Special Issue

Thin Wall Iron Castings

Message from the Guest Editor

The excellent property combinations of thin-wall ductile iron castings have opened new possibilities for ductile iron to replace steel and aluminum castings in many engineering applications, with considerable cost benefits. High-performance thin-walled ductile and gray iron castings are widely used for exhaust manifolds, rocker arms, pump bodies, and so forth. Thin wall iron castings are therefore considered as a potential material for lightweight components with good mechanical and utility properties at relatively low cost. The most important challenges for thin wall iron castings, which solidify at high cooling rates, are structure and properties stability, tendency toward carbides, and defect formations and high dimensional tolerances. The Special Issue “Thin Wall Iron Castings” aims to collect articles connected with shaping the structure and properties of thin-walled iron castings. It focuses, in particular, on the nucleation and growth processes during casting solidification (including numerical modeling) and the modification, inoculation, science, and engineering of high-quality Si–Mo, ADI, IDI, etc. thin-walled ductile iron castings.

Guest Editor

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Message from the Editorial Board

Metallic materials play a vital role in the economic life of modern societies; contributions are sought on fresh developments that enhance our understanding of the fundamental aspects related to the relationships between processing, properties and microstructure – disciplines in the metallurgical field ranging from processing, mechanical behavior, phase transitions and microstructural evolution, nanostructures, as well as unique metallic properties – inspire general and scholarly interest among the scientific community.

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