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## Editorial

Thomas Bürgler<sup>1,2</sup> and Johannes Schenk<sup>1,3</sup>

<sup>1</sup>K1-MET GmbH, Linz, Austria

<sup>2</sup>voestalpine Stahl GmbH, Linz, Austria

<sup>3</sup>Montanuniversität Leoben, Leoben, Austria

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The research activities of K1-MET, the Austrian competence centre for excellent technologies in advanced metallurgical and environmental process development, are presented in this issue of the BHM Berg- und Hüttenmännische Monatshefte. K1-MET is one of the leading and internationally renowned metallurgical competence centres. The basis for this development of K1-MET is a fruitful cooperation between our scientific and industrial partners. K1-MET was founded as a competence centre as the successor organisation of the competence network  $K_{net}Met$  in 2008. K1-MET was at first operated as a consortium of industrial and scientific partners. In 2015 K1-MET became a company with limited liability under Austrian law (GmbH, equivalent to Ltd.) as an answer to the demanding challenges in the metallurgical sector in terms of technology and resource efficiency.

The core funding of K1-MET is provided by the Austrian COMET program of the Austrian Research Promotion Agency (FFG). COMET stands for Competence Center for Excellent Technologies and is a funding program to promote excellent cooperative research between industry and academics. The COMET program of K1-MET receives cash funding from the Federal Ministry for Climate Action, Environment, Energy, Mobility, Innovation and Technology, the Federal Ministry for Digital and Economic Affairs, the provinces of Upper Austria, Tyrol, and Styria as well as the Styrian Business Promotion Agency (SFG). In addition, cash funding and in-kind funding is provided by industrial partner companies. The scientific partners, such as research institutes and universities, provide in-kind contributions for the program. In addition to the COMET funding,

K1-MET is active in raising funds from calls by national and international research programs.

K1-MET has a bridging function in the innovation chain between academia and industrial application. The research work is organised in four research areas:

- Raw Materials and Recycling (Area 1) endeavours the best possible utilization of all resources and by-products to further establish a sustainable circular economy
- Metallurgical Processes (Area 2) unites the core topics of metallurgical process development for melting, refining, and casting of high-performance metals
- Low Carbon Energy Systems (Area 3) is dedicated to coal-lean steel production to adapt the metallurgical processes for the challenges of a low carbon future
- Simulation and Analyses (Area 4) is the enveloping area for numerical developments, data analyses, digitalisation, and the simulation of multiphase flows

The implementation of research projects in these areas has to face the challenge of achieving results with both, high scientific impact and technical innovation. This can only be accomplished by the close cooperation of K1-MET with the scientific and industrial partners in the execution of the projects. The articles within this issue of the BHM represent examples for the research activities of K1-MET and its partners.

Thomas Bürgler  
Chief Executive Officer K1-MET GmbH

Johannes Schenk  
Chief Scientific Officer K1-MET GmbH

Univ. Prof. Dipl. Ing. Dr. J. Schenk (✉)  
K1-MET GmbH,  
Stahlstraße 14,  
4020 Linz, Austria  
johannes.schenk@k1-met.com



**Thomas Bürgler**



**Johannes Schenk**