



**The Indian Institute of Metals Short Professional Educational Courses(Online) on
“High Temperature Materials and Processing in Power and Aero Gas Turbine
Engines”**

(Course Number IIM-25-106)

Online Mode 12th, 13th & 14th February 2025, 09:30 – 13:30 each day

Background: High temperature materials are normally used in harsh environment in power plants and in aero engines. In such demanding industrial environment, high temperature alloys based on titanium alloys, nickel base superalloys and steels are normally used. In addition, thermal barrier coatings such as Platinum Aluminate followed by intermediate layers are very important for protecting the nickel base superalloys from deteriorating fast, while in service. The material processing, its properties, microstructure and testing are very critical for using these materials successfully. The course is designed to introduce these advanced materials and their processing, properties and testing, used for high temperatures that can resist creep, oxidation and thermal fatigue. The course addresses all the above aspects.

Speakers Profile: The faculty of the course consists of the following galaxy of experienced professionals

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| 1. Dr Amit Bhattacharjee | Retd. Scientist 'H', DMRL Hyderabad (Course Convener) |
| 2. Dr Dipak Kr Das | Director, DIE- COE, IIT, Kharagpur |
| 3. Dr Kulvir Singh | Retd. GM, BHEL, Hyderabad |
| 4. Prof Sujoy K Kar | Metallurgy & Materials Engg., IIT, Kharagpur |
| 5. Dr DVV Satyanarayana | Retd. Scientist 'G', DMRL, Hyderabad |
| 6. Dr I Balasundar | Scientist 'G', DMRL, Hyderabad |
| 7. Shri Dibyendu Chatterjee | Scientist 'F', DMRL, Hyderabad |
| 8. Dr Venkat | Scientist 'F', DMRL, Hyderabad |
| 9. Dr Kalyan S Kamal | Scientist 'F', DMRL, Hyderabad |
| 10. Dr M Phani Surya Kiran | Scientist 'F', DMRL, Hyderabad |
| 11. Dr Rajdeep Sarkar | Scientist 'F', DMRL, Hyderabad |
| 12. Dr Vajinder Singh | Scientist 'E', DMRL, Hyderabad |

The Course Content would be covered in Classroom Lectures accessible through Virtual on-line route from 12th to 14th February 2025.

Who should attend: The course is useful for practising industrial professionals dealing with power plants, research professionals, academic professionals, students, materials professionals from R&D laboratories, Government research institutions, etc. Suppliers of materials and power plant equipment manufacturers and R&D centres in public and private sectors may benefit from this course.

Course Content:

Day-1	Day-2
Introduction to power turbine/engine materials Dr Kulvir Singh	Introduction and processing of ceramics for investment casting of nickel base superalloys Dr Venkat
Introduction to Titanium alloys and near alpha high temperature titanium alloys processing and properties for the compressor section of power turbine/ engine Dr Amit Bhattacharjee	Introduction and processing of wrought Ni base super alloys for the power turbine/ engine Dr I Balasundar
Introduction to Gamma Titanium aluminides (a) wrought and (b) investment cast processing and properties for turbine section Prof Sujoy K Kar	High temperature coatings for Nickel base super alloy components Dr Dipak Kumar Das
Investment cast nickel base superalloys processing for power/ gas turbine engines Shri Dibyendu Chatterjee	Non-destructive evaluation of Titanium alloys and Nickel base superalloy components for power turbine/ engine Dr M Phani Surya Kiran

Day-3

Mechanical testing of titanium and nickel base superalloys for power turbine/ engine applications

Dr DVV Satyanarayana

Chemical analysis techniques for titanium and nickel base superalloys

Dr Kalyan S Kamal

Characterization of high temperature titanium and nickel base alloys for high temperature applications using electron microscopy

Dr Rajdeep Sarkar/ Dr Vajinder Singh

Evaluation and Conclusion

Dr Amit Bhattacharjee

Registration Fees and Payment Methods

Participant type	Only Theory Course
IIM Members	5000 + 900* = 5900
IIM Non Member	7500 + 1350* = 8850
Student Member	500 + 90* = 590
Student Non-member	750 + 135* = 885
* (18% GST)	

- Participants may join for the 3 days course module which shall be conducted virtually.
- Advance payment of Registration fees is mandatory.
- Participation fee is non-refundable; however, change in nomination is possible.
- Students may furnish suitable proof of they being students while filling in the online form.
- 10% discount shall be offered if more than 5 participants are nominated by any Organisation.

Participants are requested to register via
<https://shorturl.at/slBrx> [For Individuals],
<https://shorturl.at/QFDEz> [For Organizations]
 and pay online as per the details given below.

The online transaction receipt, mentioning the course number IIM-25-106 may be uploaded by using the link provided in google form. Alternately, a demand draft in favour of "The Indian Institute of Metals" payable at Salt Lake, Kolkata can be sent to The Indian Institute of Metals, Metal House, Plot 13/4, Block AQ, Salt Lake, Sec V, Kolkata : 700 091.

Contact Persons :

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Bank Details

A/c name:
 The Indian Institute of Metals
 Bank: State Bank of India,
 SME Branch, Salt Lake,
 Branch Code: 04289,
 IFSC Code: SBIN0004289
 Current A/c No.: 54015600024
 GST: 19AAATT3359D1ZF
 PAN: AAATT3359D

