Aalto University
School of Engineering

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Controlling cast iron properties at elevated temperatures

Title of the dissertation	On thermal and mechanical behavior of cast irons at elevated temperatures
Contents of the dissertation	Casting is a production process that lends itself superbly to creation of complex shapes in many scales. To get every sliver of performance from a casting, one needs to combine the knowledge of shaping methods to a deep understanding of material properties and behavior. Cast irons are widely used in thermally loaded applications, where both mechanical and physical properties are required In the work, thermal and mechanical properties of select cast iron types are explored at elevated temperatures. From the experimental work results, spheroidal graphite cast iron properties can be optimized or otherwise estimated. The mechanical property experiments show that strain aging related phenomena are evident in all structures. As the phenomena can induce multiple negative effects, the topic should be considered in analysis of components that are used in thermally loaded regimes.
Field of the dissertation	Mechanical engineering, foundry technology
Doctoral candidate	Kalle Jalava, M.Sc. (Tech.)
Time of the defence	6th November 2020 12 pm.
Place of the defence	The public defense will be organized via remote technology: https://aalto.zoom.us/j/62725188841
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