Course Introduction

In recent years, as a result of varieties of needs and applications for optical-electric products, the traditional manufacturing process is no more suited for all purposes. Therefore, massive production using plastic injection molding is spreading to many optical application fields. However, the required expertise is very extensive and profound, ranging from optical design, mechanism design, mold design, process condition operation, product examination to process optimization. Hence, the technology in one single field cannot have effective control over both dimension accuracy and optical property. Based on this, the course begins with introduction to optical industries and applications in smart phone · LCD backlight module, LED, etc. Then the issues and challenges, such as geometrical accuracy control, process-induced residual stress and birefringence phenomena, in optical product development are discussed. Afterwards, the use of CAE for integrating design/process, diagnosing problems and optimization is introduced. The CAE technology can help understand how plastic rheology affects processing, induces residual stress and finally influences product quality.

Goals

- Applications for precise optical parts and critical technology
- Applications and two main challenges for plastic optical parts
- Process flow and bottlenecks for traditional product development cycle
- Four major aspects and their interactions in optical product development
- Process flow for CAE integration and optimization in design/process
- Process-induced variation and possible causes in optical product development

Course Information

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

Topics

- Introduction to Optical Industry and Applications
- Issues and Challenges for Optical Product Development
- CAE Integration and Optimization of Design/Process
- Case study - Problems and Solutions for Light Guide product development
- Case study - Prediction and Investigation for residual stress/ birefringence on optical parts
- Q & A

*The agenda is subject to changes.
Course Content

In this course, two real case studies are used to deepen the understanding of benefits from CAE. First, the surface defect issue, burned mark, on light guide is investigated. The problem diagnosis and solution finding is performed through CAE without changing product and mold design. In another case, the molding mechanisms for optical lens and light guide plates are explored. The effects of various geometries and process conditions on flow-induced/thermally-induced residual stress and birefringence are discussed. Through this course, you will learn property change in the production process of optical plastic parts from CAE analysis.

Participants

- Owners, managers, and supervisors in research or production department
- 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

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.