

Contributors

Olivier Bonnerot holds a Master of Engineering and an MSc in analytical chemistry from Chimie ParisTech – Université PSL. He subsequently earned a PhD in Mediterranean archaeology from the University of Cyprus, focusing on the materials used in early Byzantine wall mosaics. Currently, he is a researcher at the Cluster of Excellence ‘Understanding Written Artefacts’ (UWA) at Universität Hamburg, where he investigates the evolution of Greek inks from the Hellenistic Period to Late Antiquity.

Sebastian Bosch studied chemistry and obtained his PhD in organic chemistry from Friedrich-Alexander-Universität Erlangen-Nürnberg. Since 2017, he has served as manager of the Mobile Lab within the Centre for the Study of Manuscript Cultures (CSMC) at Universität Hamburg, which has been home to the Cluster of Excellence ‘Understanding Written Artefacts’ (UWA) since 2019. His research focuses on the analytical study of organic and inorganic materials in the fields of art and cultural heritage.

Claudia Colini is junior professor of archaeometry at the Institute for Archaeology and Cultural History of the Ancient Mediterranean, Universität Hamburg, and head of the mobile lab of the CSMC and Cluster of Excellence ‘Understanding Written Artefacts’ at the same university. She has a background in archaeometry and book conservation and is specialised in Islamic manuscripts and their materials. Her current research projects focus on the coexistence of different writing supports, inks and colours used in manuscripts in the early centuries of Islamic Egypt.

Tomasz Goslar – PhD in physics, professor of earth sciences, awarded by the Foundation for Polish Science in 2014 – is a specialist in geochronology and the application of radioisotopes in the study of past environmental changes. He is the author/co-author of over 150 scientific papers, with over 700 citations (according to Google Scholar). He has built up the Poznań Radiocarbon Laboratory since 2001 (currently leader), that has dated over 150000 samples for about 5000 scientists (mostly earth scientists and archaeologists) worldwide.

Sylvio Haas is the beamline scientist in charge of the SAXSMAT beamline P62 at synchrotron PETRA III at the Deutsches Elektronen-Synchrotron (DESY) in Hamburg, Germany. Before taking the lead in planning, constructing and operating the dedicated X-ray scattering beamline at DESY, Sylvio held positions at other cutting-edge synchrotron facilities – including BESSY II in Berlin, Germany, and the MAX IV Laboratory in Lund, Sweden – where he has played a key role in developing instrumentation for performing *in situ* and *operando* structural investigations based on the small-angle X-ray scattering method. Sylvio is constantly developing new advanced methods related to small-angle X-ray scattering to enable even deeper views into the nano-world. Recently, Sylvio has started exploring the possibilities of applying X-ray scattering techniques in the field of cultural heritage science, particularly in the analysis of written artefacts.

Agnieszka Helman-Ważny is a member of the Cluster of Excellence ‘Understanding Written Artefacts’ (UWA) at CSMC, at Universität Hamburg. She is employed at Division 4.5: Analysis of Artefacts and Cultural Assets at the Federal Institute for Materials Research and Testing (Bundesanstalt für Materialforschung und -prüfung) in Berlin, and as professor of book studies at the University of Warsaw. Her publications include monographs and articles on the history of books and paper in

Central Asia and the Himalayas, material culture of Tibet, heritage studies, codicology of Silk Road manuscripts and the history of Asian book collections, including *The Archaeology of Tibetan Books* (Brill, 2014), and *The Mustang Archives: Analysis of Handwritten Documents via the Study of Papermaking Traditions in Nepal* (Brepols, 2021, co-authored with Charles Ramble).

Kyle Ann Huskin is a multispectral imaging specialist at the CSMC, Universität Hamburg, and a member of the Cluster of Excellence 'Understanding Written Artefacts', where she focuses on image processing. Her educational background is in the humanities, with research focusing on medieval French, English and Latin texts, issues of gender and authority, and codicology. Her dissertation uses multispectral imaging to recover the text of *Les Eschéz d'Amours* from the water-damaged Dresden witness.

Christian Luczanits is David L. Snellgrove Senior Lecturer in Tibetan and Buddhist art at the Department of the History of Art and Archaeology, School of Oriental and African Studies (SOAS), University of London. His research focuses on the Buddhist art of India and Tibet, in particular Gandhāran and early western Himalayan art, the latter largely based on extensive field research and documentation done *in situ*. Luczanits has also held visiting professorships at UC Berkeley in 2004–2005 (Freeman), at the Freie Universität Berlin in 2006–2008, and at Stanford University and UC Berkeley (Numata) in the first half of 2010. Before joining SOAS, he was senior curator at the Rubin Museum of Himalayan Art in New York, NY. Since joining SOAS, he has led an AHRC-funded research project, 'Tibetan Buddhist Monastery Collections Today', which includes documentation in Mustang.

Hussein Mohammed received his Master's degree in informatics engineering from Universidade do Algarve (University of Algarve), Portugal, and continued his work on shape detection and recognition as a research associate at the Visual Computing Lab of the same university. In October 2015, he moved to Universität Hamburg in order to continue his research in the field of computational document analysis. In March 2019, he received his doctoral degree in computer science from Universität Hamburg for his work in the computational analysis of handwriting styles. Since July 2019, he has been a principal investigator of the Cluster of Excellence 'Understanding Written Artefacts' (UWA) at Universität Hamburg and head of the Visual Manuscript Analysis Lab. His main research interests are pattern recognition, machine learning and computer vision.

Charles Ramble is *directeur d'études* in the History and Philology Section of the École Pratique des Hautes Études, Université PSL, Paris, and director of the Tibetan studies research team of the Centre for Research on East Asian Civilisations (CRCAO). From 2000 to 2010 he held the position of university lecturer in Tibetan and Himalayan studies that had recently been established at the University of Oxford, UK, with which he remains associated as a university research lecturer. From 2006 to 2013 he was president of the International Association for Tibetan Studies. He is currently director of the European Society for the Study of Himalayan and Central Asian Civilisations (SEECHAC). His research interests include the Bon religion, Tibetan pagan religion in the Himalayan region, the social history of Tibetan societies, pilgrimage and biography.

Sowmeya Sathiyamani is a doctoral researcher at the Cluster of Excellence 'Understanding Written Artefacts' (UWA), Universität Hamburg, with a background in chemistry. Prior to starting her doctorate, she worked as a project associate at the Indian Institute of Heritage on a project involving the archaeometric study of pottery technology from the Early Harappan Period. She has also been a

research associate in UWA project RFK 01 'The Scribe's Choice: Writing Supports in Arabic Documents of the Early Islamic Centuries' since 2022.

Stephan Seifert is a professor of chemometrics at the Hamburg School of Food Science. His research focuses on the interface between the development and validation of chemometric and bioinformatic methods and their practical application to spectrometric, spectroscopic and sequence data across various research fields.

Ivan Shevchuk is a multispectral imaging technician at the CSMC, Universität Hamburg, and a member of the Cluster of Excellence 'Understanding Written Artefacts'. His background is mechanical engineering, and his specialisations are multispectral imaging and image processing. His wide-ranging technical knowledge aids his current work on operating and improving the imaging equipment and advancing image-processing methods.

Lucas Voges is a doctoral student at the CSMC, the Cluster of Excellence 'Understanding Written Artefacts' and the Department of Chemistry, Universität Hamburg. His work focuses on chemometric and bioinformatic approaches to contribute to the characterisation of the biological identity and the historical background of written artefacts.

