This module aims at helping participants gain an in-depth understanding of the solidification and casting process. A primary objective is to improve the competency and the competitiveness of personnel in Singapore companies having in-house metal casting facilities as an integrated process in their manufacturing line or companies specialising in supplying metal casting as a commercial service especially for sand casting, pressurized casting and investment casting. A second objective is to equip industry personnel the tools to boost Singapore’s competitiveness with state-of-the-art precision metal casting processes, such as liquid forging, and the application of simulations in metal casting. The programme scope covers metal casting processing, including the different casting methods; advanced casting methods such as liquid forging; precision casting of difficult-to-cast materials such as Ni- and Ti-based metals; design in casting; defect control in different casting methods to achieve defect-free components; and simulation in precision metal casting.

Why This Course

• Essential knowledge in various casting techniques and defect controls for ferrous and non-ferrous materials
• New technology advancement and business trends for good quality metallic cast products
• Highly practical and intensive course taught by trainers in the field with industrial experience
• Case studies highlighting industrial applications

Who Should Attend

This course is designed for general managers, R&D managers, senior engineers, team leaders, research fellows and engineers who are working in foundry and casting manufacturing, suppliers and purchasers, casting designers, technical sales representatives, and anyone who seek to get an overview of the latest techniques in precision metal casting processing with a special focus on defect control and light alloys.

When & Where

Please visit our website at KTO.SIMTech.a-star.edu.sg for the updated course schedule.

Training Venue:
Singapore Institute of Manufacturing Technology
2 Fusionopolis Way, Innovis, Level 8, Singapore 138634
What You Will Learn

**Topic 1: Metal Casting and Solidification Principles**
- Solidification of materials
- Different casting methods
- Principles of super alloys and super-duplex ss casting
- Principles of titanium and magnesium casting

**Topic 2: Design and Material Selection for Metal Casting**
- Casting design and simulation
- Material selection for casting

**Topic 3: Advanced Casting Methods**
- Overview of lost foam casting and other advanced castings methods
- Liquid forging
- Semi-solid casting

About the Course Leaders

**Dr Chua Beng Wah** is a research scientist and team leader at SIMTech. He received his PhD in Mechanical Engineering from the National University of Singapore in 2006. His current research focuses on metal forming and casting processes, particularly in the areas of liquid forging of light alloys Al, Mg and composites, hybrid forming of high-strength components and nanostructured materials. He is currently involved in a number of research and industry projects and is responsible for the technology commercialisation, especially for the translation of the liquid forging technology into the market place.

**Prof Nasser Varahram** is a renowned industrial consultant for 30 years, head of research and development of SUTCAST, Canada and Professor of Metals Casting at Sharif University of Technology. His area of expertise is Metal casting technology with many years of precious industrial experience and numerous areas of casting technology development.

Course Fee and Funding

- The full course fee this module is S$3,000 before course fee funding & GST.
- All Singaporeans and Permanent Residents aged 21 years and above can enjoy course fee funding of up to 50% of the course fee (capped at S$15/training hour).
- Singaporean or Permanent Resident employees fully sponsored by SMEs can enjoy course fee funding support of up to 90% of the course fee (capped at S$50/training hour) under the Enhanced Training Support for Small & Medium Enterprises (SMEs) scheme, subject to eligibility criteria.
- Singaporeans aged 40 years and above can enjoy course fee funding of up to 90% of the course fee (capped at S$50/training hour) under the SkillsFuture Mid-career Enhanced Subsidy.
- Singaporeans aged 35 years and above with earnings not more than S$2,000 per month can enjoy course funding for 95% of the course fee under the Workfare Training Support (WTS) scheme.
- Singaporeans aged 25 years old and above are eligible for SkillsFuture Credit which can be used to offset course fee.

For more information about the course fee funding, please visit [www.ssg.gov.sg](http://www.ssg.gov.sg)