AMT Research Report

Dear Readers,

New technologies for the **automation** and **digitization** of **mining machines** and **processes**: this is what drives us, especially with respect to the harsh and demanding environments that most of you know very well. With our **interdisciplinary team**, we contribute to ensuring that deposits and raw materials that are technically and / or economically not yet exploitable today **become economically viable deposits** that can be exploited in a **safe and environmentally friendly way** in the future.

In the spirit of Mining 4.0 and with the vision of a **digitally connected autonomous mine**, the focus of our **application-oriented and industry-related research** continues to be on the **utilization of information for process, environment and machine monitoring**. This is done by means of **sensor technologies** and **modern methods of machine and process data analytics**, which provide the basis for connected and autonomous systems. You can read more about our research focus in the section „Research Focus and Projects".

There will also be changes in the **requirements profile of future mining engineers**. A holistic and modern engineering education is, of course, at the centre of an actively designed and successfully implemented digitalisation. The AMT plays a **pioneering role** in this and integrates innovative teaching and learning concepts into the training of engineers. The AMT is currently developing the **world's first „Learning Factory Mining 4.0".** Read more about this in our "AMT Highlight".

By pooling and cooperating in the fields of education, research and industry, **technological innovations** can be fostered. For this reason, a new industry-related conference, the **„International Conference on High Performance Mining"**, was introduced in December 2018, which offers a platform for active exchange and dialogue and takes place every two years alternating with the **„Smart Mining Conference"** (formerly Forum Bergbau 4.0).

We hope you enjoy reading our AMT Research Report 2019/2020.

Univ.-Prof. Dr.-Ing. Karl Nienhaus Univ.-Prof. Dr.-Ing. Elisabeth Clausen

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