

PHTN1432 Optical Calibration / MDM Filters (2017W)

___ / 50 Total

(___ received late ... next late receives a zero)

___ /-10 Prelab (if **not** submitted 15 minutes prior to lab)

- ___ Basic design OK (physical thickness, film order)
- ___ Correct λ design
- ___ Correct peak matches (full wavelength)

___ /6 Procedure

- ___ Basic procedure for filter deposition
- ___ Details (chamber pressure, layer thickness, dep monitor values)
- ___ Complete details needed to reproduce the calibration process

- ___ Complete description including mathematical equations of how analysis was accomplished for ONE substrate

___ /42 Analysis – All filters

# (Identify central)	C	Spectrum (Y/N)	FilmStar (Y/N)	Full λ (Vis/UV)	Half λ (IR/Vis)	All peaks modelled Logically ^[1]	Dielectric thickness	Tf from spectrum	Tf from R ² model	Notes (Trial Å for central only)
1										
2										
3										
4										
5										
6										
7										
8										

Diagram -1 each Lambda3B -2 each Complete model matching all observed peaks 4 ^[2] From FilmStar Model 1 1 1

Total Marks (4 central substrates * 7 marks each)

		/16				/4	/4	/4	/28
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Total Marks (4 secondary substrates * 2 marks each, includes those not analyzed ^[3])

		/8				/2	/2	/2	/14
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- Notes:
- ^[1] Your FilmStar peaks must match all observed peaks by λ including those in the IR
If FilmStar model shows peaks not on the observed spectrum, likely the model is too thick
This results in illogical tooling factors → given that films further from the monitor will logically show thinner films
Scale thickness logically (use R-squared as basis) ... furthest is NOT half as thick (!) but rather scaled – expect 75% of design
 - ^[2] /1 attempt, /1 match one peak only, /2 match all peaks including 1, 1/2 ... conspicuous in the IR
 - ^[3] For unanalyzed, transmission spectrum must be reported & reasons outlined (Half-wave peak _is_ viable though for analysis)
Any peak in range indicates analysis is possible

Notes (on the basic method employed):

___ /2 Summary

- ___ Summarize tooling factors (chart – distance to filament, peak wavelength, thickness from FilmStar, Tf)
- ___ Diagram of the substrate holder (showing North) with all corresponding tooling factors

___ Penalties

- ___ No Title Page
- ___ No Folder
- ___ Plagiarized FilmStar reports (ZERO)