

# PhD position for Process Simulation

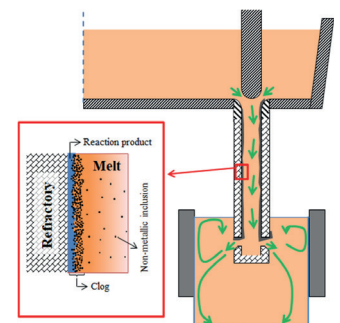
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## Company description

K1-MET is one of the leading and internationally renowned metallurgical competence centres for ferrous and nonferrous metallurgy in Austria working on research issues such as energy efficiency, circular economy, and climate neutral metal production, as well as digitalization potential of the metal-producing sector. The basis for a fruitful development of K1-MET is the well-established cooperation with our partners from industry and academia. Our main sites are in Linz and Leoben, Austria, in close proximity to the most important locations of the Austrian metal industry. Together, we are working on process solutions to advance the modernization of the European metallurgical industry, driving forward the development and application of advanced future technologies from fundamental research towards industrial implementation.

## Description of position and tasks

You will be working on the development of ground-breaking simulations of industrial processes of iron- and steelmaking and their validation. The doctoral thesis will be carried out at the Montanuniversität Leoben (MUL) on the topic of **Kinetic and thermodynamic modelling and experimental validation of SEN clogging**. You will be co-supervised by two chairs, the Chair of Simulation and Modelling of Metallurgical Processes (SMMP) and the Chair of Ferrous Metallurgy (ESM). You will learn and work on the modelling as well as the experimental simulation and validation with numerical modelling experts and experienced metallurgists. The final goal is to bridge a comprehensive numerical clogging model with thermodynamic considerations and validation on experimental scale. You will be integrated into a professional team which includes academic and industrial partners in national research projects of K1-MET and MUL. With your work you will contribute to an enhanced process understanding and the achievement of new and innovative results in the steel industry.



## Competences and experiences

We are looking for the following competences and experiences:

- Full academic qualification (Diploma / Master) of a technical or natural scientific discipline (Metallurgy, Materials Science, Chemistry, or other related fields)
- Experience in modelling and simulation, basic understanding of fluid dynamics (e.g. Ansys Fluent)
- Preliminary knowledge about computational thermodynamics (FactSage, Thermo-Calc, etc.) and high-temperature experiments on laboratory scale desirable
- Social competences, accessible personality with the ability to solve problems constructively
- Good presentation skills and autonomous time management desirable
- Proficiency in English language obligatory, proficiency in German language advantageous

Start of employment:	July 2023
Duration of employment:	limited to 4 years
Type of employment:	Full time (38.5 h/week), flexible working hours
Employer:	K1-MET GmbH, <a href="http://www.k1-met.com">www.k1-met.com</a>
Place of work:	Leoben, Styria, Austria
Compensation:	The gross salary for this PhD position with a Diploma / Master's degree is € 3.400 (14 x p.a., full time according to the collective labour agreement of mining and iron-producing industries).

Does this position sound interesting to you?

Then feel free to send your CV, a motivation letter, and references to [office@k1-met.com](mailto:office@k1-met.com), using "PhD position – thermodynamic and kinetic modelling of SEN clogging" as the subject of your email. The position is open starting right away until a suitable candidate is found. International applications are encouraged.

### Employer

K1-MET GmbH  
 Stahlstrasse 14  
 4020 Linz, Austria  
[www.k1-met.com](http://www.k1-met.com)

### Contact K1-MET

Dr. Hadi Barati  
 DI Dr. Christine Gruber  
 Area Simulation & Data Analyses  
[office@k1-met.com](mailto:office@k1-met.com)

### Contact MUL SMMP

Assoc. Prof. Dr.-Ing. Menghuai Wu  
 Chair of Simulation and Modelling of  
 Metallurgical Processes  
<https://smmp.unileoben.ac.at>

### Contact MUL ESM

Assoc. Prof. Dipl.-Ing. Dr. mont.  
 Susanne Michelic  
 Chair of Ferrous Metallurgy  
[www.metallurgy.ac.at](http://www.metallurgy.ac.at)