Universität Stuttgart

# Post-Doc or Ph.D. position

Online seit 17.05.2022 | 2022-05-17-783318 | Wissenschaftliche:r Mitarbeiter:in

## Beschreibung

The Institute of Mechanical Process Engineering (IMVT) at the University of Stuttgart has an opening for a Post-Doc or Ph.D. position in the area of
“Optimizing the Separation- and Energy-Efficiency of Innovative Filter Media in the Micron- and Submicron-Range by Means of Improved Modeling Approaches.”
Our institute conducts theoretical and experimental research related to the behavior and the interaction between solid, particulate and fluidic (gas/liquid) substances or material systems, as they appear in the production of high-performance, high-value materials and products, in technical applications and processing plants, and in nature.
In the area of simulation-based filter-media development, we aim to improve current modeling approaches in context of depth filtration of fine and ultrafine particles in spatially resolved (micron-sized) and unresolved (submicron-sized) virtual air filter structures. The aim is to develop improved sub-scale models as part of an overall simulation model for virtual filter media development as employed in today's filter media industry.
The sub-scale models will be derived based on spatially highly-resolved and detailed CFD-DEM simulations of small filter sections together with experimental investigations on separation efficiency and particle loading characteristics of manufactured filter elements. Upon validation and implementation of the improved sub-scale models, the overall simulation tool will be used for the virtual optimization of multi-layered air filter media.

We offer
Both positions are fully funded for 3 years. Additional funding will be made available for the remaining duration of the Ph.D. studies. Salary for this position is based on the German TV-L, salary group E13 (100%). It is expected that the candidate actively supports education and the teaching mission of the institute.
The University of Stuttgart aims to increase the number of female employees. Qualified women are therefore especially encouraged to apply. Handicapped applicants will be preferred if applicability and qualification are equivalent.

How to Apply
Applications with the usual documents (letter of motivation, CV, copies of degree diplomas, course transcripts from all previous institutions, list of publications, language test scores if

applicable, list and contact information of references) should be sent by e-mail (preferably as a single PDF file) to carsten.mehring@imvt.uni-stuttgart.de AND andreas.klenk@imvt.uni-stuttgart.de by June 10, 2022. Applications in paper form will not be returned to the applicant but destroyed if that individual has not been selected for the position. For additional information, please visit our institute website at www.imvt.uni-stuttgart.de.

## Anforderungsprofil

Your Profile
A master degree in process engineering, mechanical engineering, biotechnology, environmental engineering, or another related discipline. Good communication skills, highly motivated, with a strong background in theoretical and computational fluid mechanics. Experience with particle-laden flows, CFD-DEM and experimental measurement techniques are desired. Experience in Openfoam, ANSYS Fluent/CFX, Matlab/Simulink and LIGGGHTS is a plus. Excellent German and English skills are required.

## Anzeigendaten

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| Art der Beschäftigung | **Wissenschaftliche:r Mitarbeiter:in** |
| Zeitraum der Beschäftigung | **Vollzeit (befristet)** |
| Bewerbung an | **carsten.mehring@imvt.uni-stuttgart.de** |

## Firmenkontaktdaten

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|---|---|
| Firmenname | Universität Stuttgart |
| Standort | Böblingerstraße 72<br>70199 Stuttgart, |
| Kontaktperson | **Herr Carsten Mehring** |
| E-Mail | **carsten.mehring@imvt.uni-stuttgart.de** |
| Webseite | **https://www.imvt.uni-stuttgart.de/** |

## Kontakt

**Herr Carsten Mehring**

carsten.mehring@imvt.uni-stuttgart.de

## Einsatzort

https://www.imvt.uni-stuttgart.de/
Böblingerstraße 72
70199 Stuttgart,