



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



HR EXCELLENCE IN RESEARCH

KSN 5/2023

Kraków, 06.03.2023

## Assistant Professor (adjunct) 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,
  - Material science > determination of historic material physicochemical and mechanical properties,
  - Physics > solid state,
  - Physics > complex systems modelling.
- Researcher profile: R3
- Deadline for applications: 05.04.2023, 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: 15.05.2023

Jerzy Haber Institute of Catalysis and Surface Chemistry Polish Academy of Sciences, Krakow, Poland opens a position of an assistant professor 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. Ust. 3 for the position of research assistant are encouraged to apply for the position.

The assistant professor reporting to the head of the Cultural Heritage Research group will work on the development of a comprehensive mechanical and numerical model of historical, aged paint layers in paintings - innovative at a global scale. The paint layer is a complex assembly of humidity-sensitive materials which have - over centuries - aged, cracked, and delaminated. Cracks join up forming 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

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how CPs have developed and what is the effect of CPs on painting vulnerability to environmental variations.

The assistant professor will be responsible for:

- developing a comprehensive 3D mechanical model of historical paint layers, using COMSOL Multiphysics or ANSYS software which will allow for the understanding of mechanisms and processes involved in CP formation.
- Physicochemical characterisation of the heritage objects as well as their mechanical parameters.

### Required education:

Doctoral degree in one of the following disciplines: mechanical engineering, physics, material science or similar.

### Skills/Qualifications:

1. Experience in data analysis, preferably supported by JRC publications (0-10 points);
2. Experience in finite element modelling, preferably supported by JRC publications (0-20 points);
3. Experience in the experimental determination of physicochemical and mechanical properties of materials, preferably supported by JRC publications (0-30 points).

The minimal number of points required for admission – 25.

### 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.) [[FORM](#)] and “Information obligations – recruitment of a perspective employee/collaborators” confirming acquainting with its content [[FORM](#)] (both documents filled and signed by the Candidate);
- a copy of PhD degree certificate,
- full CV (including information on maternal leaves, voluntary work and periods of work in the industry),
- list of scientific achievements (scientific papers, research and implementation projects, grants etc.).



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### Languages:

Fluent in written and spoken English

### Research experience:

- data analysis,
- modelling using finite element method,
- determining of physicochemical and mechanical properties of materials.

### Additional information:

#### Remuneration:

The gross salary 6200-6400 PLN/month (roughly 1200-1300 Euro/month) depending on the Candidate's experience.

#### Eligibility criteria:

- Research experience documented by scientific publications in journals enlisted in JCR or patents and carried projects,
- Doctoral degree in one of the following disciplines: mechanical engineering, physics, material science or similar.

#### Selection process:

Applications should be sent in the electronic form to: [sekretariat@ikifp.edu.pl](mailto:sekretariat@ikifp.edu.pl) with the subject title „CHR – adjunct - KSN 5/2023”

Deadline for applications: 05.04.2023 at 15:00 GMT+1.

The two-phase evaluation will take place. The group of selected candidates will be asked to participate in an individual meeting using the Teams platform.

The competition will be settled by 19.04.2023. The candidates will be notified of the results.

The employment will proceed in accordance with the rules of the Labour Code for at least 24 months.

#### Additional information:

The Institute has adapted to the needs of the disabled. The Institute does not provide accommodation. The recruitment process is conducted according to [OTM-R policy](#).

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