, ORAL, AND POSTER PRESENTERS) WILL:

- An author or coauthor (including keynote, invited, and solicited speakers) will register at the reduced author registration rate, attend the meeting, and make the presentation as scheduled (Current SPIE Members receive an additional discount on the registration fee).
- Authors and coauthors attending the meeting will obtain funding for their registration fees, travel, and accommodations, independent of SPIE, through their sponsoring organisations before submitting abstracts.
- All clearances, including government and company clearance, have been obtained to present and publish. If you are a DoD contractor, allow at least 60 days for clearance.
- Please submit a **500-word text abstract** for technical review purposes that is suitable for publication. Accepted abstracts may be published with the printed Technical Programme for distribution at the meeting.
- Please also submit a **300-word text abstract** suitable for early release. If accepted, this abstract text will be published prior to the meeting in the online or printed programmes promoting the conference.
- A manuscript (6 pages minimum; 20 pages maximum) for any accepted oral or poster presentation will be submitted for publication in the Proceedings of SPIE in the SPIE Digital Library.

PREPARE TO SUBMIT:

- Have all contact information (full names, affiliations, addresses, phone numbers, and emails) for your coauthors ready.
- To provide the research community with enhanced access to information presented at SPIE conferences, SPIE will record the audio plus screen content of oral presentations and, with author permission only, will publish the recordings on the SPIE Digital Library. When submitting an abstract, you will be asked to respond to the permission request.
- Only original material should be submitted.
- Abstracts should contain enough detail to clearly convey the approach and the results of the research.
- Commercial papers, papers with no new research/development content, and papers where supporting data or a technical description cannot be given for proprietary reasons will not be accepted for presentation in this conference.
- Please do not submit the same, or similar, abstracts to multiple conferences.

Submit an abstract and summary online at:

spie.org/omcall

- If you have already chosen a conference to submit to, return to the previous page and click the "Submit an abstract" link.
- If you haven't yet chosen a conference to submit to, browse to locate a conference from the link at: <http://spie.org/OM>. Once you choose a conference, click "submit an abstract" from the conference call for papers.
- You will be prompted to sign in to the spie.org system and follow the submission wizard. If you have a spie.org account, sign in using your username and password. First-time users of spie.org can create a new account by clicking on the "create new account link."

REVIEW, NOTIFICATION, AND PROGRAMME PLACEMENT INFORMATION

- To ensure a high-quality conference, all abstracts and Proceedings manuscripts will be reviewed by the Conference Chair/Editor for technical merit and suitability of content. Conference Chair/Editors may require manuscript revision before approving publication, and reserve the right to reject for presentation or publication any paper that does not meet content or presentation expectations. SPIE's decision on whether to accept a presentation or publish a manuscript is final.
- The contact author will be notified of abstract acceptance and sent manuscript instructions by e-mail no later than **26 February 2021**.
- Final placement in an oral or poster session is subject to the Chairs' discretion. Instructions for oral and poster presentations may be found from the "For Authors/Presenters" link on the event page, spie.org/omcall.

INFORMATION ON THE PROCEEDINGS OF SPIE IN THE SPIE DIGITAL LIBRARY

Manuscript instructions are available at **spie.org/manuscripts**

- Full-manuscripts will be Chair/Editor-reviewed and published in the Proceedings of SPIE in the SPIE Digital Library.
- Manuscript instructions will be emailed to the contact author and are also available from the "For Authors/Presenters" link on the conference website.
- Authors must be authorized to transfer copyright of the manuscript to SPIE, or provide a suitable publication license.
- Only papers presented at the conference and received according to publication guidelines and timelines will be published in the conference Proceedings in the SPIE Digital Library.
- SPIE partners with relevant scientific databases to enable researchers to find the papers in the Proceedings of SPIE easily. The databases that abstract and index these papers include Astrophysical Data System (ADS), Ei Compendex, CrossRef, Google Scholar, Inspec, Scopus, and Web of Science Conference Proceedings Citation Index.

SPIE WILL PUBLISH YOUR RESEARCH GLOBALLY

www.SPIEDigitalLibrary.org

Your work will live far beyond the conference room—all proceedings from this meeting will be published in the SPIE Digital Library. Promote yourself, your ideas, and your organization to millions of key researchers from around the world through this web-based repository of the latest technical information.

Abstracts Due: **Extended to 1 FEBRUARY 2021**
Manuscript Due Date: **14 APRIL 2021**

www.spie.org/om103