

公式工具

The screenshot displays the Coating Design Tutorial22 software interface. The top menu bar includes File, Start, Catalogs, Analysis, Tools, and Additional Tools. The Tools ribbon contains icons for Repeat Appending of..., Formula, Layer Replacement, Global Edit, Scale Thickness, Replace Material, Symmetrical Period, Herpin, Thin Layer Removal, and Optimization. A tooltip for the Formula icon explains: "Create or edit designs using shorthand notation and manage the definition of the symbols used."

The Formula [Coating Design Tutorial22] window shows a table of materials and a formula field. The table is as follows:

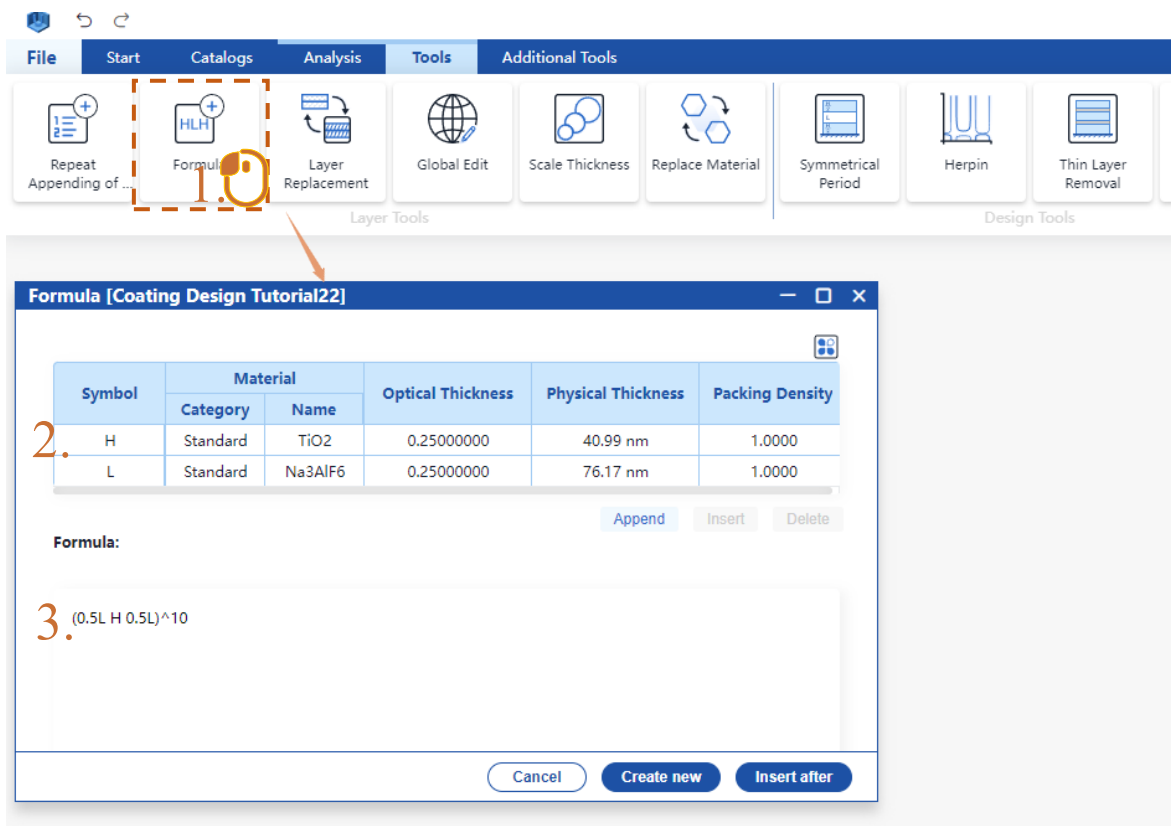
Symbol	Category	Material Name	Optical Thickness	Physical Thickness	Packing Density
H	Standard	TiO2	0.25000000	40.99 nm	1.0000
L	Standard	Na3AlF6	0.25000000	76.17 nm	1.0000

The Formula field contains: (0.5L H 0.5L)*10

The Coating Design Tutorial22 Layer Design window shows system configuration and a layer table. System Configuration includes Reference Wavelength (nm) = 411.320 and Match Angle (deg) = 0. Homogeneous Background Medium: Incident Medium: Air; Substrate: Glass.

Layer	Category	Material Name	Refractive Index	Extinction Coefficient	Optical Thickness	Physical Thickness	Lock	Group
1	Standard	TiO2	2.50894	0.00200	0.12500000	20.49 nm	No	
2	Standard	Na3A...	1.35000	0.00000	0.25000000	76.17 nm	No	
3	Standard	TiO2	2.50894	0.00200	0.25000000	40.99 nm	No	
4	Standard	Na3A...	1.35000	0.00000	0.25000000	76.17 nm	No	
5	Standard	TiO2	2.50894	0.00200	0.25000000	40.99 nm	No	
6	Standard	Na3A...	1.35000	0.00000	0.25000000	76.17 nm	No	
7	Standard	TiO2	2.50894	0.00200	0.25000000	40.99 nm	No	
8	Standard	Na3A...	1.35000	0.00000	0.25000000	76.17 nm	No	
9	Standard	TiO2	2.50894	0.00200	0.25000000	40.99 nm	No	
10	Standard	Na3A...	1.35000	0.00000	0.25000000	76.17 nm	No	
11	Standard	TiO2	2.50894	0.00200	0.25000000	40.99 nm	No	
12	Standard	Na3A...	1.35000	0.00000	0.25000000	76.17 nm	No	

在光学薄膜设计中，业界普遍采用符号方式来表示不同的膜层材料，以便更简洁、清晰地描述膜系结构。本案例展示了如何借助软件中的公式工具，使用符号生成并编辑具有规律性的膜层结构，从而显著提升设计效率。



1. 在工具选项卡中点击Formula打开公式工具。
2. 通过列表方式明确每一层膜的符号、对应的材料类型及其厚度等参数，用于构建完整的膜系结构。
3. 根据上方列表中定义的膜层符号，在下方输入框中填写膜系结构的公式表达式。公式的具体规则见说明书相应章节。

Formula [Coating Design Tutorial22]

Symbol	Material		Optical Thickness	Physical Thickness	Packing Density
	Category	Name			
H	Standard	TiO2	0.25000000	40.99 nm	1.0000
L	Standard	Na3AlF6	0.25000000	76.17 nm	1.0000

Append Insert Delete

Formula:

(0.5H L 0.5H)^5

Set as a common formula Generate

Cancel **Create new** Insert after



Coating Design Tutorial22

Layer Design Project Merit Function Version

Import from Catalog Load to Catalog

System Configuration >

Reference Wavelength (nm) 411.320

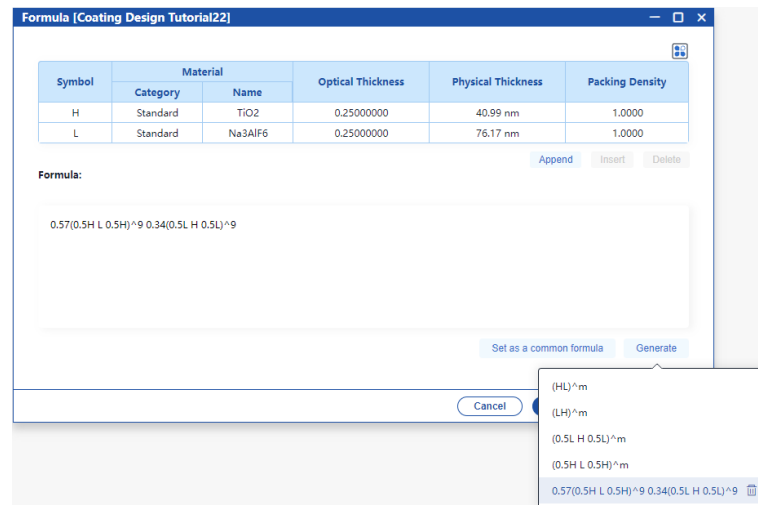
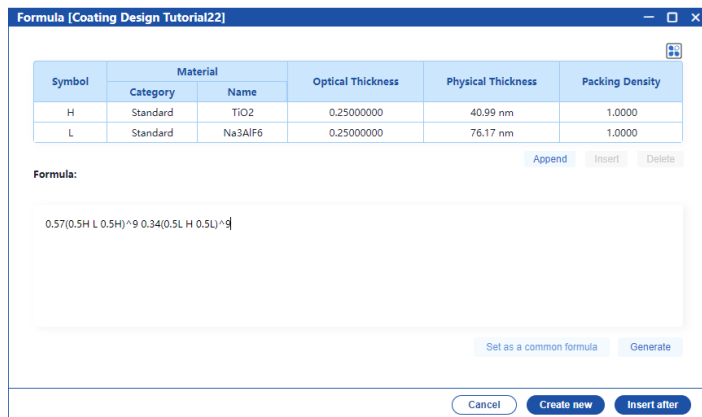
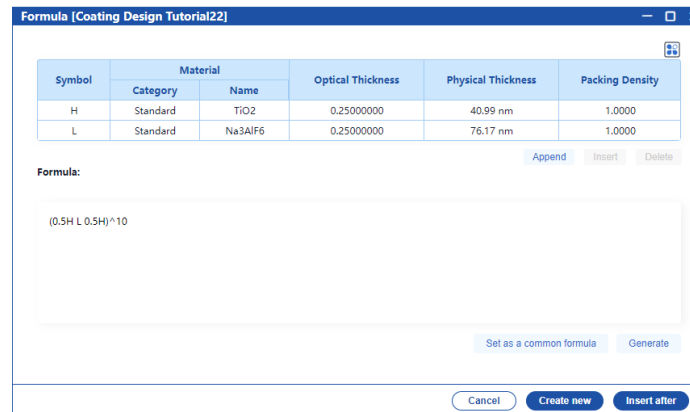
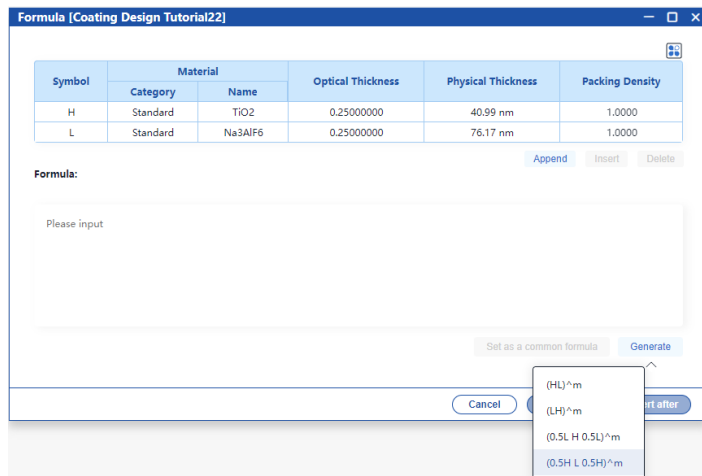
Match Angle (deg) 0

Homogeneous Background Medium: Incident Medium: Air Substrate: Glass

Layer	Material		Refractive Index	Extinction Coefficient	Optical Thickness	Physical Thickness	Lock	Group
	Category	Name						
1	Standard	TiO2	2.50894	0.00200	0.12500000	20.49 nm	No	
2	Standard	Na3A...	1.35000	0.00000	0.25000000	76.17 nm	No	
3	Standard	TiO2	2.50894	0.00200	0.25000000	40.99 nm	No	
4	Standard	Na3A...	1.35000	0.00000	0.25000000	76.17 nm	No	
5	Standard	TiO2	2.50894	0.00200	0.25000000	40.99 nm	No	
6	Standard	Na3A...	1.35000	0.00000	0.25000000	76.17 nm	No	
7	Standard	TiO2	2.50894	0.00200	0.25000000	40.99 nm	No	
8	Standard	Na3A...	1.35000	0.00000	0.25000000	76.17 nm	No	
9	Standard	TiO2	2.50894	0.00200	0.25000000	40.99 nm	No	
10	Standard	Na3A...	1.35000	0.00000	0.25000000	76.17 nm	No	
11	Standard	TiO2	2.50894	0.00200	0.12500000	20.49 nm	No	

Append Insert Delete Copy Layer Tools Lock Group

- 在输入公式后，点击“Create New”可使用公式生成的膜系结构覆盖项目中现有的膜系；若点击“Insert After”，则会将生成的膜系插入至当前结构之后，实现结构扩展。



为提高膜系结构的构建效率，软件提供以下功能：

1. “Generate”：点击该按钮，可将公式模板直接插入至公式输入框，目前内置四个常用结构。
2. “Set as a Common Formula”：可将当前输入框中的公式保存至模板列表，方便后续重复调用与编辑。

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分类	操作指南

包罗万象

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