



SLIM project has received funding from the European Union's Horizon 2020 research and innovation programme 2014-2018 under grant agreement No 730294.

Press release

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Social innovation to minimize impact in mining areas

The European project SLIM - "Sustainable Low Impact Mining solution for exploitation of small mineral deposits based on advanced rock blasting and environmental technologies" lead by Technical University of Madrid is one of the most innovative in Raw Materials area

The European project SLIM "*Sustainable Low Impact Mining solution for the exploitation of small mineral deposits based on advanced rock blasting and environmental technologies*", funded by the European Commission within the Horizon2020 Programme has recently been launched. This initiative involves thirteen European partners from Austria, Denmark, Sweden, France and Spain and will include the validation of technologies developed in mines located in Toledo and Granada (Spain) and in Eisenerz (Austria). SLIM will be developed over the next four years and has a global budget of 6,979,200 euros.

SLIM recently held its launching meeting at the School of Mines and Energy of the Technical University of Madrid (Universidad Politécnica de Madrid, UPM). Representatives of the thirteen partner organizations Technical University of Madrid, 3GSM, Benito Arno e Hijos, Bureau de Recherches Géologiques et Minières, VA Erzberg GmbH, Gate2Growth, Luleå Tekniska Universitet, Maxam Corp. International, Minpol, Montan Universität Leoben, Minera de Orgiva, Technische Universitaet Graz and ZABALA Innovation Consulting participated in the meeting.

The objective of the project is to develop a cost-effective and sustainable selective low impact mining solution based on non-linear rock mass fragmentation by blasting models, airborne particulate matter, vibration affections and nitrate leaching mitigation actions for exploitation of small mineral deposits (including those with chemically complex ore-forming phases) through a new generation of explosives and an advanced automatic blast design software based on improved rock mass characterisation and fragmentation models for optimum fragmentation and minimum rock damage and far-field vibrations.

The project's structure and scope are built upon a full user driven strategy for the development of a new sustainable selective low-impact technological solution for mining of small mineral deposits (including those with chemically complex ore-forming phases) on the land to increase the supply of raw materials from European sources.

To achieve that, the different actions of SLIM include a comprehensive characterisation of explosive technologies and their behavior on small mineral deposits. Simultaneously, it will undertake an exhaustive analysis on rock fragmentation in order to develop the technology to measure muckpile properties and define a new dynamic modelling system. Interaction rock/explosive pre and post-blast will be taken into account.



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Once the technical development is underway, it will plan and execute the validation of the SLIM solution using an upstream / downstream approach: the actual technical solution will be deployed on-site on some mining sites (upstream) and validated on the corresponding processing plants (downstream) so as to ensure both its superior technical performance and its integration capacity within the mining and processing value chains.

Technological and Social advances

As complimentary sides to the purely technical aspects of SLIM, the environmental, social and economic dimensions of the project, addressing topics of worker safety, environmental impact and all planned exploitation and business model-related activities will be developed.

In addition, the project includes a broad package of dissemination, communication and social innovation actions that will consider dialogue, as well as information and participation processes with the communities involved and key social actors. With this aim, SLIM project will launch several educational and information campaigns.

In order to do that, it is planned to choose five European cities that coexist with mining operations where surveys and interviews will be carried out to elaborate a diagnosis of social benefits derived from extractive activity. It will also report on actions taken to improve the sector's sustainability in meetings with European institutions and countries participating in the project, such as Sweden, Austria and Spain.

In the same way local and civil associations will be taken into account for the development of actions and it will be promoted events such as workshops and assistance to international forums such as Business and Human Rights promoted by the United Nations.

UPM Partner

The partner in the SLIM project is the [Explosives & Blasting Lab](#) which comprises five permanent faculty members and a variable number of Ph.D., graduate and undergraduate students. The group is world reputed in rock fragmentation research and publishes in the main scientific journals of the area and is present in the major world conferences and forums on mining. This Lab is part of the Department of Mining Engineering and Earth Sciences of the School of Mines and Energy. This Department has about 90 employees with a large experience in mining and mineral processing, explosives and blasting analysis, and modelling.

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