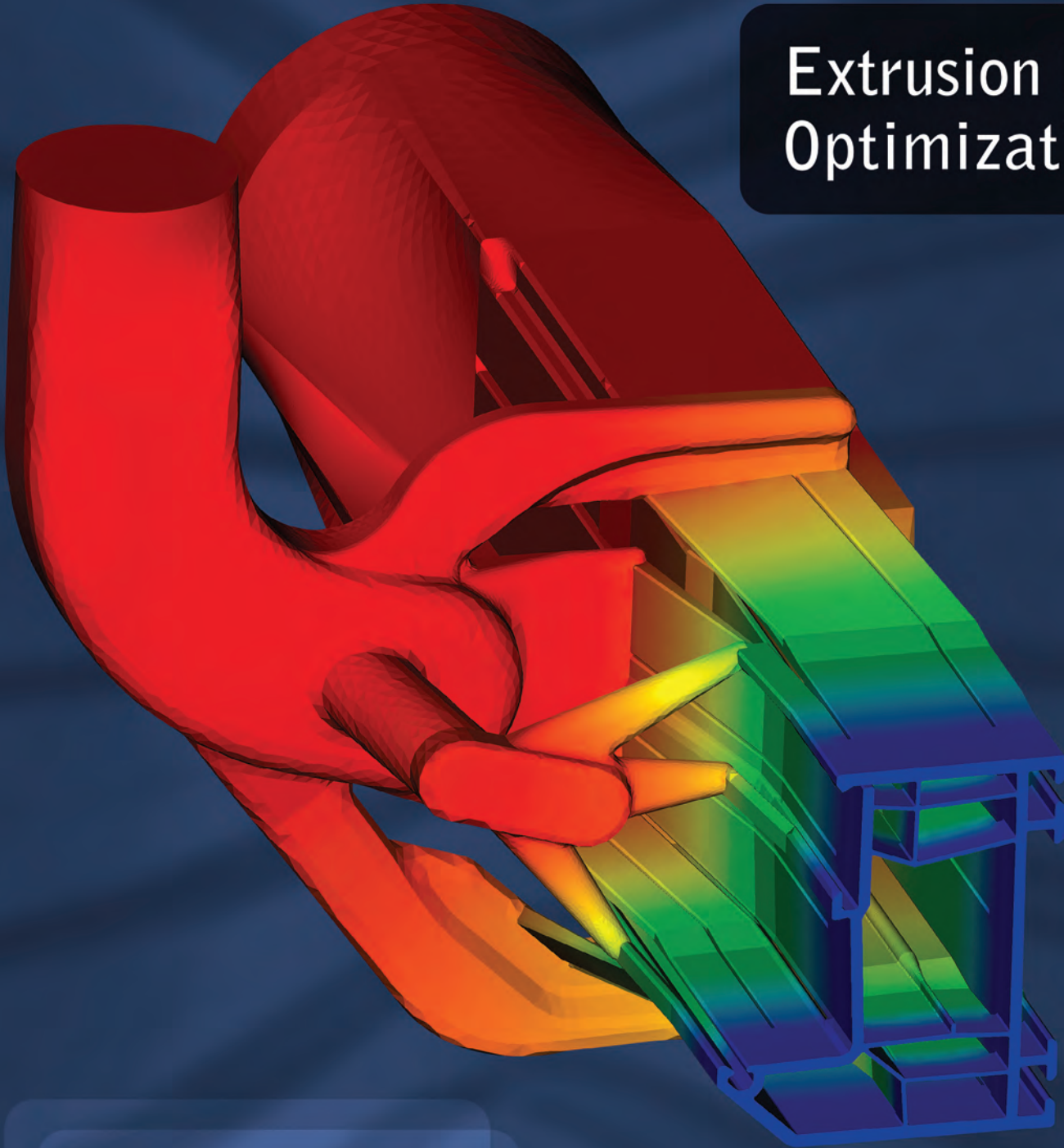




Extrusion Die Optimization



polyXtrue

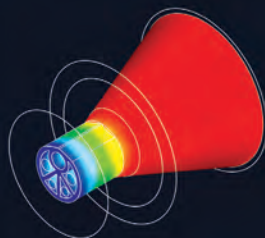
MONOEXTRUSION & COEXTRUSION SOFTWARE

polyXtrue Monoextrusion Dies

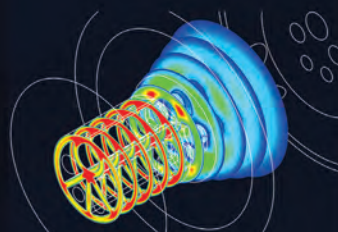
Multi-Lumen Die

Minimize extrudate shape distortion for medical tubing dies

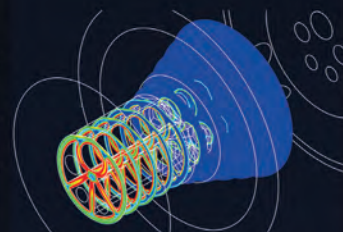
PRESSURE



VELOCITY

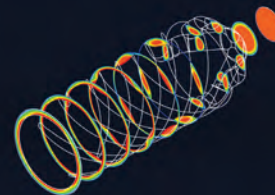
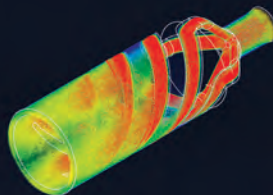
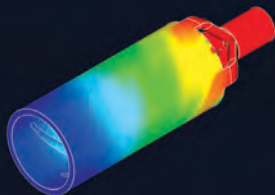


TEMPERATURE



Spiral Mandrel Die

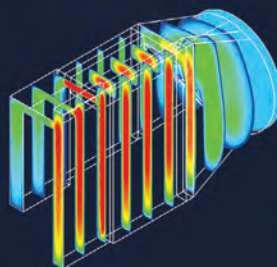
Uniform velocity and temperature distributions at die exit



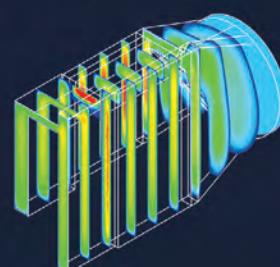
optiXtrue

Automatic optimization of parameterized extrusion die geometries in SolidWorks and Inventor software

ORIGINAL DIE



OPTIMIZED DIE



Velocity Distribution

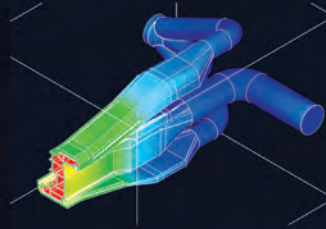
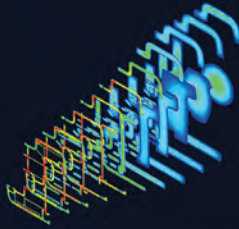
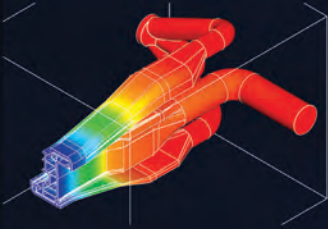
polyXtrue Coextrusion Dies



PRESSURE

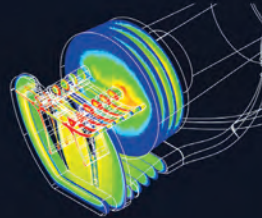
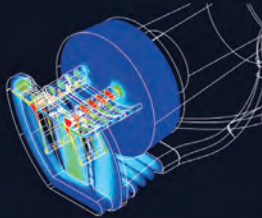
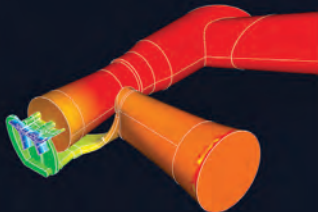
VELOCITY

TEMPERATURE



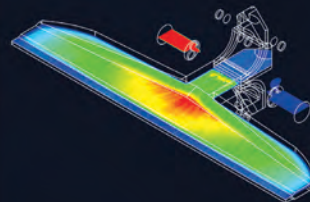
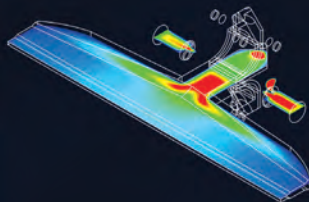
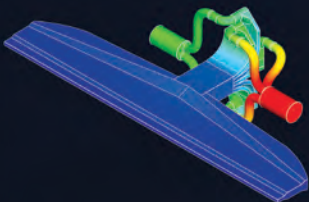
Window Profile Die (2 LAYERS)

Mesh Partitioning
Technique for complex
coextrusion simulations



Automotive Seal Die (2 LAYERS)

Level Set Method for
splitting and combining
layer structures



Sheet Die (5 LAYERS)

Sheet with constant
thickness and uniform
layer structure

LEARN MORE: PlasticFlow.com

polyXtrue Features

- 3-D flow analysis completed in 1 hour using GPU even for highly complex dies
- No limit on the number of elements in the finite element mesh
- Analysis with more than 10 million finite elements run easily on a PC
- Accurately predict layer structure of up to 11 different polymers and 21 layers
- Accurate prediction of extrudate shape distortion with up to 20 calibrators/sizers in the haul-off unit
- Analysis of heat transfer in die plates included in the analysis
- Software can be run as an add-in inside Inventor or SolidWorks software
- Includes effect of elongational viscosity on the flow in extrusion dies
- Polymer slip along the die walls allows for highly filled polymers
- Built-in editable material database
- Highly user-friendly graphical user interface with advanced post-processing
- Animation of the simulation results for easy visualization

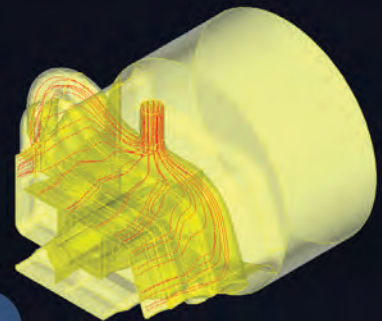
polyXtrue Benefits

- 50-75% reductions in fine-tunings and die-development time
- Balance the flow at die exit
- Maximize throughput
- Simplify die geometry
- Troubleshoot complex polymer extrusion problems

Additional Output

- Extrudate thickness deviation
- Residence time
- Shear rate
- Stress

Streamlines for individual layers



Customer Testimonial

"The polyXtrue software completely exceeded the expectations we had from a die design software package. I was pleasantly surprised to find out how easy it was to use the software. I have been working with extrusion die design and other CAD software packages for the last thirty years. I was highly impressed with polyXtrue because of its highly user-friendly graphical user interface, its fast computation speed, and also the accuracy of its 3-D flow calculations. I am looking forward to exploiting polyXtrue for all our extrusion die design needs."

—A customer who purchased polyXtrue for extrusion die design

PHONE: (906) 483-0691 EMAIL: support@plasticflow.com
Plastic Flow, 920 W. Water Street, Suite 307, Hancock, MI 49930

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