

## **Effect of different thickness on the microstructure and morphology of nickel aluminium bronze alloy castings**

### **Abstract**

The purpose of this study is to develop the customized connecting rod based on NAB alloy. Later, the microstructure and morphology at different section of connecting rod mainly at large, medium and small were compared to cooling rate. By preparing NAB's alloy composition (based on ASTM B148 UNS C95800), the type and amount of degassing agent used, the microstructure behavior of NAB such as the effect of cooling rate to the grain size, DAS and SDAS of NAB alloy was also investigated. The experiment included optical microscope equipment for microstructure and SEM/ EDS observation to determine the grain size and distribution which may relate to its cooling rate. composition during melting stages as the variable parameters, investigation of its effect on microstructure was approached. Specimen was selected, cut, prepared and investigate by optical and scanning electron microscope. Based on the results, the alloy morphology is a dendritic structure. The fracture surface also reveals inter-granular fracture between the dendritic structure and its grain boundaries.