Instytut Katalizy i Fizykochemii Powierzchni
im. Jerzego Habera
Polskiej Akademii Nauk

HR EXCELLENCE IN RESEARCH

KSN 8/2020 Kraków, 2.10.2020

Research assistant in the Cultural Heritage Research Group

- Employer: Jerzy Haber Institute of Catalysis and Surface Chemistry Polish Academy of Sciences, Krakow, Poland
- Research field:
  - Mechanical engineering > modelling of crack initiation and propagation,
  - Mechanical engineering > determination of historic material mechanical properties.
- Researcher profile: R1 or R2
- Deadline for applications: 10.11.2020, time 15.00 GMT+1
- Place: Poland, Krakow
- Type of Contract: at least 24 months
- Job Status: full time
- Working hours/week: 40
- Start of employment: 15.12.2020

Jerzy Haber Institute of Catalysis and Surface Chemistry Polish Academy of Sciences, Krakow, Poland opens a position of a Research Assistant involved in the implementation of the NAWA-Craquelure project in the Cultural Heritage Research Group of the Institute.

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. U st. 5 for the position of research assistant are encouraged to apply for the position.

The Research Assistant reporting to the head of the CHR group will work on the development of a comprehensive mechanical and numerical 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 (CP) - 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, but there is no knowledge on how those CPs developed and what is the impact of CPs on painting vulnerability to relative humidity variations.

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The Research Assistant will be responsible for:

- building a database of material properties, including fracture toughness, for historical materials used in paint layers;
- developing a comprehensive 3D mechanical model of historical paint layers, especially understanding mechanisms and processes involved in CP formation based on finite element modelling;
- determining the vulnerability of historical paint layers with developed CPs to relative humidity variations, also after conservation treatments;
- application for new projects.

Required education:

Master degree in one of the following disciplines: mechanical engineering physics, material science.

Skills/Qualifications:

1. Experience in stress/strain finite element modelling of fracture initiation and propagation and mechanical characterization of materials supported by JRC publications;
2. International internships;

Specific requirements:

- An application.
- 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 confirming acquainting with its content. The form is available on the institute website [FORM],
- A copy of master degree certificate,
- Full CV (including information on maternal leaves, voluntary work and periods of work in the industry),
- At least one opinion on the Candidate, preferentially given by an independent researcher.
- List of scientific achievements (scientific papers, patent, patent applications, grants etc.).

Languages:

Fluent in written and spoken English

Research experience:

Analysis using the finite element method,

Determination of mechanical properties of materials.

Additional information:

Remuneration:

The gross salary 5500-6200 PLN/month (roughly 1200-1400 Euro/month) depending on the Candidate's experience.

Eligibility criteria:

- Research experience documented by scientific publications in journals enlisted in JCR or patents,
- Master degree in one of the following disciplines: mechanical engineering physics, material science, PhD degree in the above disciplines will be additionally valued.

Selection process:

Applications should be sent in the electronic form to: ncikifp@cyf-kr.edu.pl with the subject title „CHR – assistant - KSN 8/2020"

Deadline for applications: 10.11.2020 at 15:00 GMT+1. The competition will be settled by 20.11.2020. The candidates will be notified of the results.

The employment will be proceeded in accordance to the rules of the Labour Code for at least 24 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