



POSTDOC FELLOWSHIP

Duration : 1 year contract starting September 1st, 2020, non-renewable

Gross monthly salary : € 2700

OBJECTIVES

1 year post-doctoral contract in the framework of the ERC project "History of the Tocharian texts of the Pelliot collection". This ERC project focuses on the study of Buddhist culture in the Kucha region of the Tarim Basin (present-day Xinjiang, China) in the second half of the 1st millennium CE. For this purpose, documents in Tocharian and in Sanskrit of the Pelliot Kuchean Collection, held in the French National Library (BNF), will be studied by both historians and linguists and physicochemists.

Within this vast project, the main objective of this postdoctoral contract is to provide information on the chemical composition of Chinese inks from manuscripts representative of the collections of the Pelliot Koutchéen collection in order (1) to feed knowledge of the techniques used for their manufacture, in enlightening likely specificities of the Tokharian manuscripts and (2) to allow the comparison of their compositions with those of Chinese inks, little experimentally documented to date.

The second objective of this doctoral contract will be to improve micro-sampling techniques on archaeological papers to obtain data on the composition of the inks used minimizing the effects of these sampling, in particular by making them invisible to observation.

MAIN ACTIVITY

➤ To characterize the constituent materials of Chinese inks in manuscripts (identification of soots constituting the basis of inks, identification of additives and binders) by separation techniques based on the use of pyrolysis, gas chromatography and spectrometry massive. In order to optimize this characterization, a pyrolysis-comprehensive gas chromatography-mass spectrometry (Py-GCxGC/MS) experiment will be used for its great resolving power and its capacities to identify the trace components in complex mixtures.

➤ To establish a Py-GCxGC/MS data analysis and processing protocol for the analysis of Chinese inks from Pelliot Koutchéen manuscripts under micro-sampling conditions.

➤ All of the analyzes and data processing will be done at the Center for Research on Conservation (CRC) on the site of the National Museum of Natural History (Paris, 5th arrondissement) in interaction with researchers from the laboratory involved in this project.

JOINT COMPETENCES

- Multidisciplinary collaboration with historians currently working on ancient manuscripts.
- Participation in conferences.
- Writing and publication of research works.

REQUIRED EXPERIENCE

Knowledge

- Strong knowledge of separation methods, especially in gas chromatography, and in mass spectrometry for data analysis (fragmentation mechanisms).
- Knowledge or interest in the study of heritage materials.

Know how

- Experience in analysis techniques using GC/MS (maintenance and control of equipments).
- Practices in data processing methods (knowledge of statistical methods will be appreciated)

Manners

Autonomy, thoroughness, good interpersonal skills and sensitivity to safety rules.

DESIRABLE EDUCATION AND EXPERIENCE

Initial training in analytical chemistry, doctorate level.

Previous experience in the characterization of complex mixtures by gas chromatography/mass spectrometry, and more particularly in GCxGC/MS will be appreciated.

For any information please contact : michel.sablier@mnhn.fr, +33 1 40 79 53 23

APPLICATION :

Send a CV, a motivation letter and recommendation letter (s) by email to the following addresses:

georges.pinault@ephe.psl.eu (project manager)

michel.sablier@mnhn.fr (scientific partner - postdoctoral supervision)