
Seminar

Engineering alloy development for high temperature applications

Divya Vadegadde Duggappa

University of Cambridge, UK

Nickel based superalloys find applications in turbines of jet engines. In order to increase the efficiency of jet engines and to reduce the unwanted gas emissions, superalloy operating temperatures must be enhanced. This could be done through altering the composition of superalloys by adding new alloying elements. When new alloying elements are added, diffusion study becomes an important parameter as most of the material properties at high temperatures are controlled by diffusion. On the other hand, extensive research is also going on to reduce the cost of production of different components for jet engine applications. Advanced manufacturing techniques such as 3D printing are being developed so that complex geometry components can be built with limited material loss. First part of this talk will be focused on the effect of addition of Pt and refractory elements to nickel and its alloys. In the second part additive manufacturing of nickel based superalloys are discussed.

Thursday, Dec 17th 2015

4:00 PM (Tea/Coffee at 3:45 PM)

Seminar Hall, TCIS