

PhD position for Process Simulation

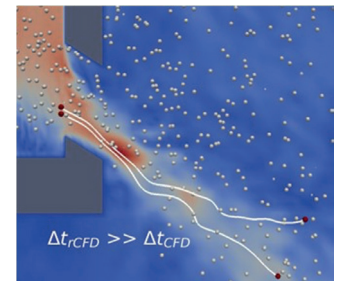
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Company description

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 the iron- and steelmaking. The PhD thesis will be supervised by the Department of Particulate Flow Modelling (PFM) at the Johannes Kepler University (JKU) of Linz. The PhD research will deal with **fast data assisted CFD simulations for metallurgical process applications**. The aim is to further develop the data-assisted simulation method recurrence CFD to investigate various metallurgical processes. Typically, the corresponding flows exhibit multiple spatial and temporal scales, which calls for an approach which can operate on them with great flexibility. Algorithmic improvements such as fractional time steps as well as applications to different metallurgical processes (tundish flows, argon-oxygen decarburization, and submerged entry nozzle flows) will be part of the project.



Your tasks will be carried out in collaboration with academic and industrial partners in national research projects of K1-MET and JKU-PFM. With your work you will contribute to an enhanced process understanding and the achievement of new and innovative results to 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 (Physics, Mathematics, Mechatronics, Engineering, or other STEM fields)
- Experience in numerical modelling and simulation as well as good understanding of fluid dynamics and fluid mechanics desired
- Experience with codes and programming languages (C, C++, Python, etc.)
- Good presentation skills and autonomous time management desired
- 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
Place of work:	Linz, Upper Austria, 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 contact us with a CV, a motivation letter and references sent by email in PDF format to office@k1-met.com. The position is open starting right away until a suitable candidate is found. International applications are encouraged.

Employer

K1-MET GmbH
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K1-MET Head office

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 4020 Linz
 Austria

Contact K1-MET

DI Dr. Christine Gruber
 Management Area Simulation
 & Data Analyses

Contact JKU PFM

PD DI Dr. Thomas Lichtenegger
 Assoc.-Prof. DI Dr. Stefan Pirker
 Department of Particulate Flow Modelling