

Session

Entry ID: 197

Title: **Bridging Science and Culture: Exploring Multidisciplinary Approaches to the Knowledge and Preservation of Cultural Heritage**

Description (250-300 words required)

At the core of the Venice Charter-1964 is the “recourse to all the sciences and techniques” in the preservation of monuments and sites. This session aims to address the role of various scientific and technological approaches in our understanding and preserving cultural heritage. In the last years the network Heritage Science Austria has been playing a pivotal role in Austria, fostering collaboration within Austria and throughout Europe through the ongoing implementation of the national node of E-RIHS (European Research Infrastructure for Heritage Science). This session organized by HSA wants to offer a venue to ongoing multi- and interdisciplinary projects utilizing advanced analytical methods, such as microscopy, spectrometry, elemental analysis and XRF-based methods, gas-chromatography, thermoanalysis, microbiology, and environmental monitoring, to enquire the composition, degradation processes, and preservation needs of cultural heritage objects. Topics of interest may include: the identification of microstructures; analysis of surface morphology and degradation mechanisms; the study of microorganisms and biological growth; the identification of chemical composition and elemental analysis; the determination of metal composition and analysis of corrosion products on metal artifacts; the characterization of organic materials such as resins, varnishes, and adhesives as well as the identification of organic compounds in archaeological residues; the identification of trace elements for provenance studies; the analysis of degradation products in organic materials; the investigation of thermal stability and decomposition kinetics; the assessment of biodeterioration and microbial activity. Last but not least we would welcome papers addressing the identification of microbial communities in museums and collections, the evaluation of conservation strategies to mitigate microbial degradation and the monitoring of environmental factors such as temperature, humidity, and pollution levels, also in relation to the on-going climate crisis.

Motivation:

The motivations of this session are multifarious and are connected to a number of crucial topics in the ongoing research around heritage.

1. **Interdisciplinary Collaboration:** This session provides a platform for researchers from diverse backgrounds to come together and share insights from their collaborative projects, highlighting the synergy between different scientific and technological approaches in cultural heritage preservation.
2. **Advancements in Analytical Techniques:** The session potentially showcases the latest advancements in analytical methods applied to cultural heritage conservation. By featuring projects utilizing cutting-edge techniques such as microscopy, spectrometry, elemental analysis, and gas chromatography, participants can gain valuable knowledge about innovative approaches to studying and preserving cultural artifacts.
3. **Understanding Composition and Degradation Processes:** Each analytical method offers unique capabilities for examining the composition and degradation processes of cultural heritage objects. By presenting research on microstructures, surface morphology, and degradation mechanisms, the session fosters a deeper understanding of the materials used in artifacts and the factors contributing to their deterioration over time.
4. **Insights into Preservation Needs:** By employing advanced analytical methods, researchers can gain insights into the preservation needs of cultural heritage objects. From identifying chemical compositions to assessing thermal stability and microbial activity, these insights inform conservation strategies aimed at safeguarding cultural artifacts for future generations.
5. **Addressing Contemporary Challenges:** The session addresses contemporary challenges facing cultural heritage preservation, such as climate change and environmental degradation. By exploring the monitoring of environmental factors and the impact of climate change on heritage sites, participants can contribute to the development of proactive conservation measures tailored to the challenges of the 21st century.

Overall, this session serves as a vital forum for exchanging knowledge, fostering collaboration, and advancing the field of heritage science through the application of advanced analytical methods. By potentially addressing a wide range of topics, it may contribute to the ongoing dialogue surrounding the study and preservation of cultural heritage for future generations.

Target Audience:

The target audience of the proposed session includes a wide range of researchers engaged in the analyses and conservation of cultural heritage, from students and early career researchers to advanced scientists and practitioners.

Keywords (3-5 keywords required):

Heritage sciences; archaeometry; conservation science; Heritage Science Austria; E-RIHS.