



## Nuclear Waste Management and Sustainability

Guest Editors:

**Prof. Dr. Michael I. Ojovan**

Department of Materials,  
Imperial College London, South  
Kensington Campus, Exhibition  
Road, London SW7 2AZ, UK

**Prof. Dr. Vladislav A. Petrov**

Institute of Geology of Ore  
Deposits, Petrography,  
Mineralogy, and Geochemistry,  
Russian Academy of Sciences,  
Moscow, Russia

**Prof. Dr. Sergey V. Yudintsev**

Institute of Geology of Ore  
Deposits, Petrography,  
Mineralogy and Geochemistry of  
Russian Academy of Sciences  
(IGEM RAS), Moscow, Russian  
Federation

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### Message from the Guest Editors

The effective management of nuclear waste is crucial to ensure the safe sustainable usage of nuclear energy in electricity generation, and numerous applications in medicine, industry, agriculture, and scientific research. Nuclear waste generated in these technologies must be treated and conditioned for safe handling, transportation, storage, and ultimate disposal. Nuclear waste should be disposed of aiming for the permanent protection of dangerous radioactive materials from humans and the biosphere. Both processing and disposal activities of the waste encompass the utilisation of advanced technologies and materials aiming to ensure the reliability of the waste's long-term isolation. Cements, geopolymers, glasses, glass composite materials, ceramics, and metals are the materials analysed for expected performance in the envisaged disposal environment. Natural analogue systems and materials proven for their long-term stability and durability are investigated to ensure confidence in the multi-scale approaches currently used to predict the behaviour of waste disposal systems on geological timescales.





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## Editor-in-Chief

### **Prof. Dr. Marc A. Rosen**

Faculty of Engineering and  
Applied Science, University of  
Ontario Institute of Technology,  
Oshawa, ON L1G 0C5, Canada

## Message from the Editor-in-Chief

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*Sustainability* Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland

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