

In-depth Study of RHCM and IHM Technology and Industrial Applications

Limited Seats. Register Now!

Course Introduction

Injection molding technology has been widely used for various daily appliances and high-tech product manufacturing. However, many problems are encountered using this conventional molding process, such as welding line, the poor surface quality, fiber floating, warpage, poor duplication of the micro-structure, and so on. To overcome these issues, various dynamic variotherm technologies, which are by means of changing mold temperature to increase melt fluidity in the filling stage, have been proposed and verified in industry. Among those technologies, some are via temperature increase in the entire moldbase, and the others are via temperature increase on the mold surface only. But in reality, the complex dynamic mold temperature control mechanism makes it very challenging to suitably perform and manage those variotherm technologies in injection molding system.

Goals

- Realize various variotherm technologies and their applications
- Understand what true 3D Transient Cool Technology is
- Learn how to recognize the differences among CIM, RHCM, and IHM
- Visualize the IHM technology application in a real industrial case development
- Visualize the RHCM technology application in a real industrial case development
- Understand how IR-heating technology can enhance the micro-feature replication

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Course Information

Date : Please refer to official website

Organizer : CoreTech System

Contact : mkt@moldex3d.com

Time	Topic
60 min	Registration
	Introduction to variotherm technology and their Industrial Applications
	Discuss various variotherm technologies and their mechanisms: <ul style="list-style-type: none"> • Inside matter of CIM • Introduction to true 3D Transient Cool Technology • Inside mechanism study: from CIM to RHCM and IHM • Experimental verification
	Case study (1) IHM method in TV frame development and inside mechanism study
	Case study (2) RHCM method in TV frame development and inside mechanism study
20 min	Case study (3) IR heating application in micro-feature replication investigation
20 min	Q & A

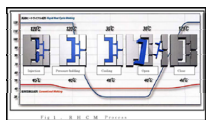
*The agenda is subject to changes.

Course Content

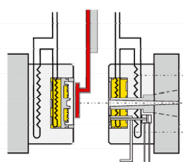
Firstly we will introduce various variotherm technologies and their industrial applications, including RHCMD (Rapid Heat Cycle Molding), E-mold (Electricity Mold), IHM (Induction Heating Mold), IR heating, and so on. Furthermore, the difference between conventional injection molding (CIM) and RHCM will be addressed briefly. Moreover, we will demonstrate true 3D Transient Cool technology which is used to have insight into the mechanisms of variotherm technologies. This technology has been announced in 2006 from us. Here, we will use this Transient Cool technology to study why and how the differences are among CIM, RHCM, and also IHM. Besides, to get more concrete understanding, many industrial cases are displayed. The first case is about the TV frame development. We will apply true 3D Transient Cool technology to investigate deeply how IHM method can improve weld-line problem. In addition, the dynamic features inside moldbase at different time stage can be visualized. Through this visualization, the IHM method can be managed more efficiently. Moreover, the second case is focused on RHCM method in TV frame development. From this case, we will show how the product quality can be enhanced through internal heating mechanism in the moldbase. Finally, we will discuss how to use IR heating method to enhance the replication of micro-features in injection molding.

Participants

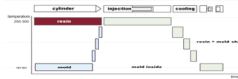
- Owners and managers
- Supervisors in research or production departments
- Part design/production engineers
- Mold design/manufacturing engineers
- Molding experts/ engineers
- Material suppliers
- People interested in plastic products and processing
- People interested in injection compression products and processing



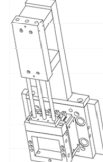
(a) RHCMD



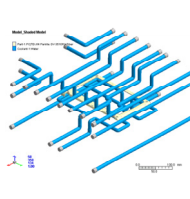
(c) IHM



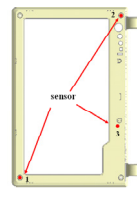
(b) E-mold



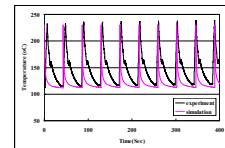
(d) IR heating



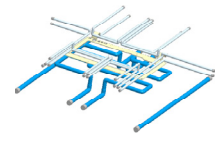
(e)



(f)



(g)



(h)

Dynamic variotherm technologies:

- (a) RHCMD (Rapid Heat Cycle Molding)
- (b) E-mold (Electricity Mold)
- (c) IHM (Induction Heating Mold)
- (d) IR heating.

- (e) Cooling channel layout and runner system
- (f) Location of temperature measurement for IHM technology.
- (g) Comparison between numerical simulation result and experimental study in IHM method.
- (h) Heating and cooling channel layout for RHCMD system

Instructor



Dr. Chao-Tsai Huang

Current position : Director in Technical and Research Division of CoreTech System

Education : PhD in Chemical engineering at University of Washington

Specialization : Polymer properties/Polymer processing/Plastic optical-electric part development /Optical application analysis

In the past few years, Dr. Huang and his team have devoted to polymer processing and IC-packing research with success. Their services are worldwide in several professional areas including traditional injection molding, injection molding problems and solutions, multiple component molding, plastic optical product, and other special molding processes. Dr. Huang is also an expert in injection molding screw and extrusion analysis. He has helped several famous manufacturers for continuous process manufacturing including flat die, annular die, and profile die systems. He is also in charge of blow molding/thermal forming designs and their trouble shooting. Recently, Dr. Huang advocates the concept of plastic product life cycle management.