

News Release

Celanese Corporation
222 West Las Colinas Blvd.
Suite 900N
Irving, Texas 75039

Celanese Uses New Autodesk® Simulation Moldflow® to Quantify Faster Cycle Benefits of Fortron® ICE PPS

Simulation provides customers with fully optimized material solution

DALLAS, FRANKFURT and SHANGHAI (June 9, 2014) – [Celanese Corporation](#) (NYSE: CE), a global technology and specialty materials company, is using enhanced capabilities of the latest [Autodesk® Simulation Moldflow® 2015](#) release from [Autodesk](#) to predict the crystalline behavior of [Fortron® ICE](#) polyphenylene sulfide (PPS) and demonstrate how customers can take full advantage of the material's improved processing characteristics.

“Celanese uses the most advanced tools to characterize its material so customers can take advantage of a fully optimized solution,” said Edward Hallahan, Fortron PPS global marketing manager. “By using a high-end plastic injection molding computer-aided engineering tool from a leading developer and supplier of plastic part design software, Celanese enables customers to actually see how Fortron ICE technology enables full crystallinity while achieving fast cycle times and maintaining PPS high-performance characteristics.”

New ICE (Improved Crystallization Evolution) grades are part of the Fortron PPS semi-crystalline polymer family that features exceptionally high temperature performance up to 240 degrees Celsius (464 degrees Fahrenheit); outstanding resistance to fuels, oils and solvents; excellent hardness, stiffness and dimensional stability; and inherent flame-resistance. The Fortron ICE grades use an innovative platform technology developed by Celanese material scientists, delivers material properties that are equivalent to or better than standard injection molding Fortron PPS grades, and at the same time, significantly improve the processing characteristics.

“One fundamental aspect of semi-crystalline polymers like Fortron PPS is that the specialty polymer's physical properties are dictated by the amount, size and type of crystalline structures, which are developed while the plastic cools. The final morphology is influenced by the amount of shear the material experiences during injection molding, how fast the material cools down and the actual material itself,” said Hanno van Raalte, product manager for Autodesk Simulation Moldflow products. Our latest software enables customers to simulate the optimal molding cycle.

Autodesk Simulation Moldflow 2015, backed by 15 years of material science research on the topic of crystallization, can predict the crystalline structure and account for the materials' true behavior by:

- removing assumptions on solidification for semi-crystalline materials;
- improving pressure predictions;
- improving warpage prediction via improved volumetric shrinkage and anisotropy prediction

“As a company on the forefront of innovation, Celanese continues to invest in new technologies that enable customers to take full advantage of new materials and expand their product lines,” said Jameson Fee, Celanese design and simulation leader and program manager. “The feature-rich

Autodesk Simulation Moldflow is our preferred simulation package, which quantifies and demonstrates the cycle time benefits of Fortron ICE PPS.”

Fortron ICE grades can help customers stay competitive by reducing cycle times, scrap rates and overall production costs, as well as improving flatness and enabling easier demolding.

Injection molders that use hot molding systems, operating at temperatures greater than 135 degrees Celsius (275 degrees Fahrenheit), can:

- reduce molding cycle times, providing production cost-savings and increasing net operating capacity;
- improve demolding of parts, decreasing the number of broken parts and reducing costly rework.

In addition, molders with cold injection units, operating at temperatures between 90 degrees to 135 degrees Celsius (194 degrees to 275 degrees Fahrenheit), can achieve:

- full crystallization at lower temperatures, opening new opportunities without the additional cost of hot molding equipment.

Fortron PPS is a semi-crystalline polymer often used to replace metals and thermosets in various automotive, electrical/electronics, aerospace, fluid handling and industrial/consumer applications.

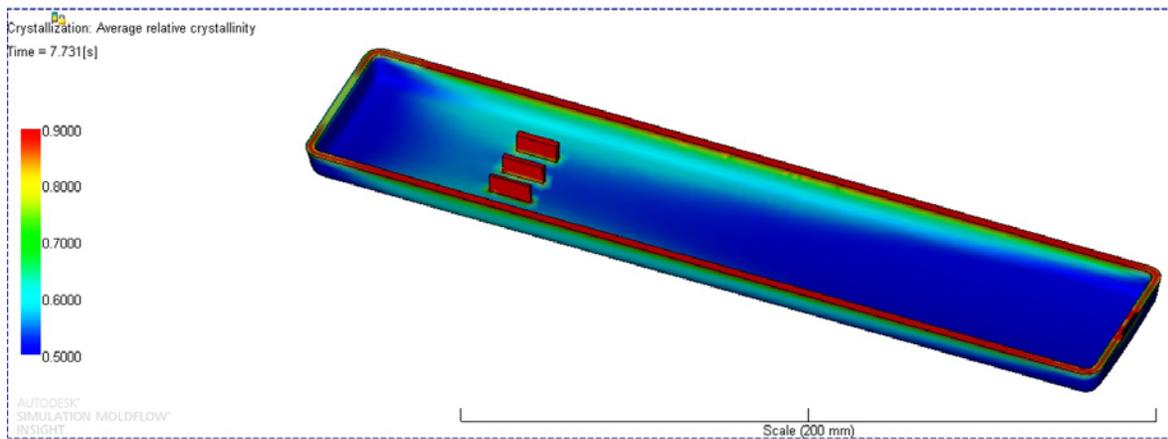
About Celanese

Celanese Corporation is a global technology leader in the production of differentiated chemistry solutions and specialty materials used in most major industries and consumer applications. With sales almost equally divided between North America, Europe and Asia, the company uses the full breadth of its global chemistry, technology and business expertise to create value for customers and the corporation. Celanese partners with customers to solve their most critical needs while making a positive impact on its communities and the world. Based in Dallas, Texas, Celanese employs approximately 7,400 employees worldwide and had 2013 net sales of \$6.5 billion. For more information about Celanese Corporation and its product offerings, visit www.celanese.com or our blog at www.celaneseblog.com.

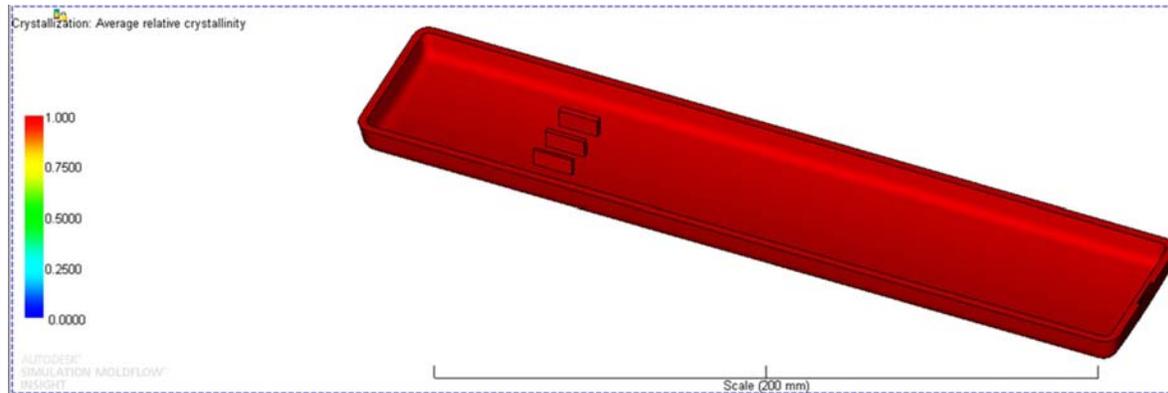
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Celanese Business Contacts:

Engineered Materials:	Media Relations Americas	Media Relations Europe (Germany)	Media Relations Asia (Shanghai)
	W. Travis Jacobsen	Henning Küell	Amber Zhao
	+1 972-443-3750	+49-69-45009-1797	+86-21-3861-9222
	William.Jacobsen@celanese.com	Henning.Kuell@celanese.com	Tong.Zhao@celanese.com



Simulation provides customers with fully optimized material solution — Celanese uses Autodesk® Simulation Moldflow® to predict how Fortron® ICE PPS technology enables full crystallinity while achieving fast cycle times (image shows relative crystallinity at a given point in time during the processing cycle)



Simulation provides customers with fully optimized material solution — Celanese uses Autodesk® Simulation Moldflow® to predict how Fortron® ICE PPS technology enables full crystallinity while achieving fast cycle times (image shows final crystal size at the completion of cycle throughout the thickness of the part)