Special Issue

Tunnel Construction and Underground Engineering

Message from the Guest Editors

Recent years have seen significant advancements in tunnel construction and underground engineering, driven by technological innovations such as tunnel-boring machines (TBMs), advanced ground support systems, real-time monitoring techniques, and digital twin modeling. These developments have substantially improved safety, efficiency, and environmental sustainability in tunnel and underground projects. Notable progress in this field includes the establishment of smart sensing technologies for structural health monitoring, innovative excavation methods, and advanced geotechnical risk assessment techniques. Research in this field is expected to further integrate automation, robotics, artificial intelligence, and sustainable practices into tunnel construction and engineering. Future research areas include the development of autonomous tunneling systems, application of artificial intelligence in predictive maintenance, enhanced resilience against geotechnical hazards, and sustainable utilization of underground spaces. We welcome original research papers, comprehensive reviews, and case studies addressing these issues.

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As the world of science becomes ever more specialized, researchers may lose themselves in the deep forest of the ever increasing number of subfields being created. This open access journal *Applied Sciences* has been started to link these subfields, so researchers can cut through the forest and see the surrounding, or quite distant fields and subfields to help develop his/her own research even further with the aid of this multi-dimensional network.

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