1. The RockDataAcademy: a new open-access knowledge base covering the ins and outs of using sensors to scan ores

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ABSTRACT

More and more mining companies are becoming aware of the potential benefits of sensor-based ore sorting and process optimization. This is reflected by a growing number of analyzers that are available for drill hole logging, conveyor belt scanning, sorting, slurry analysis, etc. These tools all rely on a specific sensor technology that can be used to detect a material property such as color, density, mineralogy, or chemical elements. However, all sensors have restrictions on the minerals and/or elements that can be detected or inferred. This is caused by the physical mechanisms behind the technology and depends on mineral concentration and compositional heterogeneity of the ore. Since nearly every ore deposit is unique in composition and characterized by different geological features that drive heterogeneity, no one-size-fits-all sensor solution is available. This makes it difficult for mining professionals to find suitable sensing technologies that can help them solve problems and improve processes for their specfic ore types.

To bridge the gap between ore sensing research, sensor technology providers, and mining industry, an open-access knowledge base is being developed with literature and videos covering all the ins and outs of using sensors to scan ores in mining. This information platform is motivated by the vision that the introduction of sensors promotes a more responsible utilization of the Earth's mineral resources.

The RockDataAcademy platform will be completely free and accessible for everyone. It is the online library to learn more on topics such as the benefits of ore scanning and sorting, selecting suitable sensing technologies for specific ore types, investigating analyzer and sorter feasibility, and sensor data analytics and calibration. It will also list and categorise sensor equipment suppliers by scanning application and type of sensor technology. The goal is to support development and integration of ore sensing applications and contribute to a more sustainable utilization of mineral resources.