

Advanced Steels for the Automotive Industry and Other Sectors

Overview

The development of new advanced high strength steels for the automotive and other sectors has gained significant momentum in the past few years. It is of great interest to Indian automotive and steel companies as the challenges in the transport sector of light weight for reduced fuel consumption and enhanced performance, such as crash behaviour and durability are increasing. Similarly, in the defence and other sectors there is a drive for improved performance but with minimal or zero cost increases.

This course will explore the underlying fundamental issues related to the link between microstructure and performance and how the evolution of the microstructure can be controlled in these advanced steels. Course participants will develop a deeper understanding of the interplay between processing, properties and performance. It will start with a detailed understanding of steel processing from melt to final product with a particular emphasis on sheet steels for the automotive sector. This will link the fundamentals of recrystallization, grain growth, transformation and precipitation to the final microstructure. The next objective will be to link the microstructure to the formability of the steel and the final mechanical properties. The development and application of advanced modelling and characterisation tools will also be discussed.

Dates for the Course	1st June, 2016 to 15th June, 2016
Host Institute	IIT Madras
No. of Credits	2
Maximum No. of Participants	100
You Should Attend If...	<ul style="list-style-type: none">▪ You are a metallurgical/ materials / mechanical / production engineer or research scientist in automotive or other industry interested in understanding the principles of advanced high strength steels development▪ You are a student or faculty from an academic institution interested in understanding microstructure-mechanical properties correlations in advanced high strength steels and exposure to state of the art in the research domain of advanced high strength steels development and characterisation.
Course Registration Fees	<p>The participation fees for taking the course is as follows:</p> <p>Student Participants: Rs.2000 Faculty Participants: Rs. 6000 Government Research Organization Participants: Rs.10000 Industry Participants: Rs.20000</p> <p>The above fee is towards participation in the course, the course material, computer use for tutorials and assignments, and laboratory equipment usage charges. The participants may be provided with hostel accommodation, depending on the availability, on payment basis.</p>

Course Faculty



Prof. Peter. D. Hodgson is in the faculty of the Deakin University. His research interests include thermomechanical processing of steels, microstructure modelling and new alloy and process developments. He has over 700 research publications related to the physical metallurgy and modelling of steels.



Prof. B.S. Murty is in the Department of Metallurgical and Materials Engineering, IIT Madras. His research interests include physical metallurgy and phase transformations, structure-property correlations, composites and nano materials and non-equilibrium processing.



Dr. V. Subramanya Sarma is an Associate Professor at Indian Institute of Technology, Madras. His research interests are: Materials processing, development, characterisation and microstructure-mechanical properties correlations in engineering metals and alloys

Course Coordinators

Name: Prof. B.S. Murty / Dr. V. S. Sarma
Phone: 044 2257 4751 / 044 2257 4774
E-mail: murty@iitm.ac.in / vsarma@iitm.ac.in
