



## **Transfer of scientific drilling expertise for a wider benefit in the research school “Innovative Exploration Drilling and Data Acquisition”**

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Recently, EIT RawMaterials awarded a grant for the research school “Innovative Exploration Drilling and Data Acquisition” (I-EDDA-RS). The research school primarily aims at improving mineral exploration by scientific methods and exploits the accumulated expertise from scientific drilling projects with regard to site surveys, drilling operations and data handling and archiving. It is a prime example for the importance of scientific drilling beyond the outcome from individual scientific drilling projects.

The courses will have hands-on components at drill sites, boreholes and repositories. For this purpose, both scientific and exploration drilling projects and boreholes will be used, including a test centre that is planned to be established by the I-EDDA group. All courses will be run in 2020 and again in 2021, with a longer perspective envisioned. I-EDDA-RS education is subdivided into three major themes:

Theme 1 “*Scientific methods applied to deep mineral exploration*” will provide education in how geoscientific methods can be utilised to discover new, deep mineral deposits, how these methods can be applied to better and more cost effectively characterise existing and new targets and thus, provide a solid basis for exploration and exploitation engineering. Topics are “Seismic methods”, “Electromagnetic methods” and “Geochemical methods”. To a large degree, these correspond to the site investigations of a hard rock continental scientific drilling project.

Theme 2 “*Exploration engineering*” will address the different engineering aspects that occur during the exploration of the subsurface, including the design and planning of in-situ studies (exploration drilling), a comprehensive treatment of exploration drilling technologies and how to best utilise the data, samples and boreholes that are created during an exploration (or research) campaign to characterise the physical and mechanical properties of the subsurface for engineering purposes. Topics are “Exploration design and drill site engineering”, “Deep exploration drilling technologies” and “Physical characterisation of the subsurface”.

Theme 3 “*The life cycle of exploration data*” is about improving and consolidating the knowledge base. Data and samples are the essential and most valuable products of any exploration (and scientific) campaign, but beyond direct and internal use often neglected. Key issues are the acquisition of the operational-technical and scientific data that originate from exploration drilling and best practices for taking care of samples and data by better survey design, documentation and subsequent preservation and re-use and/or release. Topics are “Operational data acquisition at the drill site”, “Core characterisation and geoscientific data” and “Novel methods for the handling of exploration data”.

The above themes will be complemented by the topic “Entrepreneurship”, which will provide the tools that are necessary to become an entrepreneurial scientist who will work with novel methods in a future-oriented exploration market.