

Challenges of Design and Process Optimization of Co-injection Molding

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Course Introduction

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The co-injection molding process has the advantage of combining properties of two materials with one single step and found wide applications in consumer and high-tech products. It also helps reduce costs and has become an important sustainable process with the use of massive amount of recycled material. The challenge faced today, however, is to control the skin/core distribution inside the cavity. This is even more important for structural applications in which product stiffness depends largely on the skin/core distribution. The complex interactions between the two materials make it difficult to predict the flow behavior, especially for the geometrically complex product. Also defects like core surfacing and warpage due to asymmetric heat transfer further add difficulty to this already challenging process. It is therefore vital to understand and even to control the material flow of a co-injection molding process.

Participants

Ideally suited for all those with a need to keep aware of latest advances in multi-material injection molding technologies and CAE software applications.

Course Information

Date : Please refer to official website

Organizer : CoreTech System

Contact : mkt@moldex3d.com

Remark : Small class size of 8-10

Time	Topic
60 min	Registration
	Introduction to co-injection molding process
	Common defects and solutions
	Product design considerations and CAE analysis
	Case study 1: Design optimization
	How to design product & how to determine processing conditions
	Case study 2: Spec requirement
20 min	How to resolve unwanted warp & how to modify product design
	Q & A

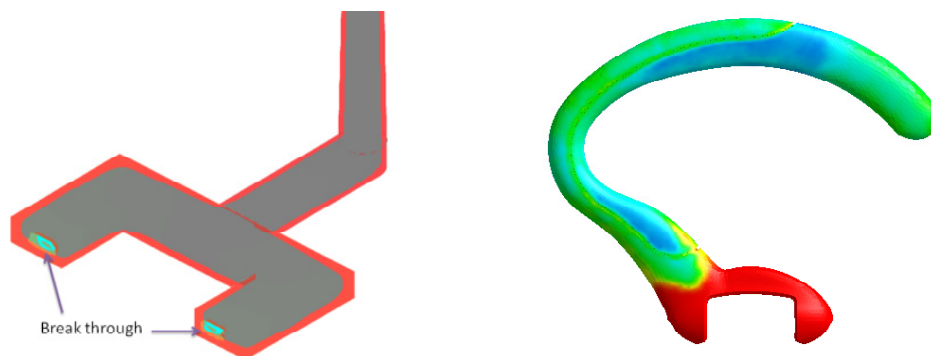
*The agenda is subject to changes.

Course Content

We will begin with introduction and development challenges of the co-injection molding process in this seminar. We will then discuss the control of material flow and its distribution in the cavity from the aspects of product design, processing conditions, and material selections. The attendees will also understand the importance of advanced CAE analysis technique to every stage of product design and manufacturing process. At the end, we will learn from real cases on how optimized design can be achieved to benefit from using the co-injection molding process.

Goals

- Save time with a selection of most impacting material options and latest technology innovations in co-injection molding
- Speed up future co-injection product development with a clearer view on important design considerations and processing controls.
- Differentiate your design flow from conventional trial-error methods to gain strategic benefits by adopting CAE incorporated design.
- Identify common defects and their solutions of the co-injection process.



Core surfacing phenomenon and skin distribution of products using co-injection process

Instructor



Shih-Po Sun, Ph.D.

Current Position : Senior engineer in Technical Research Division of CoreTech System Co., Ltd.

Education : PhD in Polymer Science from the University of Connecticut

Research Areas : polymer rheology, processing, and properties, polymer composite, biomedical materials, degradable polymers, and plastics applications in industrial design

Dr. Sun has researched parenteral drug packaging in Eli Lilly and Company. He has also worked with Teleflex Medical to develop a fully absorbable bone graft composite. He is now a senior research engineer supporting the development of advanced injection molding CAE software and also in charge of material testing and measurement in Coretech System company.