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Moldflow Injection Molding Simulation: Research and Development update

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Learning Objectives

- [Moldflow 2021 Accuracy Improvement
  - 3D Warp for Semi-Crystalline Materials
- New Features and Capabilities
  - Shrinkage Correction in 3D
  - 3D Large Deflection analysis
  - 3D Warp model size limit
  - Additional Results
- Accuracy Enhancements
  - Warp & Flow Accuracy
- External Research Collaborations

Description

This presentation will introduce recent and current research topics related to the Autodesk Moldflow injection molding simulation solvers, including the prediction of final part shape after molding, the behavior of the polymer melt during cavity filling, pack and cooling and the prediction of visual defects which may results in the molded part. In particular, improvements in the warp prediction accuracy for 3D model geometries by making use of measured shrinkage calibration data will be discussed, as well the elimination of model size restrictions for 3D warp analysis. Improvements in accuracy of Dual-Domain corner effects warpage will be demonstrated along with options for examining plastic part deformation after assembly.

Speaker(s)

Dr. Franco Costa is Research Director for Moldflow injection molding simulation at Autodesk, Inc. With 29 years of experience with Moldflow simulation software, he has contributed to the technologies of 3D flow simulations, thermal analysis, crystallization analysis, structural analysis, final net-part shape prediction, and Multiphysics for the plastic injection molding simulation industry. Franco has moved through roles as a research engineer, Development Team leader, and manager, and he directs research projects for the Autodesk Moldflow group as well as acting as an internal reviewer and technology architect. Franco has presented at academic conferences in the field of polymer processing. He also acts as a referee on international journals and often presents overviews of Simulation Moldflow research-technology directions at Simulation Moldflow user meetings. Franco is based in the Autodesk Research and Development Center in Melbourne, Australia.

Useful Links

Validation Documents can be obtained from:
https://www.autodesk.com/industry/manufacturing/simulation-hub/resources?type=report&products=--autodesk-moldflow

Scandium Technology Preview:
https://feedback.autodesk.com/key/F43KDMRN2HP6CGND?_ga=2.117625801.1773510017.1632095341-576883757.1624518611