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Studies on Long-Term Aging of Steel

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Message from the Guest Editor

This is the Special Issue about “Studies on Long-Term Aging of Steel”. Most steels are attractive for mechanical structures in chemical and energy industry components due to their good corrosion resistance, weldability, and mechanical properties at high temperatures. However, these mechanical facilities have been used in severe working conditions such as high temperature, high pressure, and cyclic loading. Structural components designed for severe high temperature and pressure environments at power and chemical plant facilities deteriorate during their operation due to microstructural variations, such as phase transformation, coarsening of secondary phases, generation of intermetallic phases, the recovery of dislocations, and microcrack initiation and propagation. These microstructural variations have led to growing safety and integrity concerns. Additionally, desirable or undesirable unforeseen states may occur during service, which may influence the material state or behavior. Therefore, it is indispensable to understand the mechanism of long-term aging and the microstructural variations of each steel.



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Special Issue



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Message from the Editor-in-Chief

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