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TMS 2017
146th Annual Meeting & Exhibition



February 26 – March 2, 2017
San Diego, California, USA

DEFECTS AND PROPERTIES OF CAST METALS

This is the 2nd International Symposium on Defects and Properties in Cast Metals. The first was held at the TMS 2012 Annual Meeting & Exhibition in Orlando, Florida.

Defects generated during the casting of liquid metals, whether during primary metal processing or shape casting, dramatically affect the subsequent mechanical and physical properties of the final product. These defects arise from a range of fundamental mechanisms such as surface oxidation, entrainment and incorporation of exogenous materials from the containment vessels, dissolved gasses, solidification shrinkage, unwanted micro-structural phases with detrimental morphologies and the development of stresses in the solidifying metal. In many instances, the generation of the defects arises from a combination of many physical processes. This symposium is seeking contributions from all alloys systems, ferrous and non-ferrous and primary, secondary, or shape casting markets in order to bring together researchers in these fields who might not usually collaborate and stimulate interdisciplinary discussion.

Topics include: liquid metal refining, inclusions and metal cleanliness; re-oxidation; slag / dross entrainment and fluid flow; surface defects shrinkage, gas, and porosity problems; segregation (a-, v-, freckles, inverse, centreline, etc.); hot tearing and other cracks; residual stresses, distortion, and shape problems; microstructural, precipitate- and grain defects; in-service properties, such as strength, ductility, toughness, fatigue, and wear; advanced characterization methods for defect detection, both online sampling methods and ex situ; modelling of phenomena related to defect formation; defects in casting processes such as ingot casting, DC casting, foundry/shape casting, die casting, investment casting, sand-casting, and continuous casting of steel, nonferrous metals, superalloys, and other materials

ORGANIZERS

Mark Jolly, Cranfield University, Great Britain
Charles A. Monroe, University of Alabama, USA
Brian G. Thomas, Colorado School of Mines, USA
Peter D. Lee, University of Manchester, United Kingdom

PROCEEDINGS PLANS

A stand-alone proceedings volume is planned for this symposium. Manuscripts for accepted abstracts are due September 1.

SYMPOSIUM SPONSOR

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