

A short review on grain refinement techniques in semisolid metal processing

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ABSTRACT

Since 40 years ago, several methods and techniques in semisolid metal processing (SSMP) for forming globular microstructures have been found. SSMP is a relatively new technology that occurs between the liquidus and solidus temperatures. One of the common techniques used to improve microstructure formation in the aluminium processing industry is grain refinement. The purpose of grain refinement is to refine the size of the grain structure and enhance the mechanical properties. Grain refinement is also utilised in SSMP to improve the formation of globular microstructures. This article intends to discuss various approaches employed in the laboratory or in the industry in recent years to produce globular microstructure feedstock for SSMP, particularly with grain refinement technique.

KEYWORDS

Globular microstructure; Grain refinement; Semisolid metal processing

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