

Innovative mine backfill materials and structures

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Message from the Guest Editor(s):

Dear Colleagues,

The exploitation of mineral resources generates a large amount of solid wastes, such as waste rocks, process tailings, and coal gangues. However, the mined-out area and ground storage has caused surface subsidence and huge environmental problems. Generally, these solid wastes could be used as a recycle/construction material in preparing the fluid mine backfill slurry to effectively refill the mined-out area. Cemented tailings backfill or cemented paste backfill in metal mines and cemented coal gangue/fly ash backfill in coal mines were usually mentioned in underground mining area.

Filling mining method is a vital means to control ground pressure and ensure safe production. Durability of the backfill materials in diverse underground conditions is getting more and more attentions by mine operators since it can help attain the long-lasting aims of sustainable mining/backfilling operations. Advances in mine backfill materials and technologies address it is possible to investigate some state-of-the-art materials, methods, structures to reach this objective.

This Special Issue (SI) is aimed at exploring the durability of innovative backfill materials and structures as a key role in the modern mining industry in the world. This SI not only carries better understanding of the unique thoughts and new improvements in the durability of mine backfill materials and also establishes an opportunity to confer and debate the upcoming developments of this topic.

The expected outcome is to escalate the awareness of stakeholders and the public on the development of innovative backfill materials and techniques that can be implemented to unmanned and smart mining to lessen the undesirable impact of mining operations on the environment and communities.

Topics of interest for publication include but are not limited to:

- Characteristics of mine tailings based backfill structures
- Cements, mineral additives, and chemical admixtures to improve mine backfill performance
- Mine backfill reticulation systems: pumping and piping
- Laboratory and field testing on static/dynamic behavior of mine backfill materials
- Strength and stability of innovative mine backfill materials
- Numerical modelling of mine backfilling structures
- Mechanisms involved in mine backfill-rock mass behavior in underground stoping mines

**Deadline for manuscript
submissions:**

30 June 2023