Special Issue

The Use of Ultrasonic Technology in the Treatment of Light Alloys

Message from the Guest Editor

During recent years, we have been confronted with new developments in the casting and manufacturing light alloys, namely, due to the demand for new degassing and refinement techniques of liquid alloys. Acoustic energy is a valuable alternative to the current melt treatment techniques used to increase the mechanical properties and soundness of Al- and Mg-based components. During the application of high intensity ultrasonic waves to liquid metal, the alternate pressures may produce cavitation under certain conditions. In addition to high degassing efficiency caused by the development of cavitation, the cavitation phenomenon also directly influences the solidification mechanisms.For this Special Issue, we wish to encouraged the submission of publications covering significant research developments by either ultrasonic melt processing of light alloys or the integration of ultrasonic equipment in the casting processes. It is expected that through such activities, any gaps that might exist between the conventional processing of light alloys and the ultrasonic melt processing technique will be effectively reduced or eliminated.

Guest Editor

Dr. Hélder Puga
CMEMS-UMinho, Department of Mechanical Engineering, University of Minho, Campus de Azurém, 4800-058 Guimarães, Portugal

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Metals
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
metals@mdpi.com

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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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