Course Introduction

Fluid-assisted injection molding (FAIM) is an extension technology of gas-assisted injection molding. Developed in 1970’s, this innovative concept was derived from improving product quality and reducing manufacturing cost. Here are the procedures of FAIM: Fluid was injected into the cavity when it was partially filled by the melt. Then, the fluid pushes the melt front forward and fully fills the cavity. At the end, fluid was extracted to form a hollow product. This molding process not only saves material cost but has better packing effect. Thus, product defects such as warpage and sink mark can be improved. In addition, product cycle time can also be reduced since part thickness is smaller than in traditional process. Although fluid-assisted injection molding process has several benefits, it is important to understand its effect during design stage. CAE tools can help validate design and offer a complete solution. For example, penetration behavior can be related to several important factors such as water pressure and short-shot size. By using CAE tools, some phenomena such as penetration length, core-out ratio, and warpage results can be predicted. This is very helpful for design revision and quality improvement. Users can understand potential problems of a design in real time. And the actual number of trails can be reduced in order to minimize manufacturing cost.

Goals

- Understand fluid-assisted injection molding process
- Realize the advantages/disadvantages of fluid-assisted injection molding
- Understand the differences between GAIM, FAIM, and conventional injection molding
- Experience how to use CAE to verify FAIM process
- Find out the benefits of FAIM through real case studies

Course Information

Date: Please refer to official website
Organizer: CoreTech System
Contact: mkt@moldex3d.com
Remark: Small class size of 8-10

Content

| Introduction to fluid-assisted injection molding |
| Advantages/Disadvantages of FAIM |
| GAIM, FAIM, and conventional injection molding |
| CAE analysis and FAIM validation |
| Case studies |
| Q & A |

*The agenda is subject to changes.*
Course Content

This course will start from the concept and theory of water-assisted injection molding followed by manufacturing facilities, advantages and potential problems of FAIM. What are the differences between GAIM and FAIM? Which one to use? This course will also compare these two processes with conventional injection molding process. After having the basic concept of FAIM, the course will lead students to FAIM CAE validation. Through three real case studies, we can understand not only the penetration behavior inside the mold but also process parameter effects on product quality. Most importantly, all these answers can be obtained in a short time which is also the key benefit of CAE simulation.

Participants

- Enterprise owner
- Engineer (RD, Manufacturing, Product design, Mold design etc.)
- Mold manufacturer
- Material supplier
- Academic
- Whoever interested in advanced plastic process manufacturing

Instructor

Our professional instructors all hold extensive qualifications and have many years of hands on experience in injection molding industry. A strength of Moldex3D Advanced Molding Technology

Workshop program is our committed and highly experienced instructors. Driven by their passion for the injection molding industry, our instructors are specialists in their relative fields with first-hand knowledge of their industry.