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Recent Trends in Advanced High-Strength Steels

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Advanced high-strength steels play an important role in many industries and engineering applications because of the excellent combination of mechanical properties important for design, e.g., strength, fatigue, fracture, wear, and manufacturability. In many challenging applications, structural components can be subjected to severe service conditions and, therefore, high-strength steels are often the only choice in these applications. Therefore, understanding the relationships between the mechanical properties and the chemical composition, microstructural features, and manufacturing methods is pivotal to developing safe and durable structures.

The goal of this book is to foster a dissemination of the latest research outcomes in the field of advanced high-strength steels from various perspectives. In this volume, a total of thirteen papers, addressing a number of important research problems and developments, have been collected, namely the relationship between microstructure and mechanical properties, the effect of heat treatment variables on the mechanical behaviour, fatigue, and fracture resistances under different loading conditions as well as the weldability, just to mention a few. These articles represent a significant contribution to the research field.

