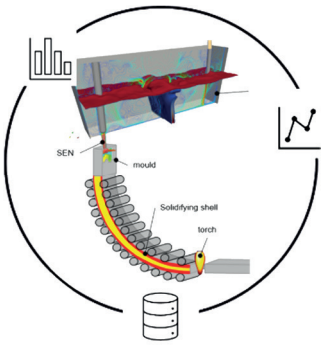
PhD position for Process Modelling and Data Analysis

(m/f/d)

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 co-operation 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 PhD thesis will be carried out at Montanuniversitaet Leoben (MUL) and supervised by the Chair of Cyber-Physical-Systems (CPS) and the Chair of Ferrous Metallurgy (ESM). The PhD topic is **"Hybrid Mold – data modelling and evaluations around the continuous casting process"**. You will learn and work on data analysis and hybrid modelling approaches for the continuous casting process in the steelmaking industry, investigating various sources of data from the industrial plant such as temperature of the mold, fluctuations of the mold level and casting powder properties. You will develop a model of the heat transfer mechanisms during the casting process, which will be used to explain and predict the occurrence of defects on the finished steel product, thus improving the performance and process control of one of the most essential process steps in ultraclean steelmaking. During your PhD thesis, you will work with experienced colleagues in the field of metallurgy, machine learning, data analytics and process technology. You will become part of an international and professional team which includes academic and industrial partners in national research projects of K1-MET and MUL. With your work, you will make an important contribution to enhance 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 scientific discipline in technical or natural sciences (metallurgy, mechanical engineering, chemical engineering, physics, informatics / data science or related fields)
- Experience or strong interest in metallurgy and process technology
- Experience or strong interest in data science, machine learning and the application of these methods to real-world problems
- Social competences and an accessible personality, the ability to solve problems constructively as part of a team
- Decent 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
Employer:	K1-MET GmbH, www.k1-met.com
Place of work:	Linz / Leoben, Austria
Compensation:	The gross salary for this PhD position with a Diploma / Master's degree is € 3,400 (14 × 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 your references to **office@k1-met.com**, using "PhD position – Hybrid Mold" as the subject of your email. The position is open starting right away until a suitable candidate is found. International applications are encouraged. K1-MET GmbH and MUL are equal opportunity employers – we encourage female researchers to apply.

Employer
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