



PALERMO

September 18 – 22, 2023



BOOK OF ABSTRACTS



42nd Scientific Instrument Symposium

Through Ages, Cultures, Concepts:
Instruments in Collections, Books, Archives

XLII SIC Symposium

PALERMO, 18 – 22 September 2023

Scientific Organizing Committee

SIC Board: Roland Wittje (Indian Institute for Science and Technology), Tacye Phillipson (National Museums of Scotland), Louise Devoy (Royal Observatory of Greenwich); *local host:* Ileana Chinnici (INAF Osservatorio Astronomico di Palermo); *co-organizers:* Antonella Gasperini (INAF Servizio Musei Biblioteche e Archivi), Aurelio Agliolo Gallitto e Giuseppe Lazzara (University of Palermo)

Local Organizing Committee

Maria Rosalia Carotenuto (*chair*), Manuela Coniglio, Maria Rita Caruso, Giulia D'Agostino, Laura Daricello, Flavio Morale, Maria Luisa Tuscano, Salvatore Speziale.

Webpage: www.sic2023.net (by Promimpresa srl)

- 4) A Mysterious Coulomb Torsion Balance in the collections of the Deutsches Museum
Daniel Liu (Ludwig Maximilian University Munich), Jesse Garrison (University College London), Julien Gressot (University of Neuchâtel) & Elisabetta Rossi (University of Milan) p. 111
- 5) Nomadic geochemistry in mid-19th century Ottoman Empire: John Lawrence Smith's moving laboratory
Gönenç Göçmengil (Istanbul University) & Fatma Gülmez Yıldırım (Istanbul Technical University) p. 112

Thu, 21 Sept (Faculty of Theology)

9.30 – 11.30 Parallel sessions (A, B, C)

Session A (9.30 – 11.30) – Aula Maurolico B

OPEN CHALLENGES IN THE CONSERVATION OF SCIENTIFIC INSTRUMENTS (1)

Organized by Maria Rosalia Carotenuto, Anna Giatti, Giuseppe Lazzara and Emma Angelini p. 113

Chair: *Emma Angelini (Politecnico di Torino, Italy)*

- 1) Assessing the conservation status in scientific instrument collections: strategies and tools
Anna Giatti (Fondazione Scienza e Tecnica, Florence) p. 114
- 2) Conservation practices on working instruments. A case study from the Museo Nazionale Scienza e Tecnologia Leonardo da Vinci
Marianna Cappellina & Luca Reduzzi (Museo Nazionale Scienza e Tecnologia Leonardo da Vinci) p. 115
- 3) Master thesis: Study and chosen restoration of ten electrostatic machines from the Rijksmuseum Boerhaave in Leiden
Mathilde Sneiders (Atelier conservation-restauration Sàrl) p. 116
- 4) “A WARNING FROM MARS”. Climate risk assessment in the Museo della Specola, Palermo
Maria Rosalia Carotenuto, Giuseppe Lazzara, Giuseppe Cavallaro & Bartolomeo Megna (University of Palermo), Dario Camuffo & Antonio della Valle (CNR-ISAC, Padova) & Fernanda Prestileo (CNR-ISAC, Roma) p. 117
- 5) Preserving Palermo University's scientific legacy
Marco Di Bella (University of Palermo) p. 119

“A WARNING FROM MARS”. Climate risk assessment in the Museo della Specola, Palermo

Maria Rosalia Carotenuto¹, Giuseppe Lazzara¹, Giuseppe Cavallaro¹, Bartolomeo Megna¹, Dario Camuffo², Antonio della Valle² and Fernanda Prestileo³

¹ *University of Palermo, Italy*; ² *CNR-ISAC, Padova, Italy*; ³ *CNR-ISAC, Roma, Italy*

Museum microclimate play a key role in the conservation of scientific instruments on display. Finding appropriate values of temperature and relative humidity to guarantee the safeguard of entire collections is a difficult task. Each object responses peculiarly to the environment depending on its composition, conservative history, and its adaptations to the environment variability over years. At times, the different materials coexisting in a scientific instrument can also develop pathologies not yet fully known. The question become even more challenging if it is considered that microclimate management is not easy, especially in buildings not designed for conservation purposes.

The *Museo della Specola* in Palermo has recently face these critical issues. The museum is in the ancient Observatory, built in 1790, on the top of the 12nd-century Royal Palace. Although efforts have been made to protect the scientific collection over the years, there is still much to be done. An exhibited object had clearly stated the urgency of an environment management improvement. It is a 19th-century painted wooden globe reproducing the surface of Mars: in less than two years, damages of its pictorial layers have occurred at a slow but progressive rate. Conservation measures have been adopted to stop the serious deteriorating processes of the globe, but the risk of further deterioration phenomena involving other scientific instruments is expected to increase substantially if no actions are taken.

This contribution intends to present the results of the study of the thermo-hygrometric values measured in the museum over recent years to assess microclimate risks to the exhibited objects. Specific actions to improve climate conditions will be proposed.

Maria Rosalia Carotenuto is a conservator. Since 2022, she is a Ph.D. student at the Physics and Chemistry Department of the University of Palermo. In collaboration with INAF-Astronomical Observatory of Palermo, she is carrying out a research project on the preventive conservation of scientific heritage of astronomical interest.

Giuseppe Lazzara is an associate professor at the Department of Physics and Chemistry, University of Palermo. His scientific activity falls within the field of physical chemistry of large interphase systems. He is involved in projects aimed at the development of new materials, based on nanotechnologies, for the preservation of art objects.

Giuseppe Cavallaro is an assistant professor at the Department of Physics and Chemistry, University of Palermo.

Dario Camuffo is a physicist specialised in Atmospheric Physics, Climate and Conservation of Cultural Heritage. Until 2008, he was Research Director at the CNR – ISAC in Padua, where he is now Senior Associate after his retirement. He carried out scientific research activities applied to cultural heritage and climate change.

Antonio della Valle is a researcher at the CNR – ISAC in Padua. His research field concerns the study of the Microclimate for the conservation of cultural heritage.

Fernanda Prestileo, conservation scientist and researcher at the CNR – ISAC in Roma. She deals with research, study and teaching on issues related to indoor deterioration processes of artworks, especially stone and paintings. Her research activity mainly aims at investigating methodologies and techniques for diagnostics and microclimatic monitoring of Cultural Heritage.

Bartolomeo Megna, see Poster 16.

Contact e-mail: mariarosalia.carotenuto@unipa.it