

Marie Skłodowska-Curie PostDoc Positions in Germany

“Expression of Interest” for hosting Fellows

This template should be used by institutions interested in hosting postdoctoral fellows within the Marie Skłodowska-Curie Individual Fellowship programme. Host institutions should be located in Germany.

1. Valid for the following MSCA-IF Calls¹:

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| <input type="checkbox"/> 2018 | <input checked="" type="checkbox"/> 2019 | <input checked="" type="checkbox"/> 2020 |
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2. Interested host institution:

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| TU Bergakademie Freiberg Akademiestr. 6 09599 Freiberg Name of EU liaison officer (EU-Referent/in), if applicable: Mrs. Dr. Ellen Weißmantel |
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3. Institute/Department:

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| Institute of Thermal Engineering Chair of Gas and Heat Technology Lampadius-Bau Gustav-Zeuner-Straße 7 D-09599 Freiberg Website (Hyperlink): www.gwa.tu-freiberg.de |
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4. Contact person (name and e-mail address):

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| Mr. Ralph Behrend, Tel.: +49 3731 39 4341 Mail: ralph.behrend@iwtt.tu-freiberg.de |
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5. Project idea/position (scientific requirements, topic, discipline):

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| <i>Rough outline of idea/position:</i> The chair of Gas and heat technology (GWA) is led by Prof. Hartmut Krause and focusses its research on the fields of Gas Technology, Combustion Technology, Thermoprocess Technology and Energy Technology. Within the working group Thermoprocessing Technology, the focus is on applied research, providing cutting edge solutions for high temperature processes. Since 20 years, high temperature microwave processing is a field of research for GWA and several projects on ceramic heating and glass smelting have been conducted successfully. |
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¹ MSCA Individual Fellowships are selected on the basis of annual calls for proposals. Forthcoming and open calls for proposals can be found on the [Participant Portal](#) of the European Commission under “Funding Opportunities” and “Calls/H2020”.

Within the current research activities microwave heating is of increased interest. It allows decarbonisation of high temperature processes where conventional resistance heating cannot be applied. Also, production lines can be more flexible for more individual products. A current project idea focuses on microwave heating of glass sheets. An innovative production system shall be developed for producers of semi-finished glass products where the individual modules can be employed for a variety of process parameters. Main challenges to overcome are a homogeneous temperature distribution, changing material parameters over temperature (dielectric, radiative). Most of the material parameters that cannot be quantified over the whole temperature range with one measurement system (current state of the art) or at high temperatures. An extrapolation or calculation from known parameters led to large errors.

Proposed topic for the fellow:

- development of a fast and robust measurement system for dielectric properties of glass and glass materials over a temperature range from 20°C up to 900°C and above at 2.45 GHz
- optional: increased frequency range from 915 MHz up to 5.8 GHz.

We would be happy to support and host a Marie Skłodowska-Curie fellow who is highly talented and motivated and of course interested in this research topic.

Scientific requirements (fellow):

- experience with microwave or radiofrequency-technology or electrodynamics
- practical experience with high temperature applications
- optional: experience in glass production processes
- optional: experience in numeric simulation and modelling particularly of microwave applications
- optional: experience with dielectric property measurement

Training opportunities we open up in addition to the given research field

- furnace and thermoprocess engineering
- applied thermodynamics
- advanced simulation techniques
- combustion technology and science

Please tick:

- Life Sciences
- Natural Sciences
- Engineering Sciences
- Social Sciences and Humanities

6. Deadline² for considering interests by postdoctoral applicants:

We do not have any detailed deadline. Interested postdoctoral applicants can contact us anytime. However, we ask that applicants contact us as early as possible in order to plan and support the project in the best possible way.

² Please consider that the preparation of a Marie Skłodowska-Curie proposal requires some time. Fellow and supervisor have to agree on a project and training opportunities for the fellow.