SCHOOL OF PYROTECHNOLOGY AND ANCIENT METAL PRODUCTION

Artemonas, Siphnos, Greece, 28 September – 7 October 2026

Following the positive response to the 1st Circular, we are pleased to announce the 2nd Circular of the *1st School of Pyrotechnology and Ancient Metal Production*, which will take place in Artemonas, Siphnos, Greece, from 28 September to 7 October 2026.

The *School of Pyrotechnology and Ancient Metal Production* is organised within the framework of the project "METAL PLACES II: Following the Traces of the Past along the Paths of the Eastern Mediterranean".

The *School of Pyrotechnology and Ancient Metal Production* is held under the auspices of the Hellenic Society for Archaeometry and is organised by the Laboratory of Palaeoenvironment and Ancient Metals Studies of the Institute of Nanoscience and Nanotechnology, NCSR "Demokritos", in collaboration with the project partners.

The *School of Pyrotechnology and Ancient Metal Production* aims to introduce participants to pyrotechnology, archaeometallurgy and archaeometric methods for the study of ancient metals and metallurgical remains. It also seeks to foster collaboration and knowledge exchange among students, early-career researchers and professionals from different scientific fields who share an interest in ancient technologies and the mining and metallurgical heritage of the Eastern Mediterranean.

The choice of Siphnos as the host location is closely linked to the island's long-standing mining and metallurgical tradition and its important role in the study of ancient metallurgy in the Aegean. The *School of Pyrotechnology and Ancient Metal Production* will take place at the Marianthi Simou Cultural Centre in Artemonas.

EDUCATIONAL PROGRAMME AND PRACTICAL TRAINING

The *School of Pyrotechnology and Ancient Metal Production* combines lectures, laboratory training, experimental archaeology and field activities. Through lectures, practical exercises and hands-on activities, participants will engage with ancient technologies of metal production and processing, as well as with the modern methods used for their study. All participants will receive educational material and selected bibliography.

The theoretical programme includes lectures on the geology of Greece and Cyprus and some of the most important ancient mining and metallurgical centres, with particular emphasis on Laurium, Siphnos, Seriphos, Kythnos and Keros. Participants will be introduced to the basic principles of metallurgical technology and pyrotechnology, as well as to the production sequence from ore extraction to metal production, alloying and the manufacture of metal objects.

The project "METAL PLACES II: Following the traces of the past on the paths of the Eastern Mediterranean" has been approved and is being implemented within the framework of the INTERREG VI-A Greece–Cyprus Cooperation Programme 2021–2027 and is co-funded by the European Union (ERDF) and national resources of Greece and Cyprus.

In addition, participants will be introduced to key archaeometric and analytical methods applied to the study of archaeological materials and metallurgical remains. The programme will cover techniques of elemental analysis, microscopic observation, material characterisation and dating, including XRF, ICP-MS, optical and electron microscopy coupled with EDS, Mössbauer spectroscopy, as well as GIS applications in archaeological research.

Practical training will include experiments in metal production using techniques employed in antiquity, as well as the construction and operation of a metallurgical furnace based on prehistoric models. Participants will also take part in laboratory exercises on the documentation, sampling and study of metallurgical remains, as well as in educational visits to archaeological sites, mining landscapes and locations of geological interest on Siphnos and Seriphos.

Participants will also work individually or in small groups on short research topics, which they will present at the final session of the School.

The project "METAL PLACES II: Following the traces of the past on the paths of the Eastern Mediterranean" has been approved and is being implemented within the framework of the INTERREG VI-A Greece–Cyprus Cooperation Programme 2021–2027 and is co-funded by the European Union (ERDF) and national resources of Greece and Cyprus.

PRELIMINARY PROGRAMME

Monday 28/9	Tuesday 29/9	Wednesday 30/9	Thursday 1/10	Friday 2/10	Saturday 3/10	Sunday 4/10	Monday 5/10	Tuesday 6/10	Wednesday 7/10
10:00-10:45 Registration (program, practical information) + Official welcome (opening remarks, introductions, presentation of the School theme)	**10:00-10:45** From Ore to Silver: Metallurgical Processes in Ancient Lavreotiki	**10:00-11:15** From ore to metal: the copper production sequence	**10:00-10:45** Iron metallurgy: The manufacturing cycle of an iron artefact	**Metal production experiment**	**Educational visit to Seriphos**	**Rest day**	**10:00-10:45** Results and interpretation of the metal production experiment: breaking the furnace and examining the products of smelting	**Educational visit to Agios Sostis**	**10:00-14:00** Participant Presentations (preparation and oral presentation)
10:45-11:30 Introduction to Archaeometry, "Bridging Archaeology and Science/ Archaeometry"	**10:45-11:30** Rethinking Early Cycladic Metallurgy: Evidence from Keros-Dhaskalio	**10:15-12:00** Copper alloys from the Bronze Age until the Roman times: enduring traditions and technical innovations	**10:45-11:30** Introduction to analytical techniques in Archaeometry, Part I (XRF, SEM, OM, ICP-MS, LIA)				**10:45-11:30** Documentation and Sampling (photos, recovery of slag and furnace fragments, initial macroscopic examination of products		
11:30-11:45 **Coffee break**	**11:30-11:45** **Coffee break**	**12:00-12:15** **Coffee break**	**11:30-11:45** **Coffee break**				**11:30-11:45** **Coffee break**		
11:45-12:30 Introduction to Pyrotechnology (ceramics, glass, metals)	**11:45-12:30** EBA metallurgical production on Siphnos	**12:15-14:00** Experiment: construction of a metallurgical furnace	**11:45-12:30** Mössbauer spectroscopy in Archaeometry				**11:45-13:15** XRF Analysis (Elemental analysis of experimental slag and metal, initial interpretation of compositional data)		
12:30-13:15 Geology of Greece and introduction to Archaeometallurgy	**12:30-13:15** Early and Middle Bronze Age copper metallurgy of Cyprus		**12:30-13:15** Introduction to Analytical techniques in Archaeometry (part 2) (dating techniques, sampling and preparation techniques, GIS applications)				**13:15-14:00** Classical and AI supported approaches for the evaluation and categorization of multimodal data		
13:15-16:00 **Lunch**	**13:15-16:00** **Lunch**	**14:00-16:00** **Lunch**	**13:15-16:00** **Lunch**				**14:00-16:00** **Lunch**		**14:00-16:00** **Lunch**
16:00-18:00 Visit to the Lempesis pottery workshop	**Public information event for the METAL PLACES II project**	**Educational visit to Agios Andreas**	**16:00-18:00** XRF analyses, optical microscopy observations and sampling for OM and SEM				**16:00-18:00** Optical Microscopy and Comparative Interpretation (preparation and examination of slag and metal samples under optical microscopy)		**16:00-18:30** Documentary screening
19:30 Welcome reception									**19:00** Farewell dinner

The project "METAL PLACES II: Following the traces of the past on the paths of the Eastern Mediterranean" has been approved and is being implemented within the framework of the INTERREG VI-A Greece–Cyprus Cooperation Programme 2021–2027 and is co-funded by the European Union (ERDF) and national resources of Greece and Cyprus.

INSTRUCTORS

The educational programme will be delivered in the form of lectures by researchers, university lecturers and specialists with expertise in archaeometallurgy, archaeometry, geology, materials science and archaeology.

The instructors of the *School* include: Yannis Bassiakos, Yannis Papadatos, Eleni Filippaki, Evangelos Tsakalos, Maria Kazantzaki, Andreas Charalambous, Demetrios Ioannides, Anno Hein, Ioannis Sanakis, Michel Roggenbucke, Irini Kotzamanidi, Maria Kaparou, Frank Hulek, Magda Giannakopoulou and Georgios Gavalas.

TARGET AUDIENCE

The *School of Pyrotechnology and Ancient Metal Production* is intended for undergraduate and postgraduate students, PhD candidates, early-career researchers, archaeologists, geologists, conservators, materials scientists, cultural heritage professionals and anyone interested in archaeometallurgy, pyrotechnology and archaeometric applications.

The working language of the *School* will be English.

BENEFITS TO PARTICIPANTS

Participation in the *School of Pyrotechnology and Ancient Metal Production* is free of charge.

The following will be provided during the programme:

- educational material,
- coffee and refreshments during breaks,
- light lunch on teaching days,
- certificate of attendance upon successful completion of the programme.

Participants are responsible for covering their own travel and accommodation expenses, as well as meals not included in the programme.

APPLICATIONS

Interested applicants are invited to submit their application by email to: metalplaces.interreg@gmail.com

Applications should include:

- full name,
- institution or professional affiliation, if applicable,
- current position, e.g. student, researcher, professional,
- a short statement of interest,
- contact details.

The deadline for the submission of applications is 31 August 2026.

The number of participants is limited.

For further information regarding the *School of Pyrotechnology and Ancient Metal Production*, please visit: https://metalplaces.eu/metal-places-2 or contact: metalplaces.interreg@gmail.com

The Organising Committee

The project "METAL PLACES II: Following the traces of the past on the paths of the Eastern Mediterranean" has been approved and is being implemented within the framework of the INTERREG VI-A Greece–Cyprus Cooperation Programme 2021–2027 and is co-funded by the European Union (ERDF) and national resources of Greece and Cyprus.

METAL PLACES II

NATIONAL CENTRE FOR SCIENTIFIC RESEARCH "DEMOKRITOS"
P.O. BOX 60037 | 15310 AGIA PARASKEVI • GREECE | TEL: 0030 210 650 3000 | www.demokritos.

Ephorate of Antiquities of Cyclades

Troodos Network OF THEMATIC CENTERS Δίκτυο Τροόδους ΘΕΜΑΤΙΚΩΝ ΚΕΝΤΡΩΝ

The project "METAL PLACES II: Following the traces of the past on the paths of the Eastern Mediterranean" has been approved and is being implemented within the framework of the INTERREG VI-A Greece–Cyprus Cooperation Programme 2021–2027 and is co-funded by the European Union (ERDF) and national resources of Greece and Cyprus.