

Fall 2022 Seminars

Presented by Extrusion Solutions North, LLC



Do not miss this unique opportunity to attend and participate in a one-day seminar on extrusion science. The intent of these seminars is to be educational, effective, and efficient at an economical price. The seminars will be strategically located in areas of heavy extrusion populations, to limit attendee's required travel time.

Presented by Tim Groth, President of Extrusion Solutions North, LLC. Tim has been in the extrusion industry for 38 years. His knowledge ranges from plant start up, material science, tooling, development, troubleshooting, applying Lean Manufacturing to extrusion process and training. Tim has authored multiple extrusion articles and is a contracted Penn College of Technology Instructor.

Seminar Instruction:

- **Lean Tooling:**
 - *Learn techniques to do the engineering up front in the tool room instead of leaving it up to the operator to do the engineering on the shop floor*
- **Material Science:**
 - *Understanding Newtonian fluids, viscosity, density, and the difference between an amorphous and semi-crystalline material*
- **Extrusion Process Science:**
 - *Extruder components, screw zones, feeding, types of cooling*
- **Extrusion Process Troubleshooting Science:**
 - Problem solving, variation, surge, and understanding backpressure

Who should attend? Operators, Team Leads, Manufacturing Engineers, Process Engineers, Tool Makers, Operation Managers, Sales staff, Equipment suppliers, Material suppliers, and team members from Supply Chain

- ❖ This seminar will give basic extrusion knowledge all the way through advanced techniques, specifically formatted to be easily understandable.

Two dates and locations to choose from.

- 1) 9/14/22 9:00 – 3:30 at the GrandStay Hotel & Suites 32027 Alexander Ct, Cannon Falls MN 55009
- 2) 9/28/22 9:00 – 3:30 at the Holiday Inn Express Hotel 4322 Clearwater Road, St. Cloud MN 56301

Seminar attendees are responsible for making their own reservations, if needed.

Seminar Registration Fee:

\$175.00 per person including lunch, snacks, and refreshments, 3 or more attendees from the same company \$150.00 per person.

- Check or PayPal transaction accepted
- Please make check payable to **Extrusion Solutions North, LLC**
- PayPal payable to timgroth@gmail.com

To Register for seminar and additional information:

- Contact Tim Groth at 651-357-0814 or via email timgroth@gmail.com

Space is limited, so book soon. Deadline to register is September 8, 2022.