Jerzy Haber Institute
of Catalysis and Surface Chemistry
Polish Academy of Sciences

HR EXCELLENCE IN RESEARCH

KSN 4/2020 Kraków, 23.06.2020

Assistant Professor (post-doc) in Cultural Heritage Research group

- Employer: Jerzy Haber Institute of Catalysis and Surface Chemistry Polish Academy of Sciences, Krakow, Poland
- Research field:
  - Mechanical engineering > stress field modelling
  - Physics > modelling and experimental characterisation of transport processes
  - Physics > modelling of complex systems
  - Mathematics > fractal analysis
  - Computer science/Mathematics > image processing
- Researcher profile: R2
- Deadline for applications: 31.07.2020, 15:00 – CEST
- Place: Poland, Kraków
- Type of contract: temporary – 36 months
- Employment contract: full-time
- Working hours/week: 40
- Start of employment: 15.09.2020

Jerzy Haber Institute of Catalysis and Surface Chemistry PAS invites applications for an Assistant Professor (post-doc) position in the Cultural Heritage Research group.

The candidates who meet the conditions stated in the act "Ustawa o Polskiej Akademii Nauk" dated 30 April 2010 (Dz.U. 2018 poz. 1475 z póź. zm.), art 89. ust 5 for the position of Assistant Professor (adjunct) are encouraged to apply for the position.

The Assistant Professor reporting to the head of the CHR group will work on the development of a comprehensive mechanical model of historical, aged paint layers - innovative at a global scale. The paint layer is a complex assembly of strata of humidity-sensitive materials which have - over centuries - aged, cracked and delaminated. Cracks join up into the network – the craquelure pattern - which is a distinctive characteristic of materials and physical structure of the artwork, an outcome of the construction and painting techniques employed by the workshop and the artist. The Assistant Professor will work on the analysis of craquelure patterns in real objects using image analysis methods.

The Assistant Professor will be responsible for:

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phone +48 12 425 19 23
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- identification extraction, analysis and categorization or craquelure patterns in paintings;
- developing a comprehensive 3D mechanical model of historical paint layers, especially in canvas paintings, which would allow for better understanding of mechanisms and processes involved in CP formation based on finite element modelling using COMSOL Multiphysics or Abaqus software for analysis of strain/stress fields;
- determining the vulnerability of historical paint layers with developed craquelure pattern to relative humidity variations, also after conservation treatments;
- application for new projects.

Required education:

Doctoral degree in one of the two groups of disciplines: material science, mechanical engineering, physics or mathematics and computer science.

Skills/Qualifications:

1. Experience in modelling of complex systems or experience in image analysis;
2. Publications in journals enlisted in JCR;
3. Research experience in institutions outside Poland;

Specific requirements

1. An application.
2. Consent to the processing of personal data for the needs necessary to carry out the recruitment process in accordance with the Act of 29 August 1997 on the protection of personal data (t.j. Dz. U. z 2016 r. poz. 922, z 2018 r. poz. 138, 723.) and fill in the form „Consent to the processing of personal data" confirming acquainting with its content. The form is available on the institute website [FORM].
3. A copy of the scientific degree certificate.
4. Full CV (including information on maternal leaves, voluntary work and periods of work in the industry).
5. At least one opinion on the Candidate given by an independent researcher.
6. List of scientific achievements (scientific papers, patent, patent applications, grants etc.).

Languages

English – fluent in speech and writing

Research experience

Experience in mathematical modelling of complex systems,

Experience in image analysis using mathematical methods,

or

Experience in stress field modelling using finite element method,

Additional information:

Remuneration:

The brutto salary will be 7000-8000 PLN/month depending on the Candidate's experience.

Eligibility criteria:

- Research experience documented by scientific publications in journals enlisted in JCR,
- Ph.D. degree in one of the above-mentioned disciplines,
- A scientific degree in both groups of disciplines mentioned above,
- Candidates have been awarded a Ph.D. degree within 7 years before joining the project. This period may be extended by the time of long-term (in excess of 90 days) evidenced sickness benefits or physiotherapy benefits on account of unfitness for work. This period may also be extended by the number of months of a child care leave granted according to the Labour Code and in the case of women, by 18 months for each child born or adopted, whichever option is more advantageous.
- The candidate in the last two years before taking up employment in the project (expected date: September 2020) was not employed under an employment contract at ICSC PAS.
- Candidates at the time of receiving remuneration, they shall not receive any other remuneration from funds allocated as direct costs under research projects funded in NCN call

Selection process

Applications should be sent in the electronic form to: ncikifp@cyf-kr.edu.pl, with the message subject "CHR – adjunct – KSN 4/2020"

Deadline for applications**: 31.07.2020 at 3:00 pm CEST.** The competition will be settled by **31.08.2020.** The candidates will be notified of the results.

The employment will be proceeded with accordance to the rules of the Labour Code for 36 months.

Additional information:

The Institute has been adapted to the needs of the disabled. The Institute does not provide accommodation. The recruitment process is conducted according to OTM-R policy.