

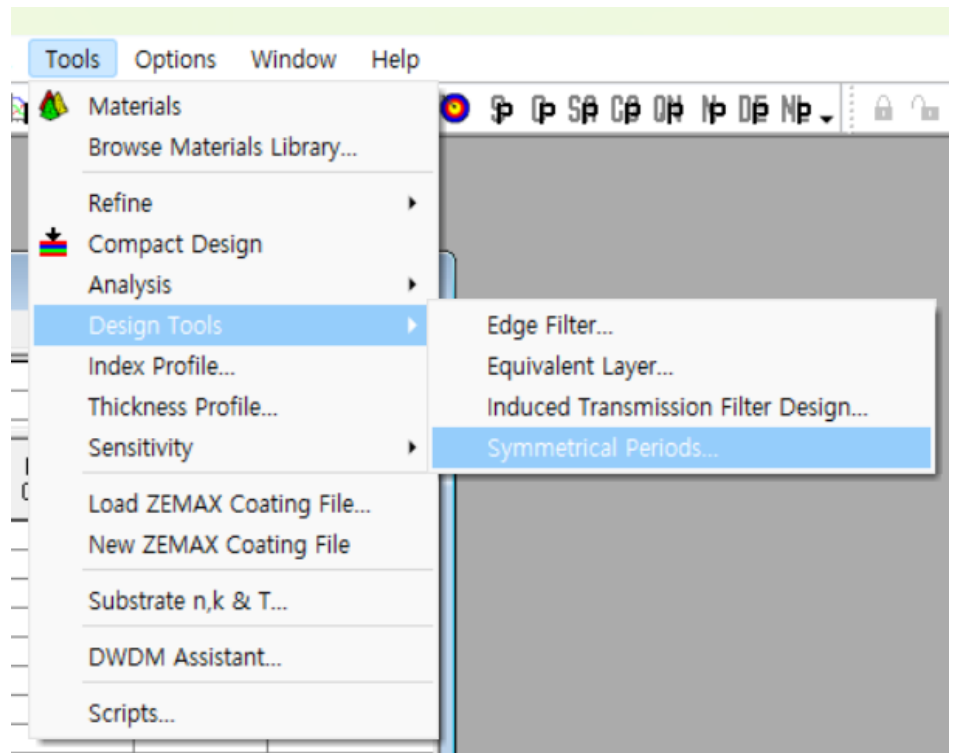
Symmetrical Periods

Layer	Material	Refractive Index	Extinction Coefficient	Optical Thickness (FWOT)	Physical Thickness (nm)
Medium	Air	1.00000	0.00000		
1	Ta2O5	2.14455	0.00000	0.12500000	29.73
2	SiO2	1.45180	0.00000	0.25000000	87.22
3	Ta2O5	2.14455	0.00000	0.12500000	29.73
Substrate	N-BK7	1.52077	0.00000		
				0.50000000	146.67

3 layer symmetrical period design

광학 코팅에 가장 일반적으로 채택되는 성능 계산 기술은 각 층을 2x2 행렬로 표현하는데, 그 형태는 방정식(1)에 나와 있으며, 층의 위상 두께와 특성 어드미턴스라는 두 개의 독립 변수만 있습니다.

$$\begin{bmatrix} \cos \delta & \frac{i \sin \delta}{y} \\ iy \sin \delta & \cos \delta \end{bmatrix}$$



Symmetrical Period Design

Reference Wavelength (nm)

Equivalent Admittance

Equivalent Optical Thickness

Inner Material

Outer Material

Make Symmetrical Period

Close

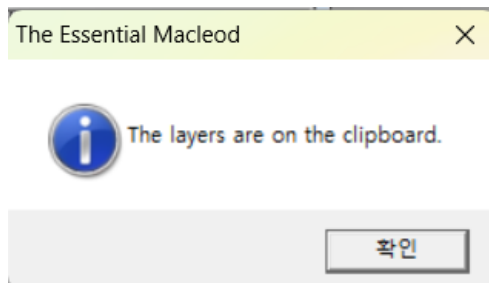
Results

Outer Thickness	InnerThickness
0.071344	0.101794
0.071344	0.101794

Double-click on row to copy layers to clipboard

Inner : 가운데 물질
Outer : 바깥 물질
설정 후 >Make,,, 클릭

Results
한 열의 값을 더블 클릭



Clipboard에 복사됨

sysperiod

Design | Context | Notes

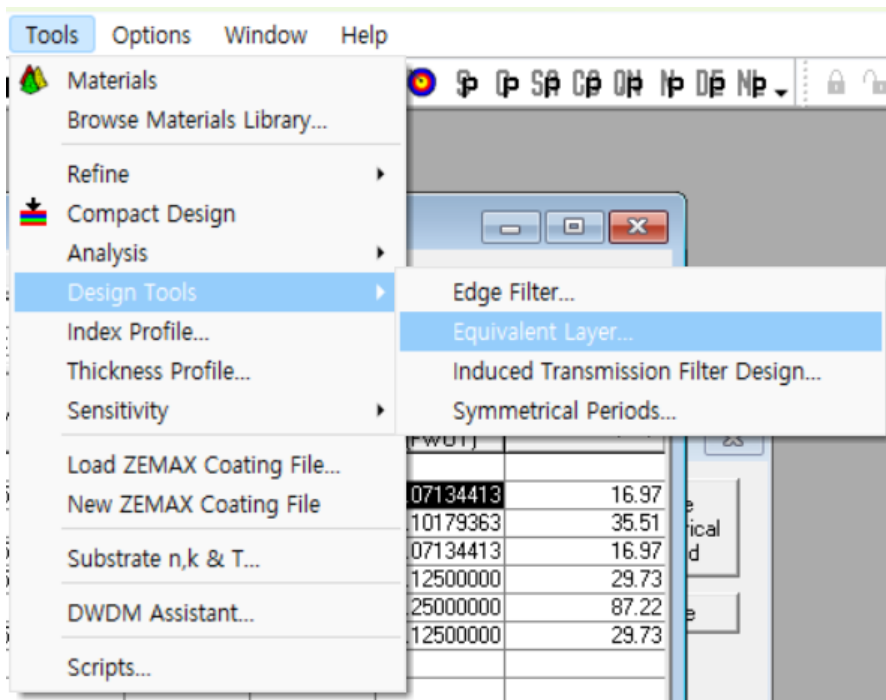
Incident Angle (deg) 0.00

Reference Wavelength (nm) 510.00

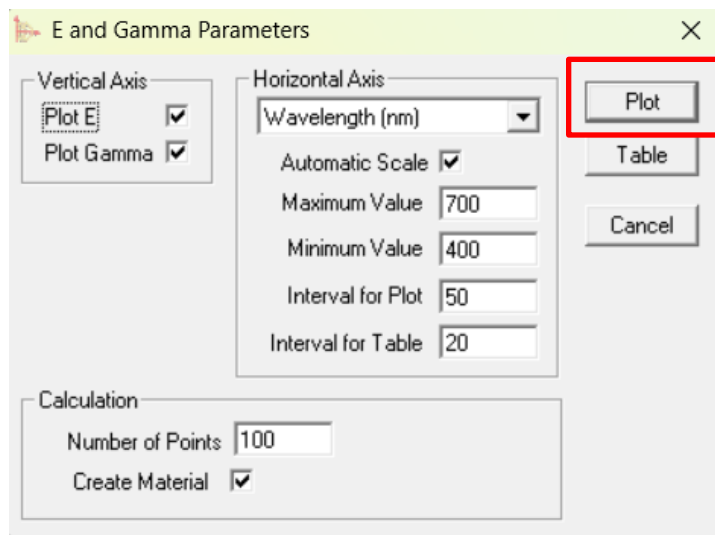
Layer	Material	Refractive Index	Extinction Coefficient	Optical Thickness (FWOT)	Physical Thickness (nm)
Medium	Air	1.00000	0.00000		
1	Ta2O5	2.14455	0.00000	0.07134413	16.97
2	SiO2	1.46180	0.00000	0.10179363	35.51
3	Ta2O5	2.14455	0.00000	0.07134413	16.97
4	Ta2O5	2.14455	0.00000	0.12500000	29.73
5	SiO2	1.46180	0.00000	0.25000000	87.22
6	Ta2O5	2.14455	0.00000	0.12500000	29.73
Substrate	N-BK7	1.52092	0.00000		
				0.74448189	216.12

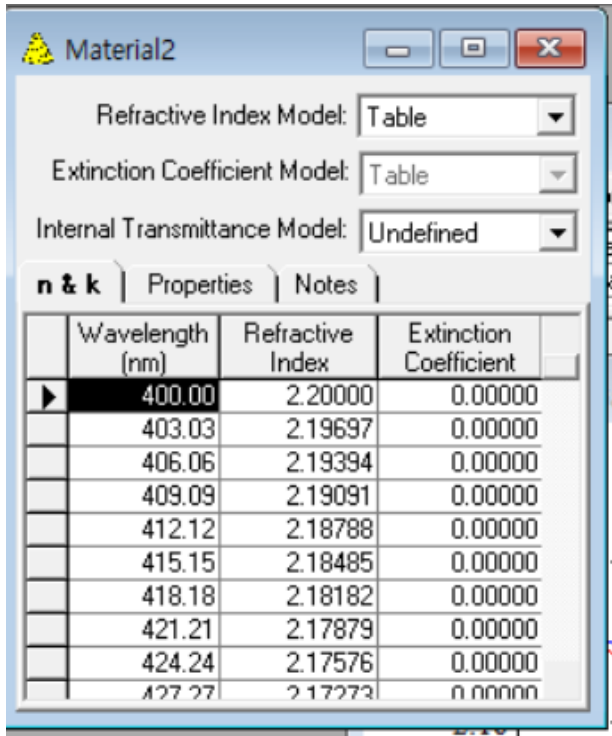
해당 Field에 붙여넣기

Medium	Air	1.00000	0.00000	
1	Ta2O5	2.14455	0.00000	0.07134413
2	SiO2	1.46100	0.00000	0.10179363

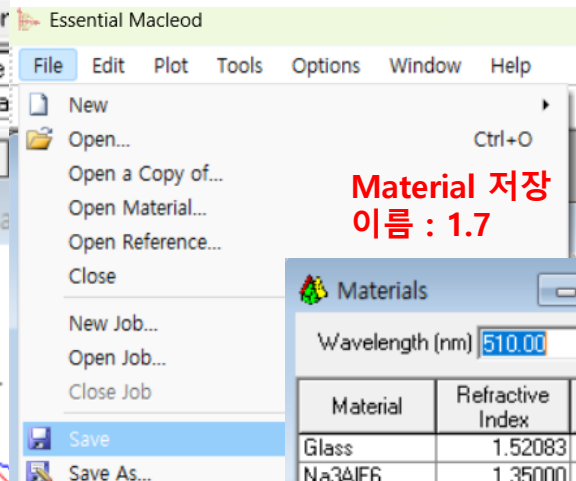


Symmetrical period한 Layer를 선택한 후 > Equi,,, 선택





해당 Material 생성

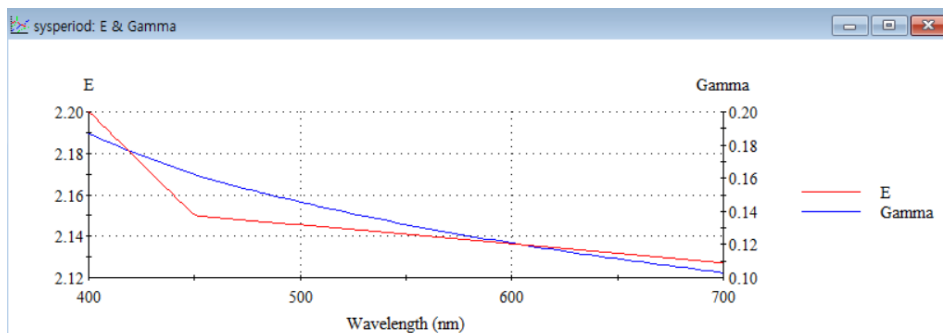


Material 저장
이름 : 1.7

Materials

Wavelength (nm) 510.00

Material	Refractive Index	Extinction Coefficient
Glass	1.52083	0.00000
Na3AlF6	1.35000	0.00000
MgF2	1.38542	0.00000
SiO2	1.46180	0.00000
Ta2O5	2.14455	0.00000
Y2O3	1.79581	0.00009
TiO2	2.34867	0.00037
Al	0.70000	5.66333
HfO2	1.93940	0.00000
Ag	0.05100	2.96000
ZrO2	2.06577	0.00004
Al2O3	1.66574	0.00000
N-BK7	1.52092	0.00000
1.7	2.14455	0.00000



design_sys

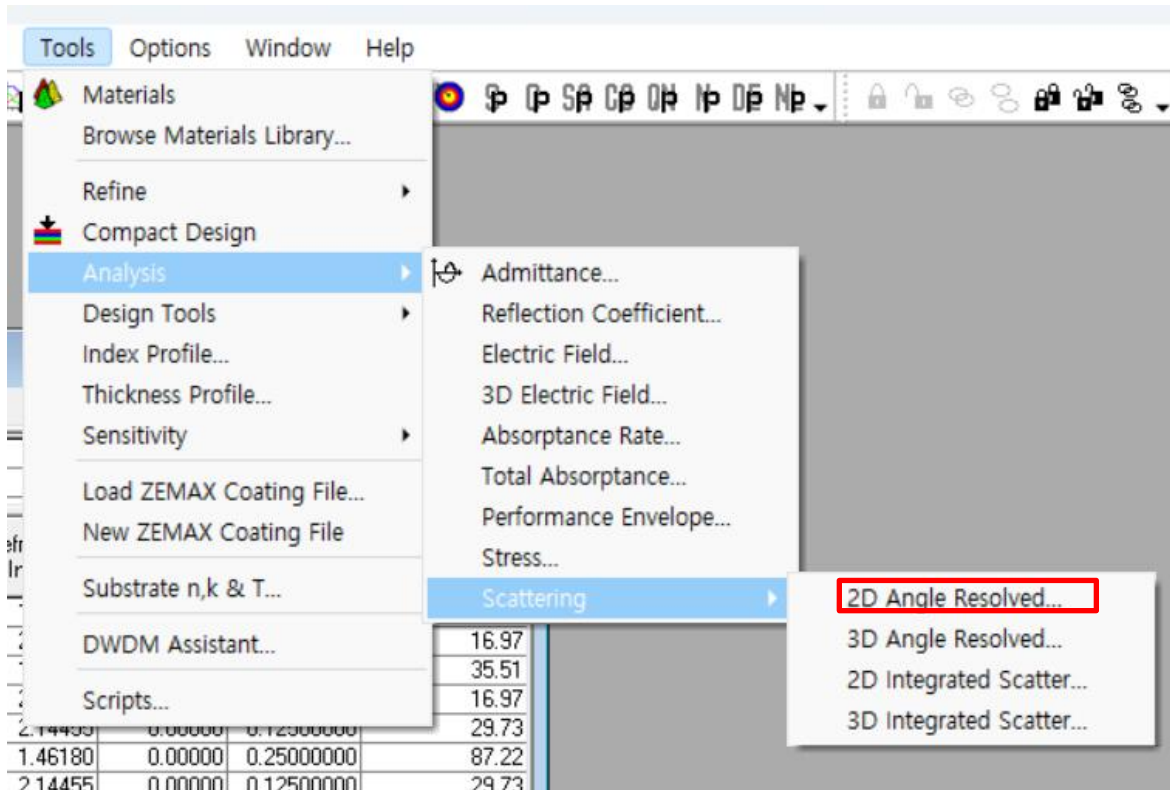
Design Context Notes

Incident Angle (deg) 0.00

Reference Wavelength (nm) 510.00

Layer	Material	Refractive Index	Extinction Coefficient	Optical Thickness (FWOT)	Physical Thickness (nm)
Medium	Air	1.00000	0.00000		
1	SiO2	1.46180	0.00000	0.25000000	87.22
2	Ta2O5	2.14455	0.00000	0.50000000	118.91
3	1.7	2.14455	0.00000	0.31537447	75.00
Substrate	N-BK7	1.52092	0.00000		
				1.06537447	281.13

Scattering



BRDF/BTDF 및 angle resolved scatter 계산

BRDF (bidirectional reflectance distribution function)

BTDF (bidirectional transmittance distribution function).

2d calculation 선택



Scattering Parameters

Horizontal Axis | Vertical Axis | Roughness

Log(Transmitted ARS) ▼

Automatic Scale ☒

Maximum Value 0

Minimum Value -10

Interval for Plot 1

Polarization P → P

Context: Normal

Incident Angle (deg) 0.00

Wavelength (nm) 510.00

Scatter Angle (deg) 0.00

☐ Add to Label

☐ Add to Label

☐ Add to Label

☐ Add to Label

Plot

Plot Over

Table

Cancel

Scattering Parameters

Horizontal Axis | Vertical Axis | Roughness

Long Range RMS Roughness (nm) 0.5

Long Range Correlation Length (nm) 2000

Short Range RMS Roughness (nm) 0.49

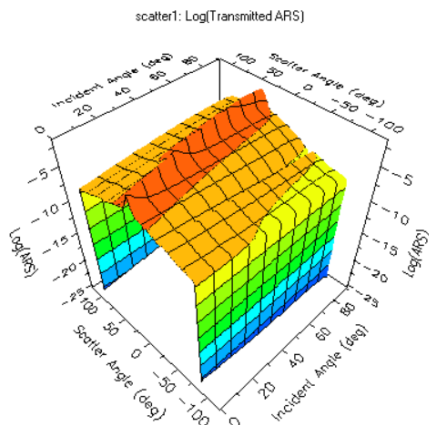
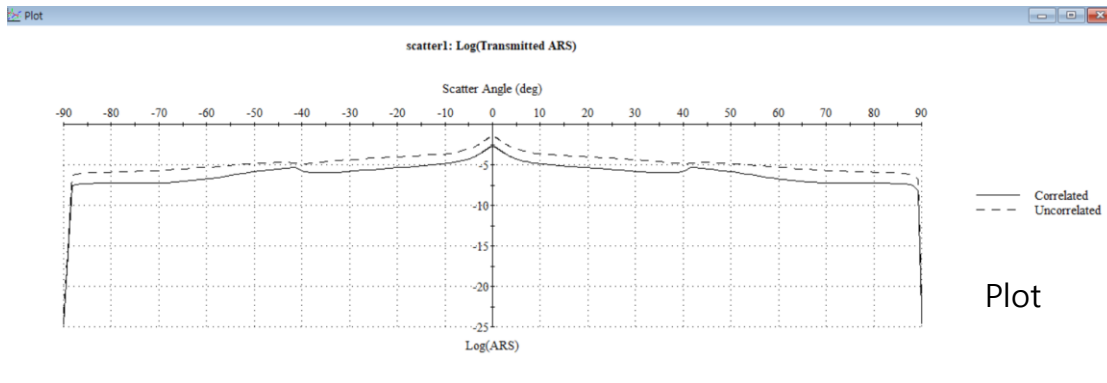
Short Range Correlation Length (nm) 200

Plot

Plot Over

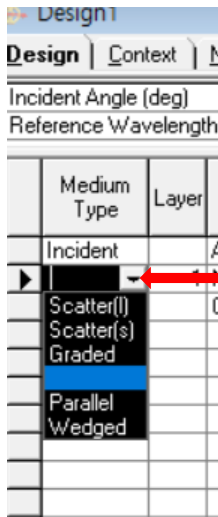
Table

Cancel



3d calculation 선택

Plot



File -> Display Setup -> Medium

Medium Type

Scatter(s)

short range scatter layer

Scatter(I)

long range scatter layer

Symmetrical_Periods.pdf