

SCIENTIFIC INJECTION MOLDING

SmartTech™ Onsite Training Events

Routsis SmartTech™ is the most effective hands-on training program available for plastic processors and technicians. This unique combination of face-to-face instruction, online training, and hands-on skills development teaches your employees the science of injection molding — not just the workings of a particular injection molding machine.

How do the SmartTech™ events work?

Prior to the event, participants are required to take online training to prepare them for focused technical discussions. The onsite training event itself can be 1, 2, or 3 days long, depending on your company's needs. After the event, participants must complete additional online training — reinforcing the classroom discussions and preparing them for the completion exam.

▶ **1-Day: Classroom**

Designed for larger groups of 10-15 participants, Routsis Training's 1-day **SmartTech™ Classroom** event includes pre-requisite online training, a full day of in-person classroom instruction at your facility, follow-up online training, and a completion exam.

▶ **2-Day: Skills Development**

Building on the Classroom Event, our 2-day **SmartTech™ Skills** event devotes equal time to practical, hands-on skills-development at your machines. Intended for groups of 8-10 participants*, these events are the ideal choice for companies with access to processing equipment.

▶ **3-Day: Workshop**

The **SmartTech™ Workshop** event augments 2 days of classroom & skills training with a full-day instructor-led workshop. Designed for 8-10 participants*, the SmartTech™ Workshop is an excellent choice for companies who wish to provide employees with intensive hands-on skills training.

What is the SmartTech™ pricing model?

SmartTech™ pricing is based on the number of contiguous days of onsite instruction. Since most of the cost is due to travel and preparation, longer events are more cost-effective. For example, a 2-day event costs only 25% more than a 1-day event — and a 3-day event costs 20% more than a 2-day event.



Routsis Training
Hands-on. Online. Ongoing.

** Mold Setter Pro™ Skills Development and Workshop events are limited to 6 participants for safety reasons*



SmartTech Mold Setter Pro™ for Die Setters and Technicians

The **SmartTech Mold Setter Pro™** class provides participants with an understanding of die setting concerns including changeover prep, automation, mold change, material drying, and effective purging — teaching your employees how to quickly, safely, and efficiently perform a mold change. This class is ideal for any employee involved in mold change processes at your facility.

▼ **Pre-Requisite Online Training** (7-14 hours)

- The Injection Molding Machine
- The Injection Molding Process
- The Injection Mold
- Injection Mold Setup
- Material Drying Technology, Part 1
- Scientific Purging Techniques

▼ **Classroom Instruction**

- Injection Molding Safety
- Die Setting: Preparation
- Die Setting: Removal
- Die Setting: Installation
- Material Drying
- Effective Purging

▼ **Post-Requisite Online Training** (7-14 hours)

- Process Documentation for Scientific Molders
- Material Drying Technology, Part 2
- Scientific Purging: Procedures
- Automation & Robotics
- Injection Mold Maintenance
- Mold Setter Pro™ Completion Exam

▼ **Hands-On Skills Development** **

- Equipment Review
- Dryer Review & Cleaning
- Effective Purging Strategies
- Mold Change: Preparation
- Mold Change: Removal
- Mold Change: Installation

▼ **Mold Setter Pro™ Workshop** **

This optional workshop adds a full day of practical hands-on skills development.

The session begins with a discussion of strategies to optimize the mold change process. The remainder of the day is spent on your production floor performing a mold change: from preparation and removal to installation and dry cycling.



**** Hands-on Skills Development is only performed at 2-day & 3-day events. Workshops require a third day.**



SmartTech Processor Pro™

for Technicians, Supervisors, and Engineers

Routsis Training's **SmartTech Processor Pro™** provides participants with a well-rounded understanding of Scientific Injection Molding. Participants learn practical strategies for developing, documenting, and troubleshooting a Scientific Injection Molding process. This course is perfect for die setters, process techs, engineers, supervisors, and managers.

▼ **Pre-Requisite Online Training** (6-12 hours)

- The Injection Molding Machine
- The Injection Molding Process
- The Injection Mold
- Understanding Plastics Materials
- Establishing a Scientific Molding Process

▼ **Classroom Instruction**

- Injection Molding Safety
- First Stage Injection
- Inputs, Outputs, & QA
- Check-Ring-Repeatability
- Second Stage Packing
- 5 Rules of Processing
- Part Cooling Basics
- Screw Recovery Basics
- Scientific Troubleshooting

▼ **Post-Requisite Online Training** (6-12 hours)

- Material Drying Technology
- Scientific Troubleshooting: Introduction
- Scientific Troubleshooting: Visual Defects
- Scientific Troubleshooting: Dimensional Defects
- Scientific Troubleshooting: Material & Cycle Defects
- Processor Pro™ Completion Exam

▼ **Hands-On Skills Development ****

- 1st Stage Injection: Speed
- 1st Stage Injection: Transfer
- 1st Stage Injection: Pressure
- 1st Stage Injection: Time
- 1st Stage Injection: Check Ring
- 2nd Stage Packing: Pressure
- 2nd Stage Packing: Time
- 2nd Stage Packing: Clamp Tonnage
- 2nd Stage Packing: Cushion
- Screw Recovery Time
- Melt Temperature Measurement
- Coolant Temperature Measurement
- Process Documentation

▼ **Processor Pro™ Workshop ****

This optional workshop adds a full day of practical hands-on skills development.

In the first part of the session, participants develop critical Scientific Process Documentation skills — using established processes at your facility. The remainder of the session focuses on developing a robust Scientific Molding Process.





SmartTech Optimizer Pro™

for Advanced Technicians, Supervisors, and Engineers

Intended for advanced employees, this package expands on topics covered in our **Processor Pro™** event. **Optimizer Pro™** delivers the necessary knowledge & skills to optimize many aspects of a Scientific Molding Process — including Injection, Cooling, Recovery, Cooling, and Part Removal. This course is recommended for all personnel involved in developing, establishing, evaluating, or optimizing a Scientific Molding Process.

▼ Pre-Requisite Online Training (7-14 hours)

- Processing Parameters: Introduction
- Processing Parameters: Process
- Processing Parameters: Part Removal
- Math for Scientific Molders
- Processing For Profit

▼ Classroom Instruction

- 1st Stage Optimization
- In-Mold Rheology
- 1st Stage Cavity Balance
- Part Cooling Rate
- Recovery Optimization
- Practical Rheology
- Mold Opening & Closing
- Part Ejection
- Scientific Purging

▼ Post-Requisite Online Training (7-14 hours)

- Electric Injection Molding Machines
- Scientific Purging: Techniques
- Scientific Purging: Procedures
- Scientific Purging: Compounds
- Scientific Purging: Analysis
- Optimizer Pro™ Completion Exam

▼ Hands-On Skills Development **

- 1st Stage Injection: Rheology
- 1st Stage Injection: Cavity Imbalance
- Coolant Temperature Optimization
- Cooling Time Optimization
- Shots in Barrel Calculation
- Dryer Residence Time Calculation
- Rear Zone Temperature Optimization
- Back Pressure Study
- Comparative Rheology
- Part Removal Optimization

▼ Optimizer Pro™ Workshop **

This optional workshop adds a full day of practical hands-on skills development.

Our instructor spends the day with your employees, working as a group. At management's discretion, the class will either develop a new process from scratch or work to improve existing processes at your facility. Basic DOE and Comparative Purging Analysis labs are also available.





SmartTech PVC Processor Pro™ for Performance PVC & CPVC Processors

This class provides participants with a strong understanding of how to build, document, and troubleshoot a Scientific Molding process. The **PVC Processor Pro™** curriculum is specifically geared toward companies that mold performance PVC & CPVC parts with strict strength and/or resistance requirements — such as pipe fittings, medical containers, and electrical housings.

▼ **Pre-Requisite Online Training** (6-12 hours)

- The Injection Molding Machine
- The Injection Molding Process
- The Injection Mold
- Understanding Plastics Materials
- Establishing a Scientific Molding Process

▼ **Classroom Instruction**

- Injection Molding Safety
- 1st Stage Injection for PVC
- 2nd Stage Packing for PVC
- 5 Rules of Processing
- Gelation/Fusion of PVC
- Part Cooling Basics
- Screw Recovery for PVC
- Performance PVC Process Documentation
- PVC Troubleshooting

▼ **Post-Requisite Online Training** (6-12 hours)

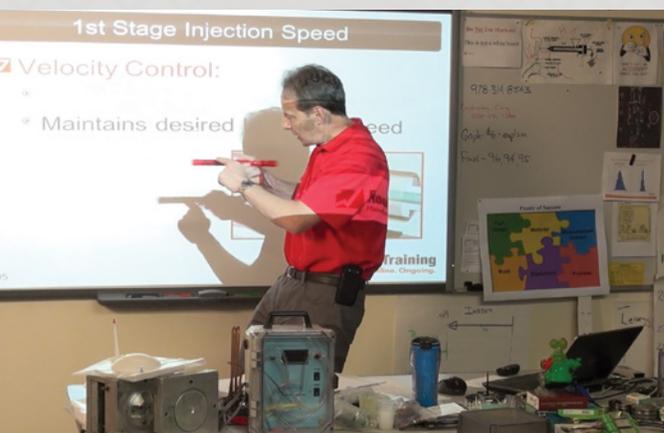
- Material Drying Technology
- Scientific Troubleshooting: Introduction
- Scientific Troubleshooting: Visual Defects
- Scientific Troubleshooting: Dimensional Defects
- Scientific Troubleshooting: Material & Cycle Defects
- PVC Processor Pro™ Completion Exam

▼ **Hands-On Skills Development** **

- 1st Stage Injection: Profile
- 1st Stage Injection: Transfer
- 1st Stage Injection: Pressure
- 1st Stage Injection: Time
- 2nd Stage Packing: Pressure
- 2nd Stage Packing: Time Study
- 2nd Stage Packing: Clamp Tonnage
- 2nd Stage Packing: Cushion
- Screw Recovery Time
- Melt Temperature Measurement
- Coolant Temperature Measurement
- Barrel & Dryer Residence Time Calculations
- Process Documentation for Performance PVC

▼ **PVC Processor Pro™ Workshop** **

This optional full-day workshop begins by helping participants develop process documentation skills — using established processes at your facility. The rest of the time is spent developing a robust Scientific Molding Process for performance PVC or CPVC parts.



**** Hands-on Skills Development is only performed at 2-day & 3-day events. Workshops require a third day.**



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