

mid Moulding
Innovation
Day 2025

What's new 2025 – Parte 2

Michelle Tung

Moldex3D



Outline

01

Solver

02

Pre-
processing

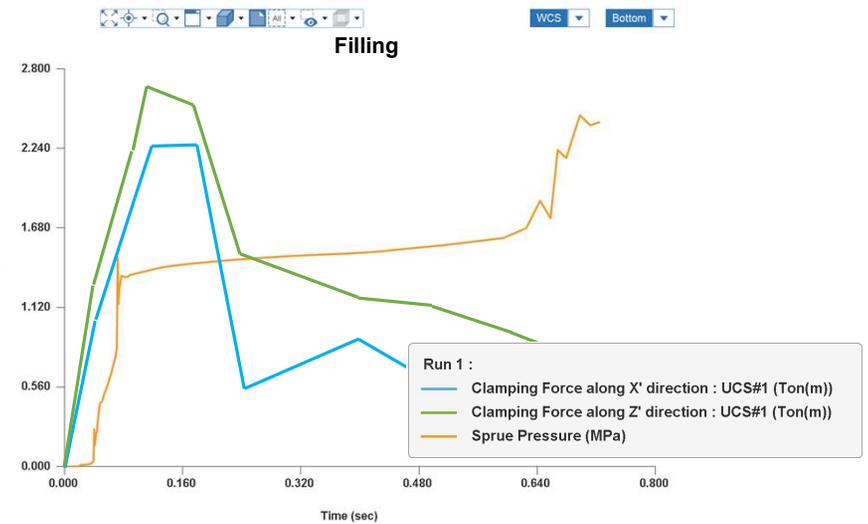
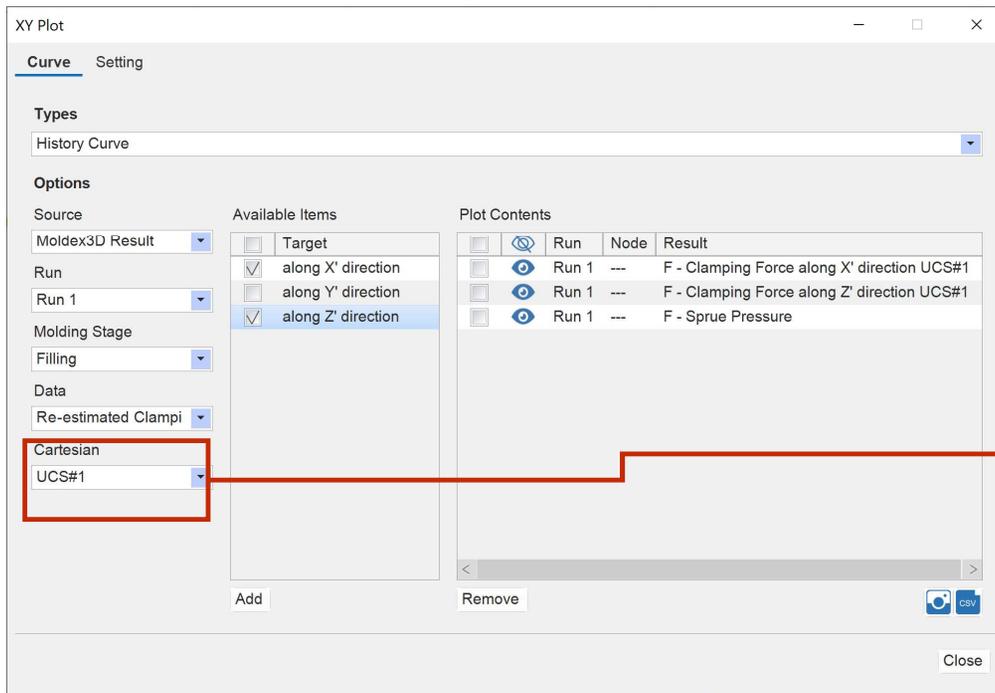
03

Post-
processing

04

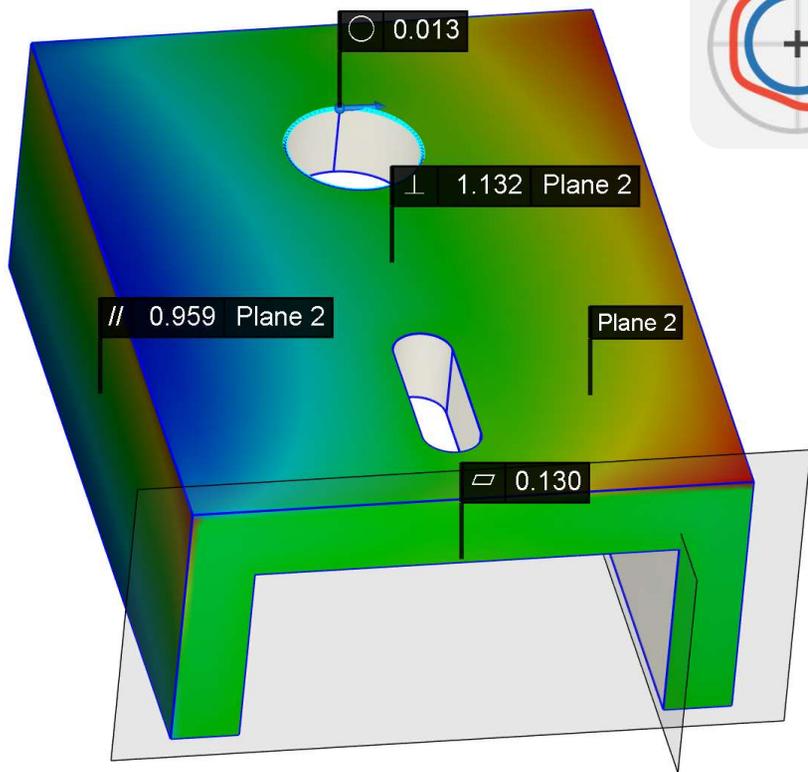
Usability
improvement

Add re-estimated clamping force in XY Plot considering user-defined coordinate system



+ New Measurement Tools - Parallelism & Perpendicularity

Measure Digital Models Just Like Physical Parts!



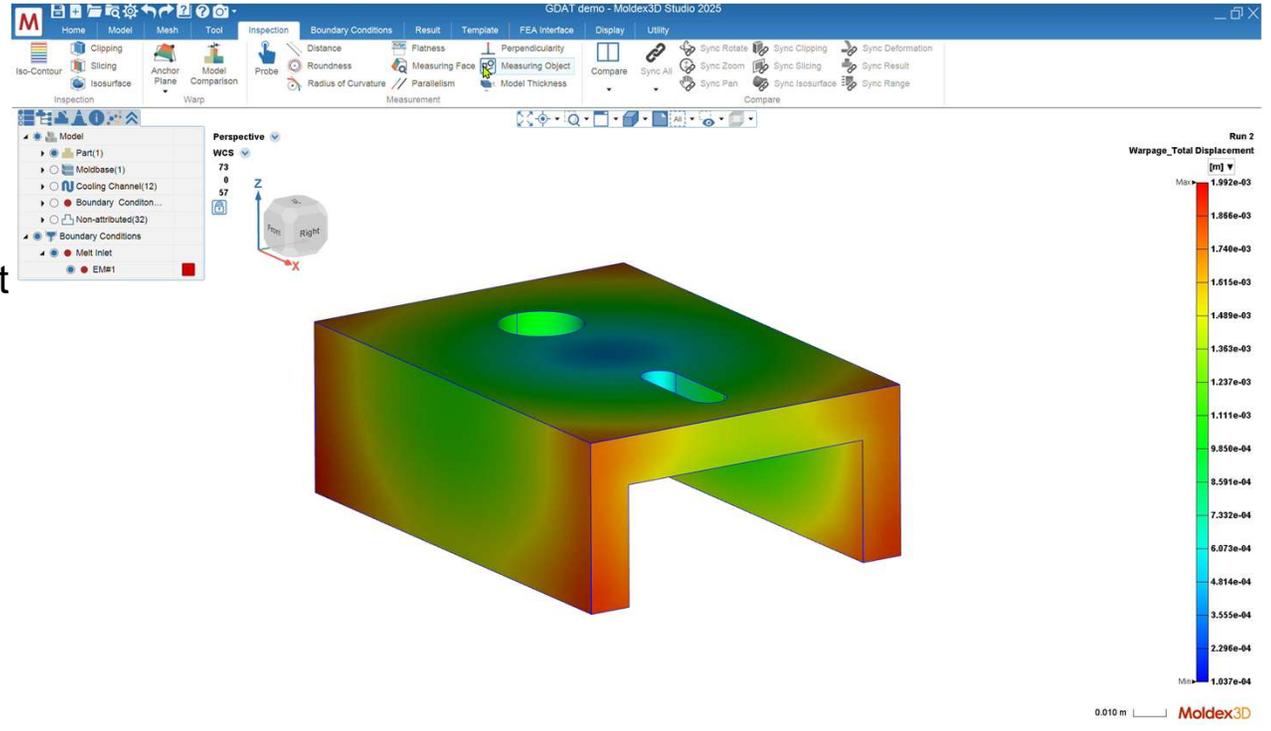
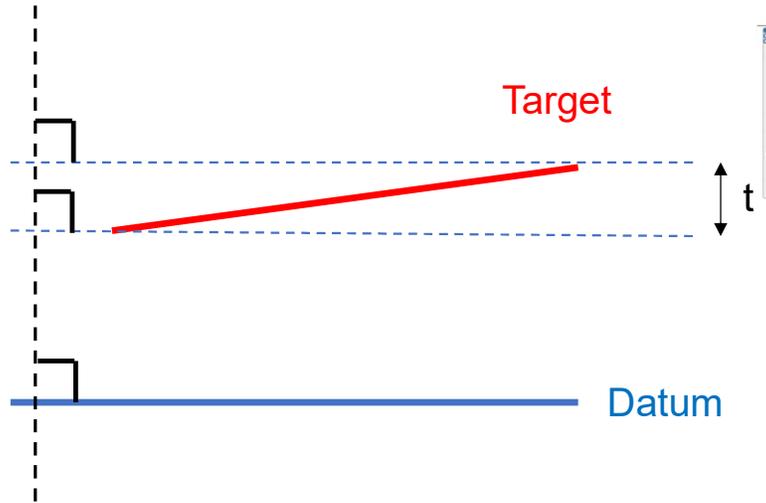
2025 NEW



Measuring Object



Parallelism

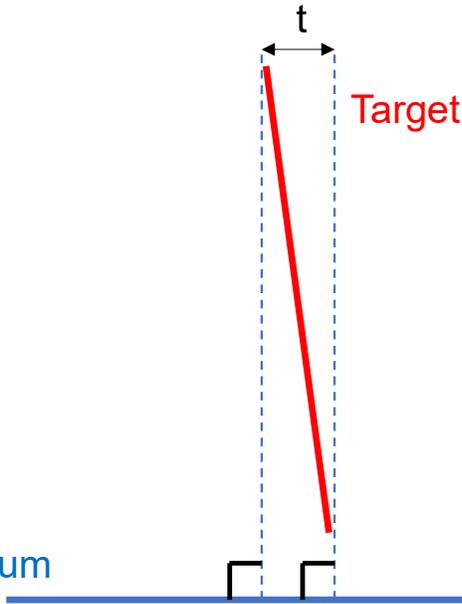




Perpendicularity

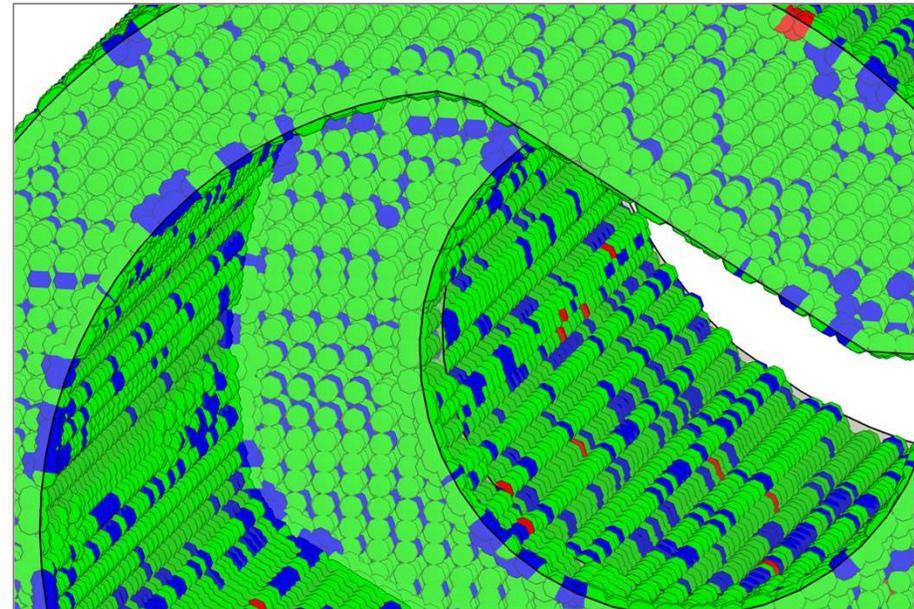
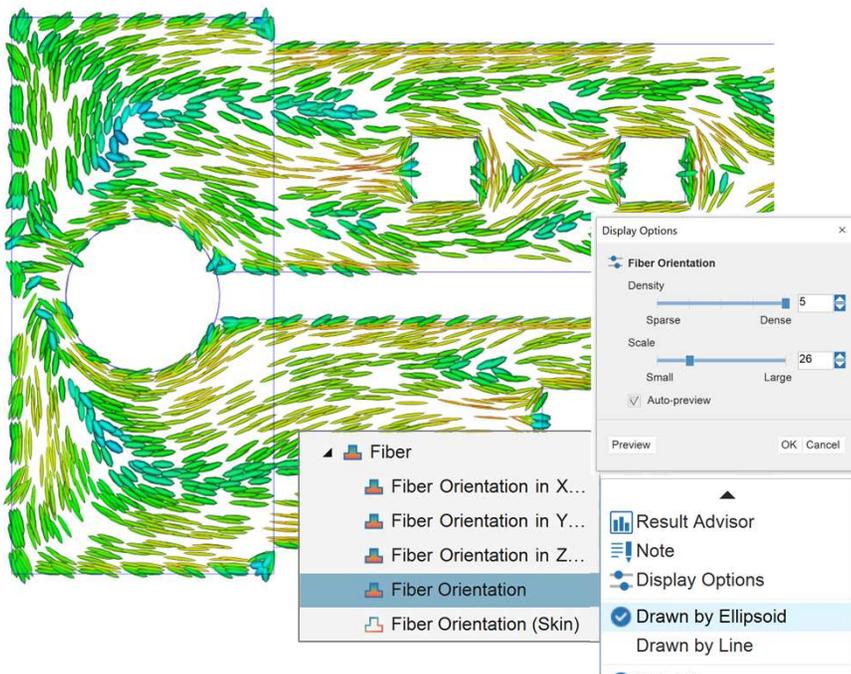


Datum

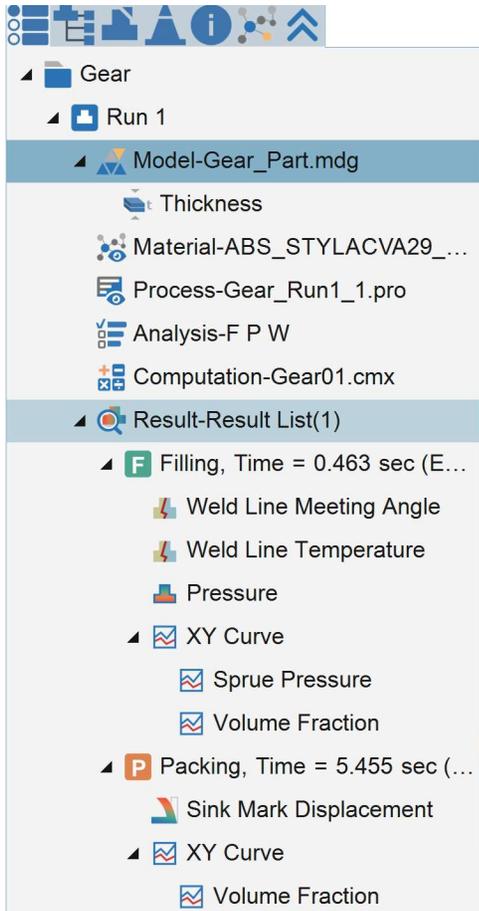


[Studio] Improve Fiber and Flake Result Display

- › New 3D display for smooth calculation and optimized performance
 - Allow fiber orientation result display with ellipsoid
 - Improve for clearer and smooth display result on flakes when they stack in 3D view
 - For new result display, it requires the computer supporting OpenGL 4.3



+ Do You Rely on a Manual Checklist to Validate Results?



Check Item	Rule	Status
Full Fill	Volume fraction > = 100%	V
Pressure Drop	<30 MPa	V
....		

+ Result Criteria – Automate Your Standard Checks!

- ◆ Define your own criteria for result interpretation.
- ◆ Instantly validate multiple results at a glance.



Category	Criterion	Expression
Filling	Weld Line Meeting Angle	Max_Result_TimeStep#VPSwitch < 135
	Weld Line Temperature	Min_Result_TimeStep#VPSwitch>Value_Material_PartMeltTemperatureMax-10
	Pressure	Max_Result-Min_Result<30
XY Curve	Sprue Pressure	Max_Result < (Value_Process_MachineMaxPressure*0.75)
	Volume Fraction	Max_Result>=100
Packing	Sink Mark Displacement	Max_Result < 0.05
	Volume Fraction	Max_Result>=100

Ignore



Run 1 Model

Pass



Fail



How to Create Result Criteria

The screenshot shows the Moldex3D Studio 2025 interface. The main window displays a 3D model of a gear with a pressure result visualization. The gear is colored blue, and a red-to-green color bar indicates pressure values from 0.000 to 31.534 MPa. The 'Result Criteria' menu is highlighted in the top ribbon. The left sidebar shows the project tree with 'Pressure' selected under 'Result-Result List(1)'. The bottom status bar shows 'Command < Result Criteria >'.

Perspective
WCS
45
0
45

General Tag

- Max_Result
- Min_Result
- Avg_Result
- SD_Result
- RangeDiff_Result

When Your Buyer Requests a Report in a Specific Format...

The image displays 18 numbered thumbnails of reports generated by Mobex software, arranged in a 3x6 grid. Each thumbnail shows a different type of data visualization or table:

- 1:** Shell_Workshop - Run 1. Includes a 3D model of a part and a table with columns for Name, Value, and Unit.
- 2:** Model Information. A table with columns for Name, Value, and Unit.
- 3:** Material. A table with columns for Property, Value, and Unit, and a line graph showing properties over time.
- 4:** Process Setting. A table with columns for Name, Value, and Unit, and a line graph showing pressure over time.
- 5:** Cold/Hot Runner Gate Coordinate. A 3D model of a gate with coordinate axes.
- 6:** Cold and Hot Runner System Diameter. A table with columns for Name, Value, and Unit.
- 7:** Thickness. A 3D model of a part with a color-coded thickness map.
- 8:** Filling. A 3D model of a part with a color-coded filling process map.
- 9:** Temperature at Melt Front. A 3D model of a part with a color-coded temperature map.
- 10:** Pressure Over Time. A line graph showing pressure over time.
- 11:** Pressure Curve Over Time at Different Positions. A line graph showing pressure curves for different positions.
- 12:** Frozen Layer. A 3D model of a part with a color-coded frozen layer map.
- 13:** Time to Reach Ejection Temperature. A 3D model of a part with a color-coded time map.
- 14:** Volumetric Shrinkage at EOP. A 3D model of a part with a color-coded shrinkage map.
- 15:** Warpage in X-Direction. A 3D model of a part with a color-coded warpage map.
- 16:** Warpage in Y-Direction. A 3D model of a part with a color-coded warpage map.
- 17:** Warpage in Z-Direction. A 3D model of a part with a color-coded warpage map.
- 18:** Summary. A table with columns for Name, Value, and Unit, and a line graph showing pressure over time.

Easily Generate Reports That Fit Buyer's Requirements

The image illustrates a workflow for generating a report in a simulation software. It is divided into three main sections:

- Left Panel (File Tree):** Shows a project structure under 'Shell_Workshop' > 'Run 1'. The 'Result F/P C/W' folder is expanded, showing various analysis results like 'Filling, Time = 5.24000 sec (EOF)', 'Melt Front Time', 'Air Trap', etc.
- Center Panel (Menu):** A context menu is open over the 'Result F/P C/W' folder. The 'Apply Verification Template' option is highlighted with a blue arrow pointing from a magnifying glass icon above it.
- Bottom Center (Dialog Box):** An 'Apply Verification Template' dialog box is shown. It contains a table of available templates:

ID	Verification Template
1	Moldex3D
2	Audi Tape

 The 'Audi Tape' template (ID 2) is selected. Below the table, the 'Project' section shows '1 Verification Template(設計案例)'. An 'Apply' button is visible at the bottom right of the dialog, with a mouse cursor pointing to it.
- Right Panel (Report Window):** A 'Report' window is open, showing a 'Setting' section. It allows the user to choose the report format:
 - Format: PowerPoint (*.pptx) or Excel (*.xlsx)
 - Template: C:\Moldex3D\2025\Template\TemplateForAudi.pptx

Export & Import: Share Your Verification Templates Effortlessly

The image displays two side-by-side screenshots of the Moldex3D software interface, illustrating the process of exporting and importing verification templates.

Left Screenshot (Gear - Moldex3D):

- File Menu:** The 'Export' option is highlighted in the 'Verification Template' dropdown.
- Verification Template List:**
 - Run 1
 - Model-Gear_Part.mdg
 - Thickness
 - Material-ABS_STYLACVA...
 - Process-Gear_Run1_1.pro
 - Analysis-F P W
 - Computation-Gear01.cmx
 - Result-Result List(設計案例)
 - Filling, Time = 0.463 sec...
 - Melt Front Time
 - Air Zone Volume
 - Air Trap
 - Weld Line
 - Weld Line Meeting An...
 - Weld Line Temperature
 - Clamping Force Centr...
 - Gate Contribution
 - Pressure
 - Temperature
 - Melt Front Temperature
 - Shear Stress
 - Peak Shear Stress

- 3D Model:** A gear model is shown in a perspective view. The WCS (World Coordinate System) is set to Perspective, with Z-axis values of 45, 0, and 45. The scale is 6.00 mm.
- Status Bar:** Writing Verification Template : X:\Works

Right Screenshot (Shell_Workshop):

- File Menu:** The 'Import' option is highlighted in the 'Verification Template' dropdown.
- Verification Template List:**
 - Shell_Workshop
 - Run 1
 - Model-Bumper.msh
 - Thickness
 - Material-PP_SABICPP576...
 - Process-Shell_2022R1_R...
 - Analysis-C F P C W
 - Computation-Shell_Works...
 - Result F P C W
 - Filling, Time = 5.240 sec...
 - Melt Front Time
 - Air Trap
 - Weld Line
 - Gate Contribution
 - Pressure
 - Melt Front Temperature
 - Mass Flow Rate
 - Shear Stress
 - Shear Rate
 - Velocity Vector
 - Volumetric Shrinkage
 - Density

- 3D Model:** A bumper model is shown in a perspective view. The WCS is set to Perspective, with Z-axis values of 45, 0, and 45. The scale is 200.00 mm.
- Status Bar:** Command < Close WIZARD >

01

Solver

02

**Pre-
processing**

03

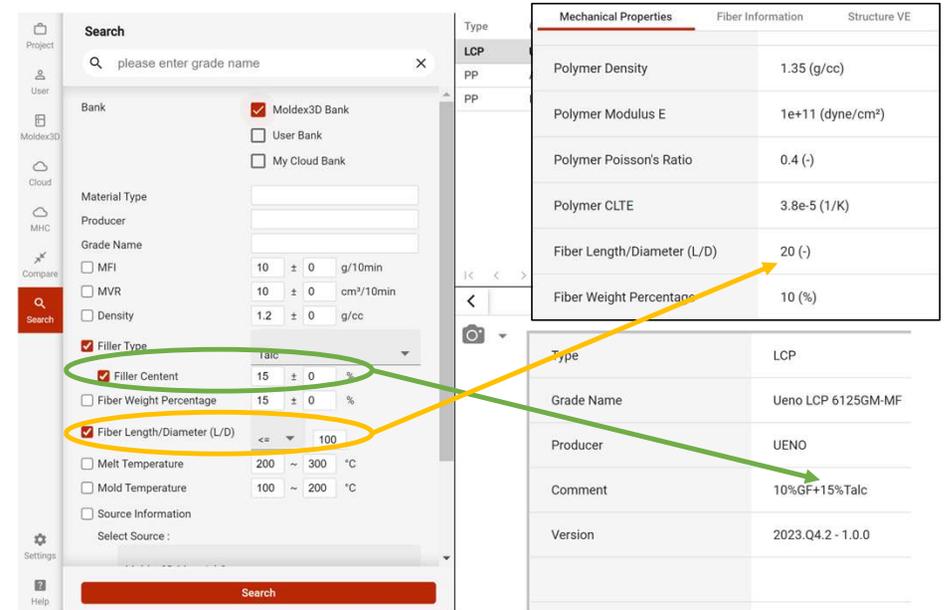
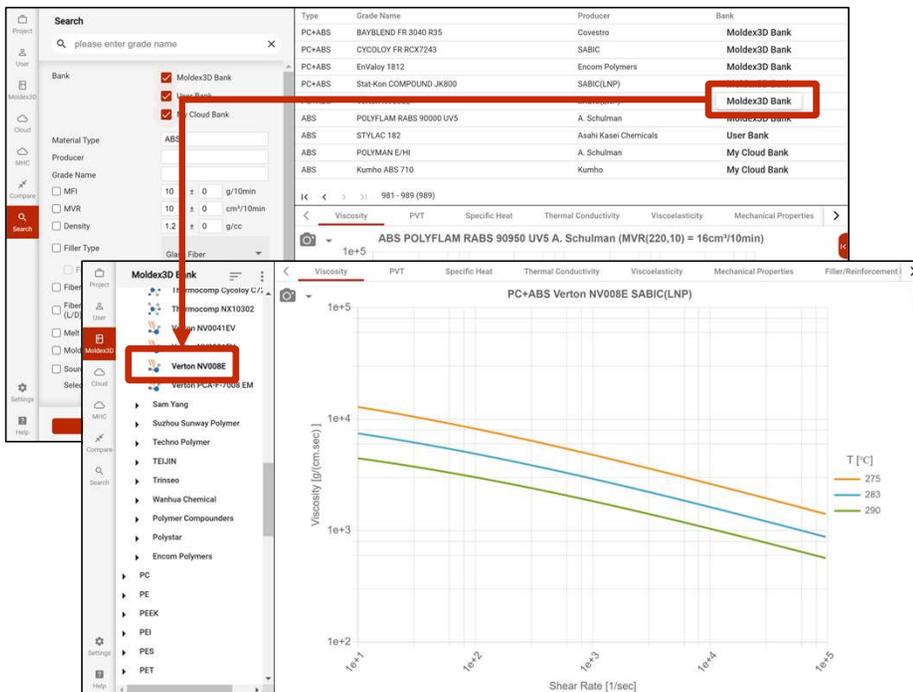
**Post-
processing**

04

**Usability
improvement**

Enhance User Experience when Navigating Materials

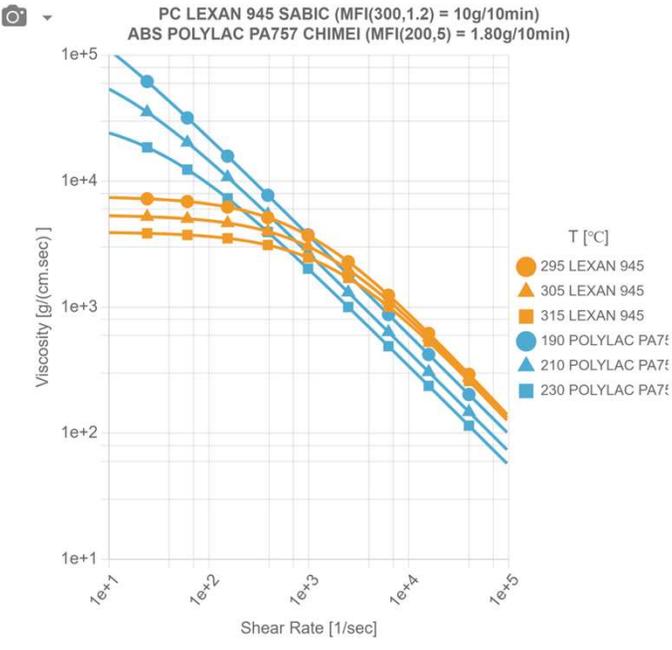
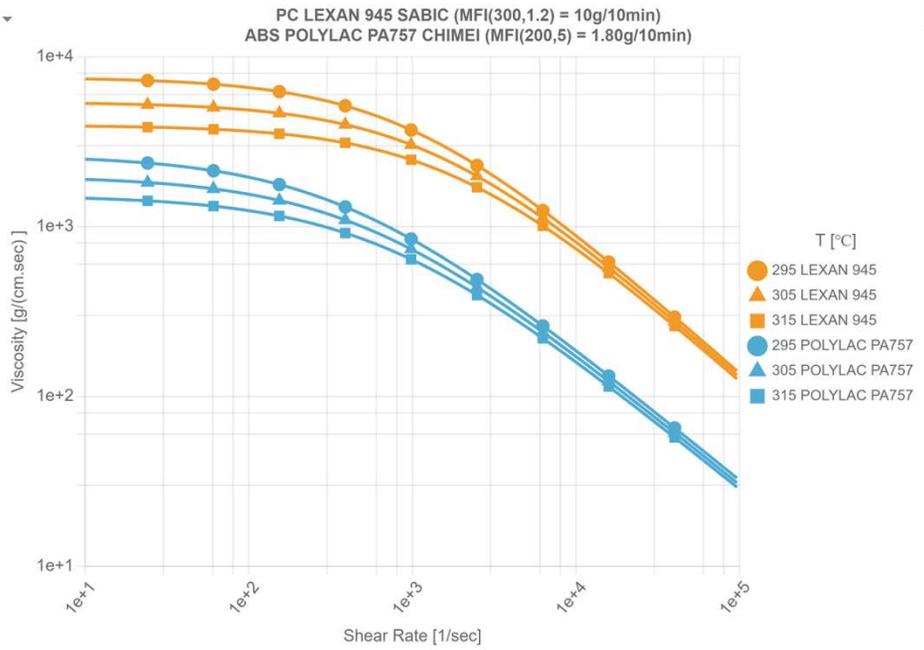
- › Allow direct navigation from search results to target bank location
- › Support searching material by different filler content and fiber L/D ratio



The temperature setting range can be asynchronous when comparing different types of materials

Before: Unified temperature setting range for all materials

After: temperature under melt temp range



Curve Setting

Viscosity vs. Shear Rate

Axis Setting

Shear Rate [1/sec]
 Minimum: 10
 Maximum: 100000

Viscosity [g/(cm.sec)]
 Minimum: 10
 Maximum: 100000

Temperature [°C]
 By Individual Material
 No.digit: 0

Other Setting

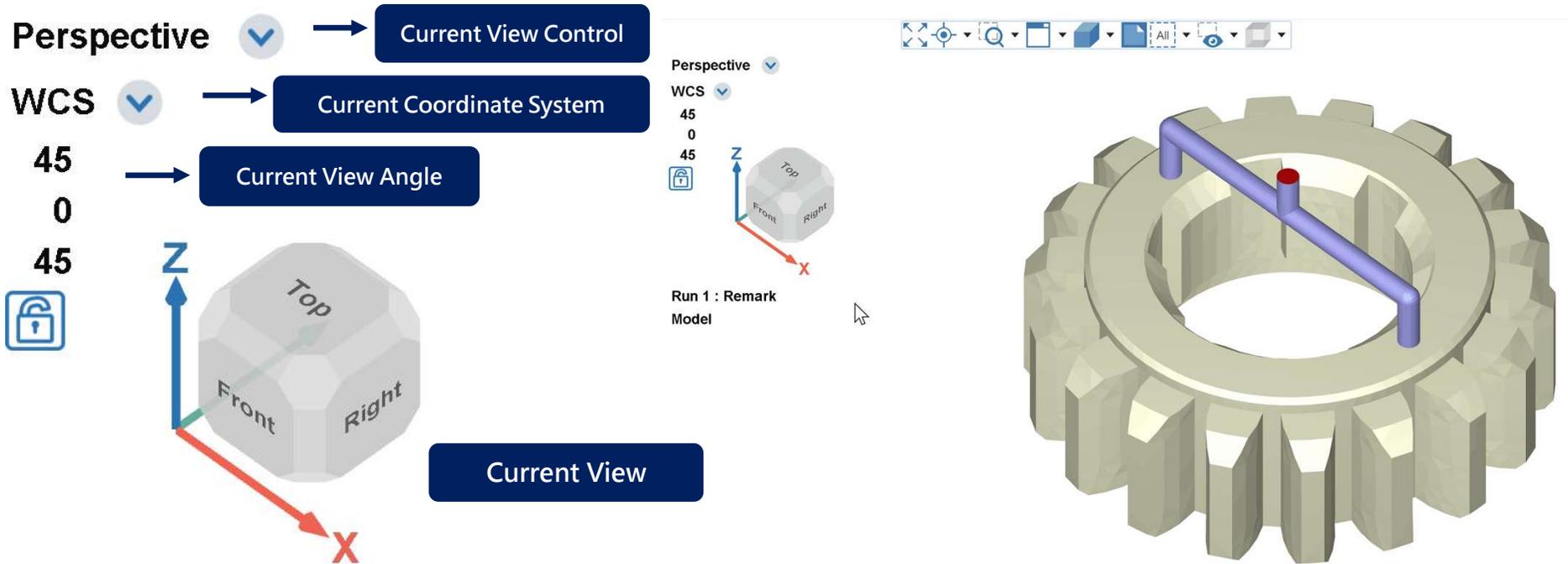
Keep Settings

Display Setting

Apply Default

+ Revamp View and Coordinate Control Functions

- > Add View Cube for smooth and interactive view control
- > Enhance view and coordinate control with new design layout





When the mouse wheel forwards in Studio, does it mean Zoom in or Zoom out?

Zoom In or Zoom Out? You Decide!

Preferences

General

File

Unit and Number

Mesh

Display

Customized

Keyboard and Mouse

Keyboard Shortcuts

View Manipulation

View Manipulation

Mouse Mapping : Studio

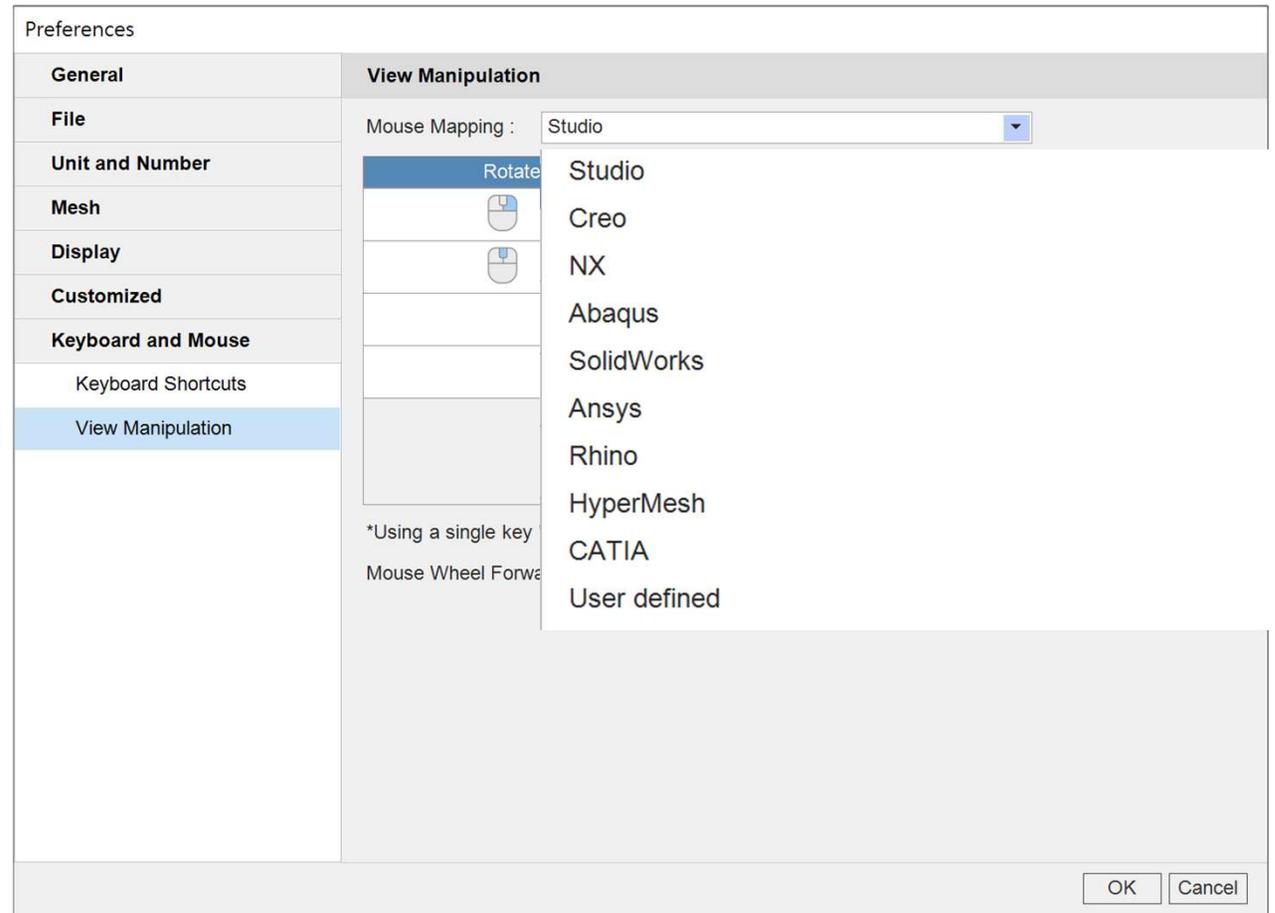
Rotate	Pan	Zoom
	 + Shift	
	 + 	 + Ctrl
	 + Shift	
	 + Ctrl	

*Using a single key "Left Mouse Button" requires selection to be disabled

Mouse Wheel Forward : Zoom In Zoom Out

OK Cancel

Rotate, Pan, Zoom - Use the Mouse Controls You Know and Love



Nothing Fits? Tailor Your Perfect Mouse Settings!

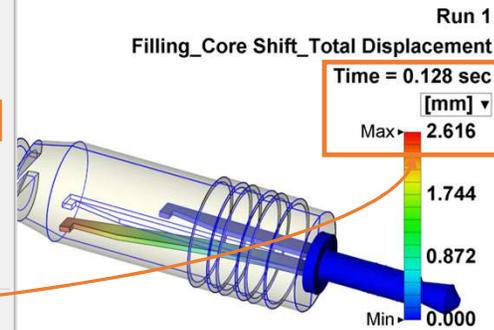
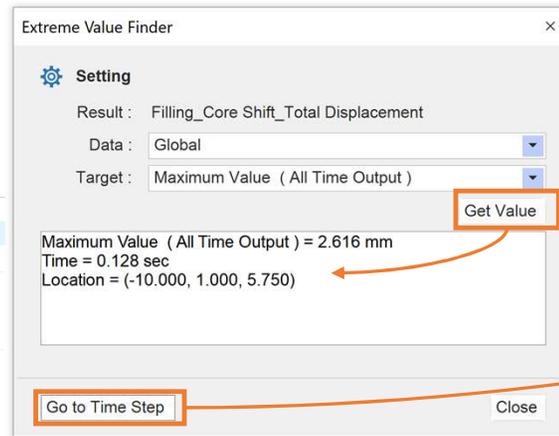
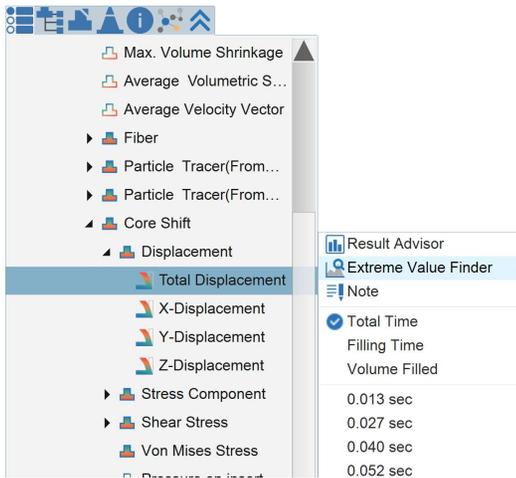
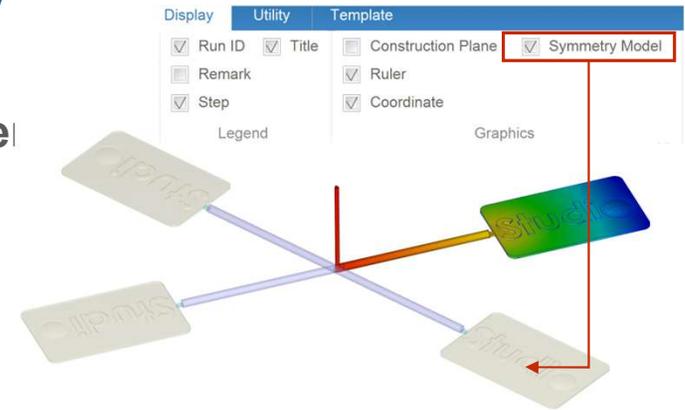
The image shows a 'Preferences' dialog box with a sidebar on the left containing categories: General, File, Unit and Number, Mesh, Display, Customized, Keyboard and Mouse, Keyboard Shortcuts, and View Manipulation. The 'View Manipulation' category is selected. The main area is titled 'View Manipulation' and shows 'Mouse Mapping : User defined' with an 'Edit' button. Below this is a table with three columns: Rotate, Pan, and Zoom. The Rotate column shows a mouse icon. The Pan column shows a mouse icon and '+ Shift'. The Zoom column shows a mouse icon. An orange arrow points from the Zoom column to a 'User Defined' dialog box. This dialog box has sections for Rotate, Pan, and Zoom, each with a list of key combinations and a trash icon. The Rotate section has 'Right Button + Unused + Unused' and 'Left Button + Ctrl + Unused'. The Pan section has 'Right Button + Shift + Unused'. The Zoom section has 'Mouse Wheel + Unused + Unused'. There are 'Add New Key' buttons for each section and 'OK' and 'Cancel' buttons at the bottom.

Action	Key 1	Key 2	Key 3
Rotate	Right Button	Unused	Unused
Rotate	Left Button	Ctrl	Unused
Pan	Right Button	Shift	Unused
Zoom	Mouse Wheel	Unused	Unused

Enhance Result Display for More User Settings

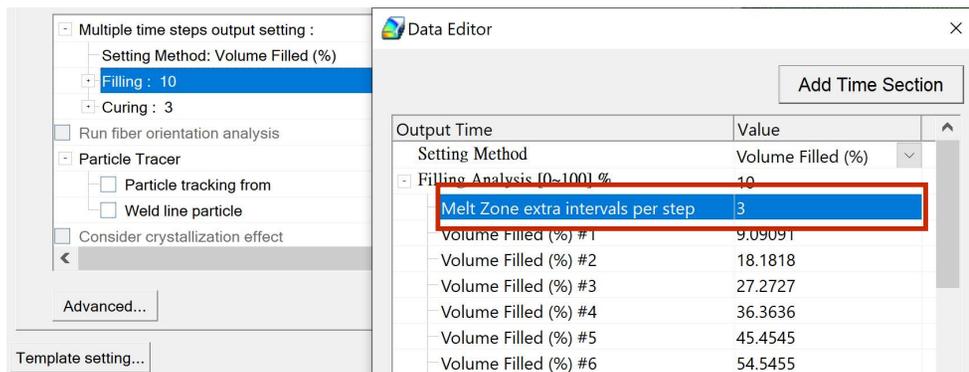
- > Provide option in Display tab to enable/disable symmetry display
 - Support symmetry setting in result and report display

- > Add Extreme Value Finder to target critical phenomena
 - Find specific value from result statics and show its time and location

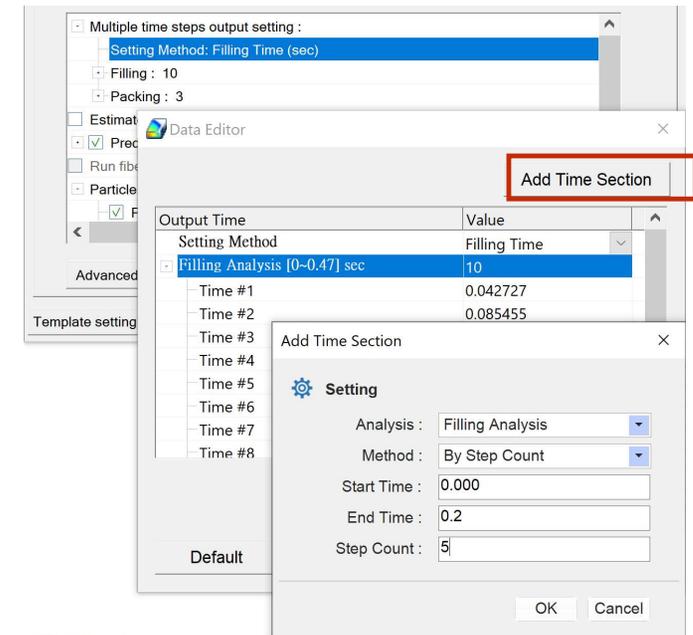


+ [Computation Parameter] Allow Customized Time Step Refine

- ✓ No need for manual calculations or Excel
- ✓ Options for dividing by step count or step size
- ✓ Support setting with volume filled (%)
- ✓ Easy to focus on what matters, even during Extend Packing



Support time section: Filling, packing/curing, foaming, cooling, opening, post mold cure, wire-sweep



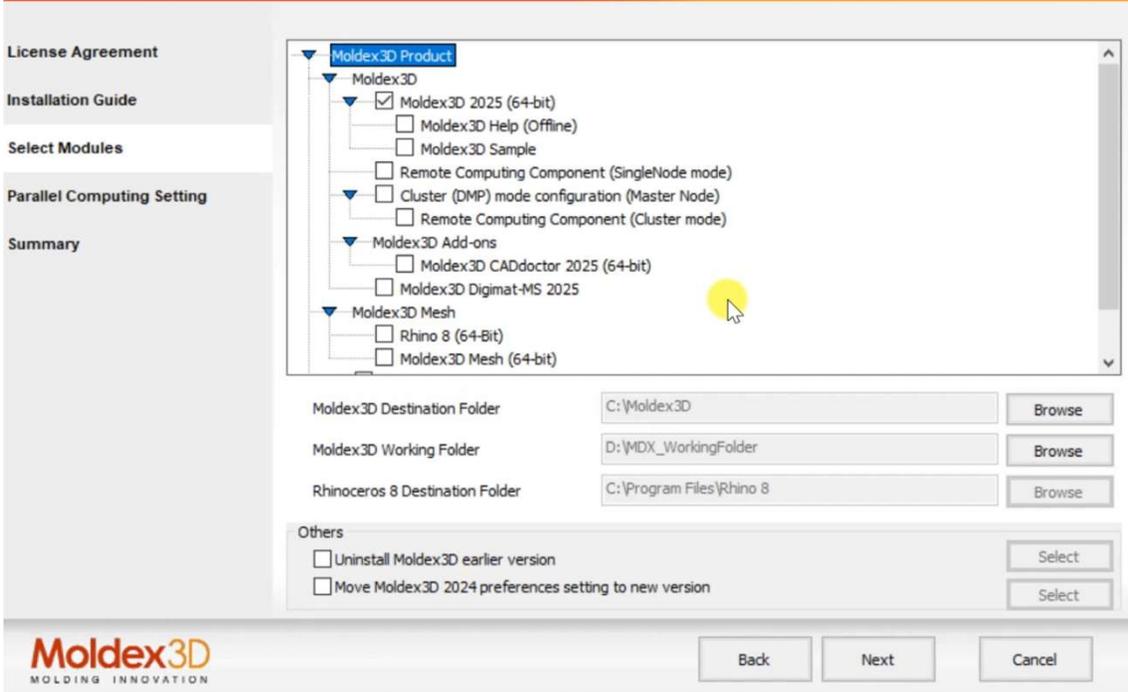


Moldex3D Studio

Lightweight



+  **Seamless upgrade**

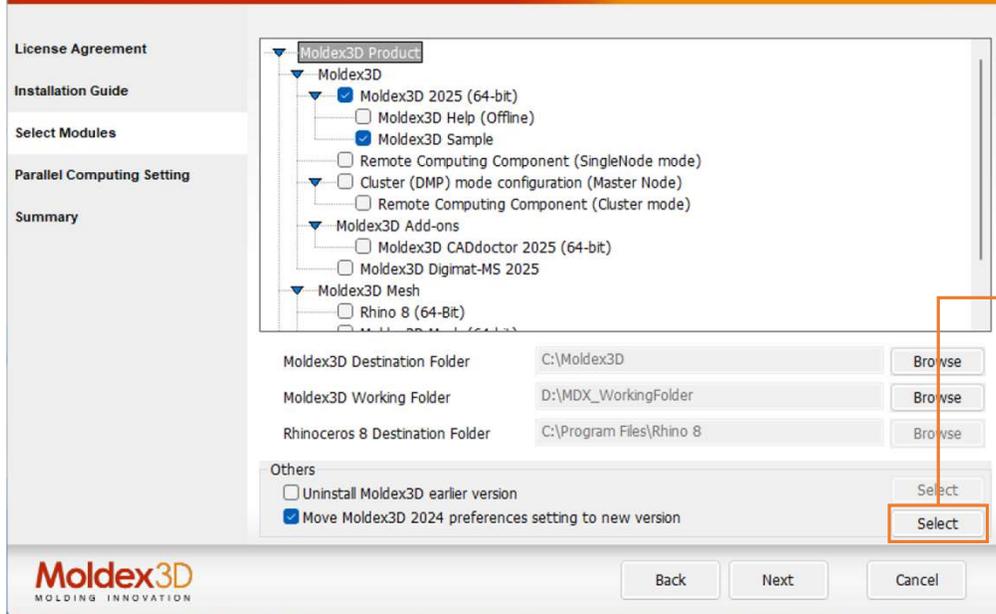


Installing Studio 2025?
It automatically removes
old versions to free up
space!





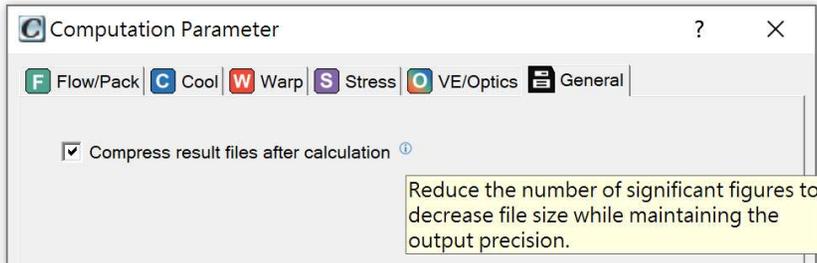
Smooth transition



Your custom settings from 2024?
They come with you—no extra
setup needed!

- ✓ Preferences of Studio, Material Wizard, and Process Wizard
- ✓ Material User Bank
- ✓ Machine User Bank

Smaller Files, Bigger Savings

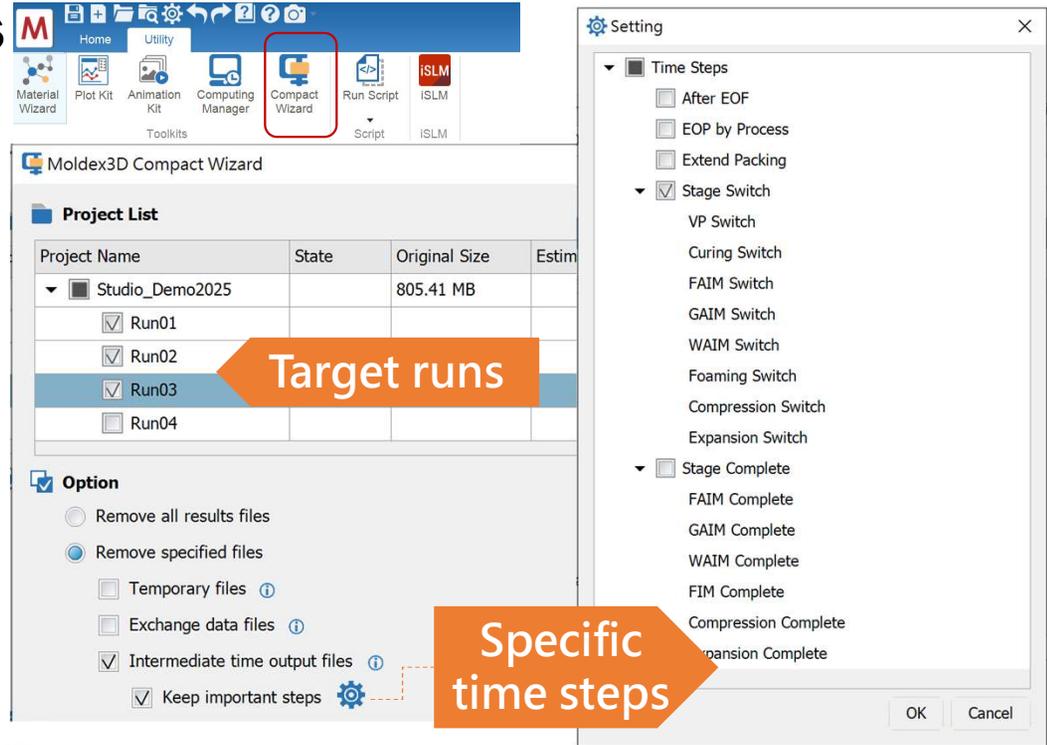


Run Folder

Reduce size by 2-5x



Run Folder



1 Adjust output precision to reduce result file size.



2 Selectively retain essential project data.

Thank you

