Special Issue

Grain Boundary Segregation and Complexion Formation

Message from the Guest Editors

Improving material performances through grain boundary engineering has become a promising approach in designing materials for structural and energy applications. During the past few decades, this field has experienced rapid advancements thanks to the development of computer simulation and characterization techniques. Similar to bulk phase transformations, grain boundaries can undergo transitions, where their structure and composition change abruptly as the temperature or other thermodynamic parameters vary, called complexion transitions. Despite the importance of segregation behavior and complexion transitions, our understanding of these processes is still limited. For example, what is the segregation tendency across the full grain boundary space, and how do we characterize grain boundary segregation in detail using advanced characterization techniques? Developing complexion transition diagrams is also challenging. The present Special Issue on “Grain Boundary Segregation and Complexion Formation” may become a status report summarizing the progress achieved in the past few years.

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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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