

8th International Conference and Exhibition on

MATERIALS SCIENCE AND ENGINEERING

May 29-31, 2017 Osaka, Japan

Casting characteristics of A356 aluminum alloy on Sn addition

Seoyeong Kim and Sugun Lim

Gyeongsang National University, Republic of Korea

Global fuel and emissions regulations are being tightened in the transport equipment industry to address global environmental and energy depletion challenges. As a countermeasure against this problem, the application of automobile parts using lightweight materials such as aluminum alloys for lightening automobiles is increasing.

Most of the aluminum alloy components are using in the automotive industry and it is manufactured by casting processes. Therefore, Al-Si based alloys excellent in casting are widely used.

The A356 alloy, which is a typical Al-Si alloy, is superior to aluminum alloys for casting, which have different flowability and filling properties, has little cracking during casting, has a low coefficient of thermal expansion, and is excellent in abrasion resistance. So the usage is increasing every year.

In addition, various studies such as process control for improving casting such as heat treatment, prevention of cracking of casting and improvement of flowability, control of cooling rate, and mechanical property strengthening by grain refinement are underway.

However, as in the study of general aluminum, the study on the relationship between the inherent physical properties of the material and the composition of the alloy has not been sufficiently studied compared to the industrial use of the A356 alloy.

In this study, the effect of Sn addition on the main composition of the alloy was investigated by adding Sn to improve the casting of the cast A356 alloy. For this purpose, casting and microstructure evaluation of A356 alloy according to the amount of Sn added was carried out.

Biography

Understanding the effects of microstructure, morphology and composition on the properties of light materials Utilizing these knowledge to design improvement including Al- and Mg- base alloys, Development of high performance light materials via microstructure control

suglim@gnu.ac.kr

Notes: