



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



HR EXCELLENCE IN RESEARCH



KSN 2/2021

Kraków, 04.03.2021

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:
 - Physics: modelling of complex systems.
 - Mechanical engineering: stress analysis using finite element method.
 - Mathematics/Applied computer science: image analysis.
- Researcher profile: R1 or R2.
- Deadline for applications: 09.04.2021, time 15.00 GMT+1.
- Place: Poland, Krakow.
- Type of Contract: 18 months with the possibility of extension.
- Job Status: full time.
- Working hours/week: 40.
- Start of employment: 4.05.2021.

Jerzy Haber Institute of Catalysis and Surface Chemistry Polish Academy of Sciences, Krakow, Poland opens a position of a Research Assistant 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, supervised by the group leader, will work on the development of a physical model of a painting with an extensive network of cracks within the GRIEG-Craquelure project using mechanical parameters of historical materials determined experimentally. Additionally, the assistant will carry out measurements of the crack patterns in paintings and model systems using a microscope scanner and will analyze the obtained images using mathematical tools.

In addition, as part of the IPERION HS project financed by the Horizon 2020 program, the Research Assistant will develop modules of a web tool for quantitative risk analysis of historic objects related to various agents, such as improper environmental parameters (temperature, relative humidity, light intensity, etc.) or particle deposition on architectural surfaces. The

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developed software is a web-based tool supporting decision-making processes related to the preservation of collection during exhibition and storage.

The Research Assistant will be responsible for:

- determination of mechanical properties of historical materials and development of a model of paintings with a cracked paint layer,
- development of the existing and new modules of the HERIE (herie.pl) tools for risk assessment,
- performing measurements of crack patterns using the microscope scanner and their analysis using mathematical tools.

Required education:

Master degree in one of two disciplines: mechanical engineering or physics.

Skills/Qualifications:

1. experience in computer modelling of complex systems using linear and nonlinear differential equations confirmed by publications from the JCR list,
2. experience in optimization of numerical calculations confirmed by publications from the JCR list,
3. programming skills in one of the languages: Python, C ++ or C #

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 or doctoral 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, implementations, grants, etc.).



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Languages:

Fluent in written and spoken English.

Research experience:

Experience in mathematical modelling of complex systems.

Additional information:

Remuneration:

The gross salary **5000-7000 PLN/month** (roughly **1000-1500 Euro/month**) depending on the Candidate's experience.

Eligibility criteria:

- documented achievements confirmed by publications from the JRC list,
- a master degree in one of the stated disciplines, a Ph.D. degree in the above disciplines will be additionally valued.

Selection process:

Applications should be sent in the electronic form to: sekretariat@ikifp.edu.pl with the subject title „CHR – assistant - KSN 2/2021”.

Deadline for applications: 09.04.2021 at 15:00 GMT+1. The competition will be settled by 16.04.2021. The candidates will be notified of the results.

The employment will be proceeded in accordance with the rules of the Labour Code for at least 18 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](#).