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Advances in Zr-Based Alloys

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Message from the Guest Editors

Dear Colleagues,

Due to their outstanding anti-neutron irradiation and superior corrosion resistance properties, zirconium (Zr) and its alloys have important structural and/or functional applications in the nuclear, chemical, and biomedical industries. Zr alloys are a very suitable candidate of nuclear power materials for the fourth-generation nuclear reactors. Zr-based alloys have better corrosion resistance and their mechanical and processing properties are also suitable for manufacturing vessels and heat exchangers, etc. In the chemical industry, Zr-based alloys are increasingly used in highly corrosive devices. Research on the design and preparation, computer simulation, composition and property optimization, and new applications is very welcome in response to the need for advanced Zr-based alloys in terms of high strength and toughness, irradiation resistance, and corrosion resistance.

Keywords:

microstructure; corrosion resistance; irradiation resistance; strengthening and toughening; mechanical properties; simulation

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Special Issue



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Message from the Editor-in-Chief

Welcome to *Crystals*, the journal dedicated to the fascinating world of crystallographic research! Crystals are more than mere decorative elements; they hold the key to understanding the fundamental structure of matter. Our mission is to explore the crucial significance of this research across various fields. From medicine to technology, chemistry to geology, crystals play a vital role. Their structure provides insights into new advanced materials, innovative drugs, and groundbreaking technologies. Through *Crystals*, we delve into the microscopic world to discover solutions that will shape the future. Join us on a journey through the *Crystals*, where science merges with beauty and innovation.

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