

# What's new 2025 – Parte 1

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# Outline







# [Flow] Include the machine's clamping force limit in the calculation

Adjust the inlet speed/pressure conditions based on the clamping force limit when the injection pressure and speed reach the upper limit.

- This approach enables a more accurate simulation of various injection phenomena





## [Cool] Support Thermal Pin in Cooling Simulation

- > Set attribute to Thermal Pin and set its material and condition in Process Wizard
  - Thermal pin is a cooling component for place not allowing baffle/bubbler and inducing its heat to regular cooling channels



#### Moulding Innovation mid Inno Day

64.000

52,000

# $^+$ [Warp] Output Crystallinity Result in Enhanced Warp and Annealing Analysis

- > Enable crystallinity checking through all post mold process
  - More clear effect of crystallinity to warpage and annealing stages can be observed
  - Annealing analysis can continue with Crystallinity result



Relative crystallinity evolution through time



# <sup>+</sup> [CM] Improve CM Setting Workflow of Process Condition

- > Cooling time now is embedded in compressing time setting
  - More flexible on control start and end of compressing and cooling

🚟 Moldex3D Process Wizard			? ×				
Project Settings Compress	ion Cooling Summary						1
	Compression Settings Compression time : 5	sec	Ĩ	Compressio	on time	Mold-open	time
	Direction : Stroke1 (0.00,0.00,-1.00)	~		Start of cycle			End of cycle
A.	Compression gap : 10	mm					
That .	Maximum compression speed : 10	mm/se	ec.				
1 Alter	Compression Speed Profile			Before Compression		After Compression	
Canta	Maximum compression force : 123 tf Compression Force Profile						
	Melt Temperature 205	oC					
	Mold Temperature 50	oC			,		
		Advanced Set	tina	Compression Zone		Movable Plate	
<u>Capture</u> Settings	Help	Save	Cancel	Part		Fixed Plate	



# <sup>+</sup>[CM] Enhance CM Modeling Preprocessing Tools

- Add Auto Diffusion in compression region setting advanced from angle diffusion
  - Better and automatic face selection
- Keep matching face between Runner and Compression Zone during mesh generation:
  - Automatically match mesh between compression zone and geometry runner
  - Support all mesh type in CM Zone (Tetra/BLM/Prism)

Polysurface I

 Improve mesh generation for prism type compression zone modeling



![](_page_7_Picture_9.jpeg)

![](_page_7_Picture_10.jpeg)

![](_page_7_Picture_11.jpeg)

![](_page_7_Picture_12.jpeg)

![](_page_8_Picture_0.jpeg)

# <sup>+</sup>[Optics] Support Analysis Result Output to Zemax

- > Study the impact from molding process on polarization, image quality, and straylight.
  - Export molding stress, refractive index, and deformed shape
  - Correct Optics BC and Direction of Propagation are required

Computation Parameter ? X	🜌 Optics Interfacing Function Option	×		
FlowPack ( Cool ( Warp ) Stress ( VE/Optics ( Caneral)         Residual stress options         I Estimate in filling packing stage         Estimate in cooling stage         Estimate Optics Properties         Direction of propagations :         I 0.00 0.00 - 1.00         Add         Set to current view         Objection pointscope set-up :         Gank field         Type of circular polariscope set-up :         Gank field         Model rotation angle:         Upt source type :         Moncehromatic light with wave length :         590       (m)         Template setting         OK       Cancel	Optical software: Zemax Uutput surface: Surface1 Uutput items Output items Options Refractive index distribution Molding Stress Function description : Uutput the nodal deformation of the selected surface. Output to : C:\temp\optics\OpticsBCStudio25\Report\Run02	© Settings	n Viewer 2	Retardance (OPD) 2055071-0 2055619-0 2055619-0 2055619-0 2055619-0 -135501-0 -135
> Acer (C:) > temp > optics > OpticsBCStudio25 > Report > Run02				
名稱	修改日期    類型	大小		
OpticsBCStudio25_NodalDeformedShape_Surface1.txt	2025/1/2下午 03:26 文字文件	622 KB		
OpticsBCStudio25_NodalRefractiveindex_Surface1.txt	2025/1/2 下午 03:26 文字文件	6,353 KB		
OpticsBCStudio25 NodalResidualStress Surface1.txt	2025/1/2 下午 03:26 文字文件	15,024 KB		

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# Meet the AI Optimization Wizard – Smarter, Faster Optimization

			DOE	Wizard	1			AI Optimization	Wizard	AI
Design of Experiment					t	Optimization Method		Iterative Approacl	٦	
Single/Multiple Object				t	Optimization Scope		Single/Multiple Object			
	Discrete Level (Level)				)	Control Factor Range setting		Continuous Rang	e (Min/Max)	
Controlled by Taguchi Orthogonal Array				 /	Number of Experiments		Controlled by Maximum Iterations			
🔅 Method						🄯 Ana	lysis Setting			
	Levels: 4 (2	2~5 or mixed level)						Solver Parameter: Maximum Iterations	20	
	Method Levels: 4					-	🔅 Factors			
🔅 Fac	tors	e i coloro mar 4 col					#	Control Factor	Min	Max
#	Control Factor	Level 1	Level 2	Level 3	Level 4		1	Melt Temperature [°C]	210	235
1	Melt Temperature [°C]	210	218	226	235		2	Mold Temperature [°C]	55	65
2	Mold Temperature [°C]	55	58	62	65		3	Flow Rate Profile Value (Section 2) [%]	65	75
3	Flow Rate Profile Value (Section 2) [%]	65	68	72	75					

![](_page_10_Picture_0.jpeg)

# Meet the AI Optimization Wizard – Smarter, Faster Optimization

![](_page_10_Figure_2.jpeg)

Narrow down the effective factor range

Moldex3D

![](_page_10_Figure_4.jpeg)

![](_page_11_Figure_0.jpeg)

Moulding Innovation

![](_page_12_Picture_0.jpeg)

# <sup>+</sup> [IC] Add Wire Debonding Index Result

- > Allow different threshold setting for different wire material
  - Control color bar to show/hide and check the wires with the most risk

![](_page_12_Figure_4.jpeg)

![](_page_13_Picture_0.jpeg)

# [IC] Add Wire Debonding Index Result

> Result to evaluate the risk level to get debonding from the stress applied on wires

![](_page_13_Figure_3.jpeg)

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**Import Model** 

Edit Face

500-01 splitting plane (s) : 2750 K sin a plane (s) remove #2 12 100, 2.700, 17 000 🛞 🛞

Inner

## [IC] [Mesh] Enhance Meshing Workflow for Auto-hybrid IC Model

Components

- > New Meshing Workflow from 3D Component
  - Pre-processing tools for Auto Hybrid
  - Process multiple components together
  - Real time viewer to check mesh layout —

**Split Objects** 

Split XYZ and Edit Face Inner to

divide component on Z-plane

- Quick removing small gaps

Split XYZ

![](_page_14_Figure_7.jpeg)

![](_page_15_Picture_0.jpeg)

![](_page_15_Figure_1.jpeg)

![](_page_16_Picture_0.jpeg)

### [Mesh] Supports Moldex3D Mesh on Rhino8

- Use Moldex3D and Rhino functions for model preparation on Rhino 8 platform

![](_page_16_Figure_3.jpeg)

![](_page_17_Picture_0.jpeg)

If we have a complicated geometry of cooling system.....

![](_page_17_Picture_2.jpeg)

## **mid** Moulding + [Wizard] Enhance Modeling Tools for Fast and Convenient Pre-processing

![](_page_18_Figure_1.jpeg)

# Moulding Innovation + Connect Channel Curve

▅▅▋▋▆▅ゐ᠅ヽ┍▘▋᠐@੶	Connect Curve Demo - Moldex3D Studio 2025	_ @ X
M Home Model Mesh Tool Inspection Boundary Conditions Template Fi	EA Interface Display Utility	
💼 🕂 🔚 🌊 Join Curve 🎣 Central Line 🔤 🛵 💁 🗙 Split	🚯 Move Curve End 🙎 Check Curve 🔤 📝 🏂 Grow 🕼 Tetrahedron 🗗 Hexahed	iron 🌠 Bad 🗈 👘
Point Rectangle Box X Explode Curve L Connect Channel Curve More More Linion X Trim	Merge Curve End Serve Overlap More Chisel - Shrink A Pyramid	Extract Export
Exter	nd 🥜 Align Curve End 🔁 Set XYZ	Surface Mesh Selected
Create	Edit Chisel	Export
Curve 233		Run 2
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Command < Extract Tubular Polysurface Center Line >	II www.apowersoft.tw is sharing your screen. Stop sharing Hide	2 🗈 🎍 👭 🔣 🗖 🚚 🔻

![](_page_20_Picture_0.jpeg)

# **Cooling** Channel Modeling Workflow

![](_page_20_Figure_2.jpeg)

# + Cooling channel loop wizard

	ar + Loop Wizard Demo - Moldex3D Studio 2025	ыX
M Home Model Mesh To		
Import Geometry Import and Analysis	Image: Specify Point in Path Length Gate     Path Length Moldbase     Image: Specify Point in Path Length Moldbase     Image: Specify Point in Path Length Loop Wizard     Image: Specify Point in Path Length Moldbase     Image: Specify Point in Path Length Loop Wizard     Image: Specify Point Loop Wizard <th></th>	
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▶ O 📥 Part(1)	N	Nodel
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Central Line Group 3		
Central Line Group 4		
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Command < Result Advisor >		+

![](_page_22_Picture_0.jpeg)

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# Mesh Enhance Auto Copy/Paste Performance for MCM Modeling

- > New UI provided to optimize Copy/Paste result
  - Improve stitch function
  - Improve contact face result
  - Provide contact face display and editing
  - Provide warning for incorrect contact faces

![](_page_23_Figure_7.jpeg)

X

Auto Copy and Paste

Select

![](_page_24_Picture_0.jpeg)

# Auto Copy / Paste Performance for MCM Modeling

![](_page_24_Figure_2.jpeg)

![](_page_25_Picture_0.jpeg)

## [Mesh] Enhance Seeding Display

> Different color on edge for different status seeding setting

![](_page_25_Figure_3.jpeg)

![](_page_26_Picture_0.jpeg)

# [Mesh] Add More Tools to Modify and Improve Surface Mesh Models

- > Add Fix Sharp Angle function
  - Fix all sharp angle surface meshes at once with user specified shift ratio

![](_page_26_Picture_4.jpeg)

- > Add Stitch T-connection function
  - Rebuild mesh to enable quick shell mesh preparation such for rib structure

![](_page_26_Picture_7.jpeg)

![](_page_26_Picture_8.jpeg)

![](_page_26_Picture_9.jpeg)

![](_page_26_Picture_10.jpeg)

# Thank you