

عنوان مقاله:

Nanotechnology's Application in Mining: Increasing Productivity, Mitigating Environmental Effects and Recycling Mining Wastes

محل انتشار:

دومین کنفرانس ملی و اولین کنفرانس بین المللی چالش های محیط زیست: صنعت و معدن سبز (سال: 1403)

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خلاصه مقاله:

The Mining and Mineral Processing Industry of Iran is currently facing serious environmental and economic challenges. Without the adoption of innovative homegrown technologies and the realization of sustainable development in the near future, a notable decline in profit margins within the mining sector is almost inevitable. This article not only introduces the potential applications of nanostructures in the mining and mineral processing industry but also provides a comprehensive review of the latest nanotechnology applications aimed at mitigating the environmental impact of this sector. One particularly encouraging prospect highlighted in this review is the extraction of nanostructures from diverse mining and mineral processing wastes through the use of biotechnology. Both nanotechnology and biotechnology are pivotal tools in addressing numerous challenges within Iran's mining and mineral processing industry. Through the convergence and meticulous engineering of these two technologies, it becomes possible to transform many of the existing threats into opportunities. By outlining the capabilities of these technologies in addressing environmental issues within the Mining and Mineral Processing sector, this article tries to provide a holistic perspective on their potential solutions.

کلمات کلیدی:

Nanotechnology, Mining and Mineral Processing Industry, Sustainable Mining, Biotechnology, Responsible Mining

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