Polymer materials are widely used in our daily lives. With advancement of materials and process technologies during the recent years, more applications have been developed for polymer materials in high precision and fast growing industries such as automotive, aerospace, photonic, computer and medical devices. However, to make good use of the advanced polymer materials, it is essential to have a good understanding of polymeric material properties and the process technologies. The objective of this course is to provide the participants with essential practical skills and a good understanding of polymeric materials processing properties and the injection moulding and mould design technologies. The course comprises injection mould design principles, applications of CAE techniques in mould design and injection moulding processes. Industrial mould design application examples will be introduced and studied through case studies. On completion of this module, participants will be equipped with the knowledge and application skills to employ the injection moulding tool design technology for industrial applications.

Why This Course

- Highly practical and intensive
- Latest knowledge and up-to-date technology
- Case studies highlighting industrial application
- Expert trainers in the field with industrial experience

Who Should Attend

This course is designed for engineers, researchers and technicians from the precision engineering, electronics, aerospace, automotive and other relevant industrial sectors.

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

How to Select Materials for Injection Moulding Process
- Polymer materials: properties and industry applications
- Polymer materials selection and product design
- Injection moulding process and mould design
- Case Study: Plastic material selection, part design and mould design for high precision biomedical device

How to Apply CAE for Mould Design and Mould Flow Analysis
- Mould design using 3D CAD Platform: Pro-E, Auto CAD
- Injection mould FEM modelling and boundary condition setup
- Mould flow analysis, results interpretation, and process optimisation
- Case Study: Design optimisation of injection mould for high precision biomedical device moulding

How to Apply Injection Moulding Process and Troubleshooting Techniques
- Injection moulding machine operation and process parameters
- Moulded part testing and characterisation techniques
- Moulding defects and troubleshooting techniques
- Case Study: Injection mould and moulding process development for high precision biomedical device production and quality inspection

About the Course Leaders

Mr Chen Ge is a Principal Research Engineer from SIMTech. He received his MSc degree in Smart Product Design from the Nanyang Technological University, Singapore. He has been involved in various types of industrial consultancy projects on CAE simulation for new moulding product development, mould design and moulding process optimisation. Mr Chen has over 20 years of experience in FEM simulation, plastic injection mould design and moulding process development.

Course Fee and Funding
- The full course fee for this module is S$2,400 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

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