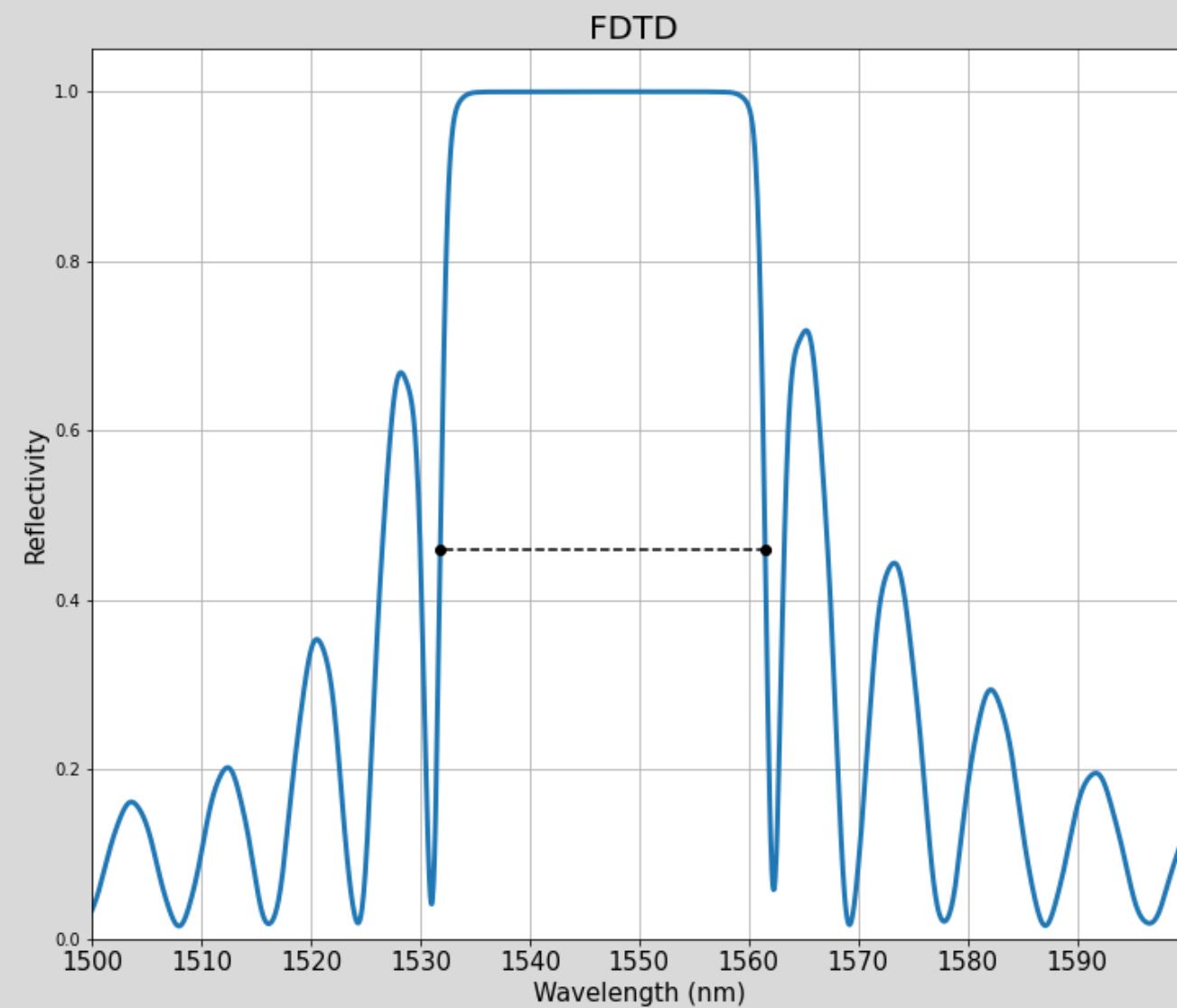# Bragg Grating

Week 4

By: Leonardo Pessôa

OBJECTIVES

- Generate the guide on FDTD and compare the results with EME.

- Verify how lithography filter impact the guide.
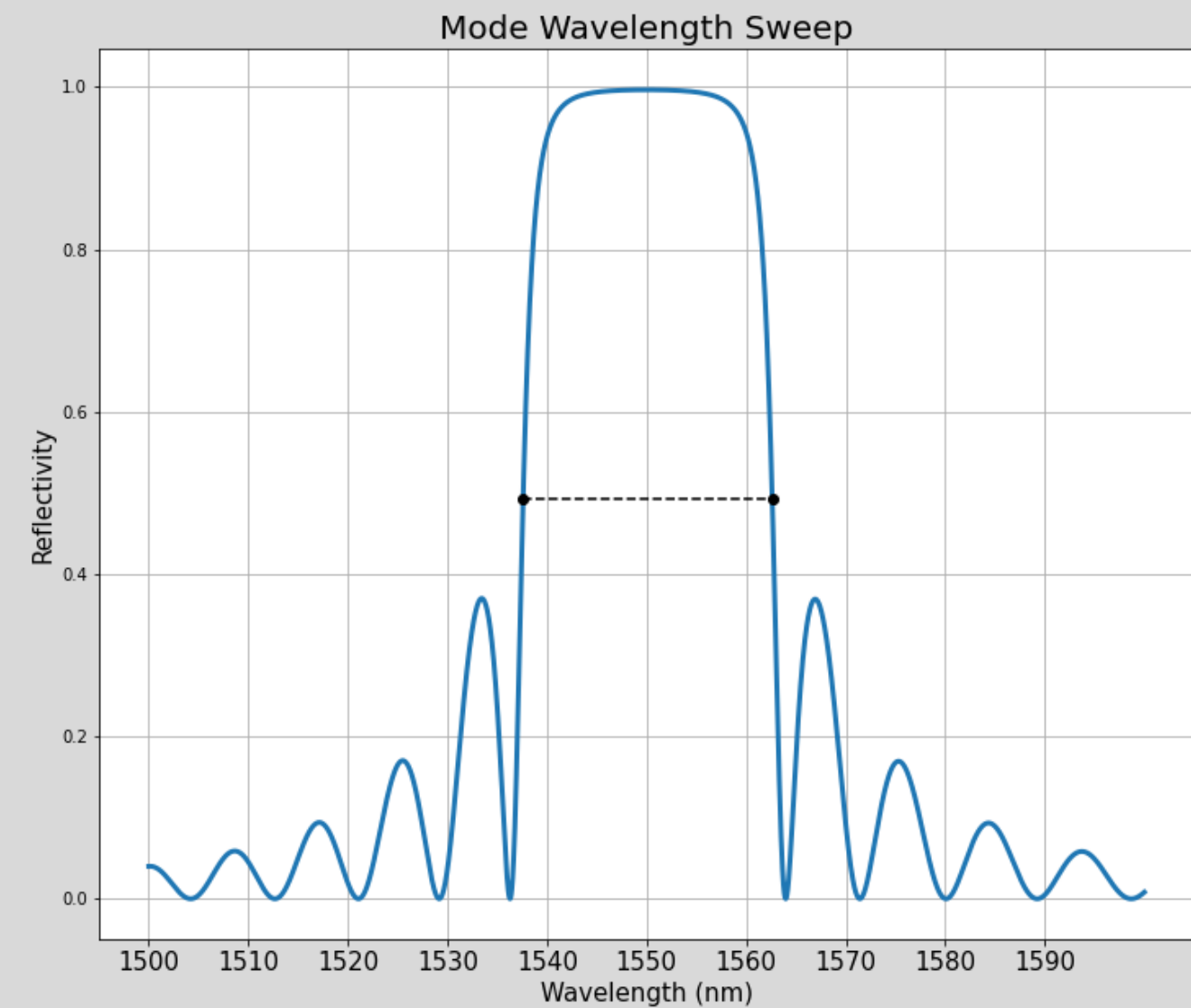
USING THE 0.45NM GUIDE
FDTD vs EME results

N = 82, L = 28.24μm, grating period = 344.377nm, ΔW = 24nm

λB = 1547.41nm, FWHM = 29.6658nm
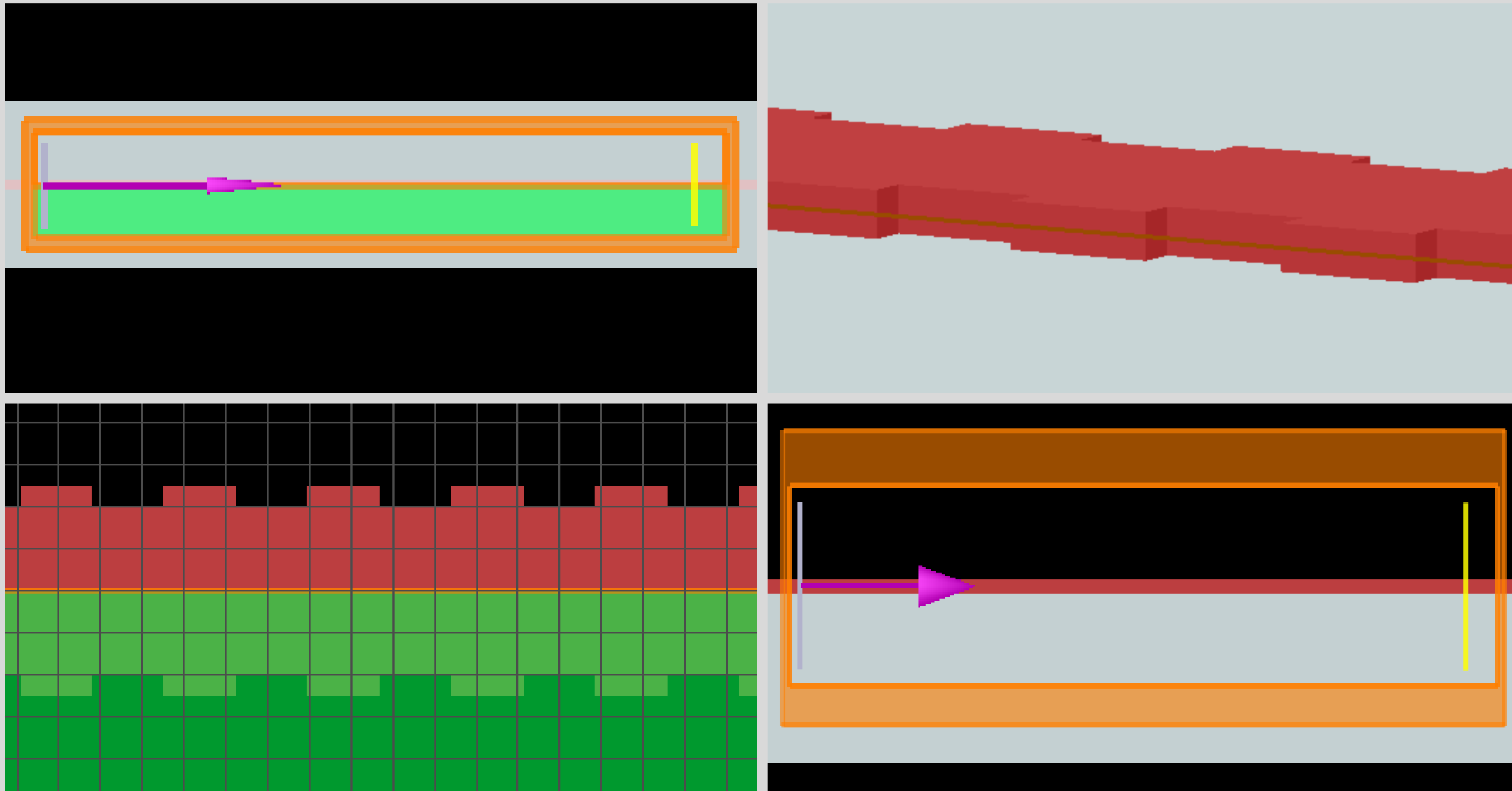
λB = 1550.01nm, FWHM = 25.025nm

DESIGN
Lumerical FDTD

DESIGN

KLayout
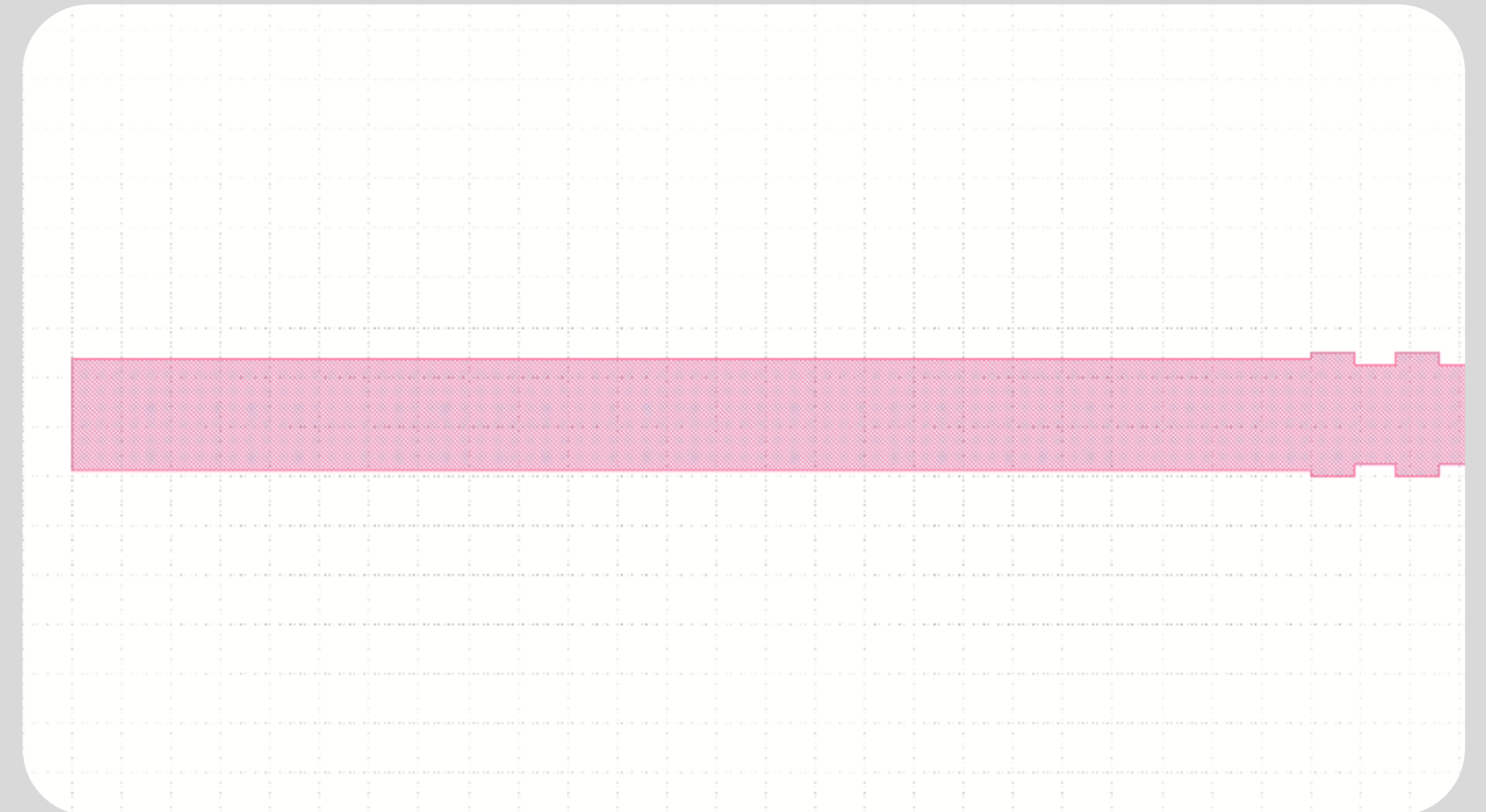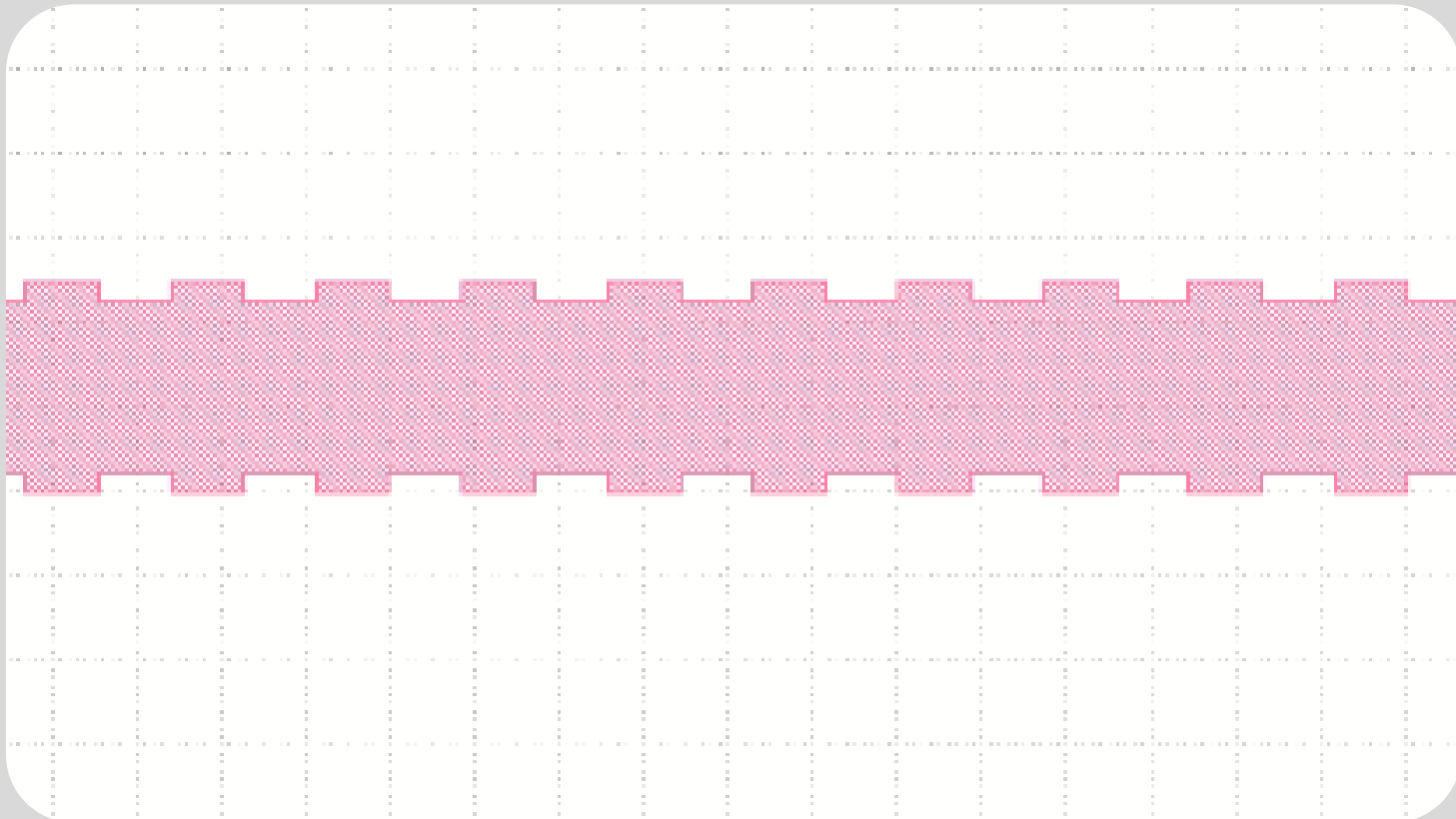
DESIGN
Lumerical FDTD Lithography
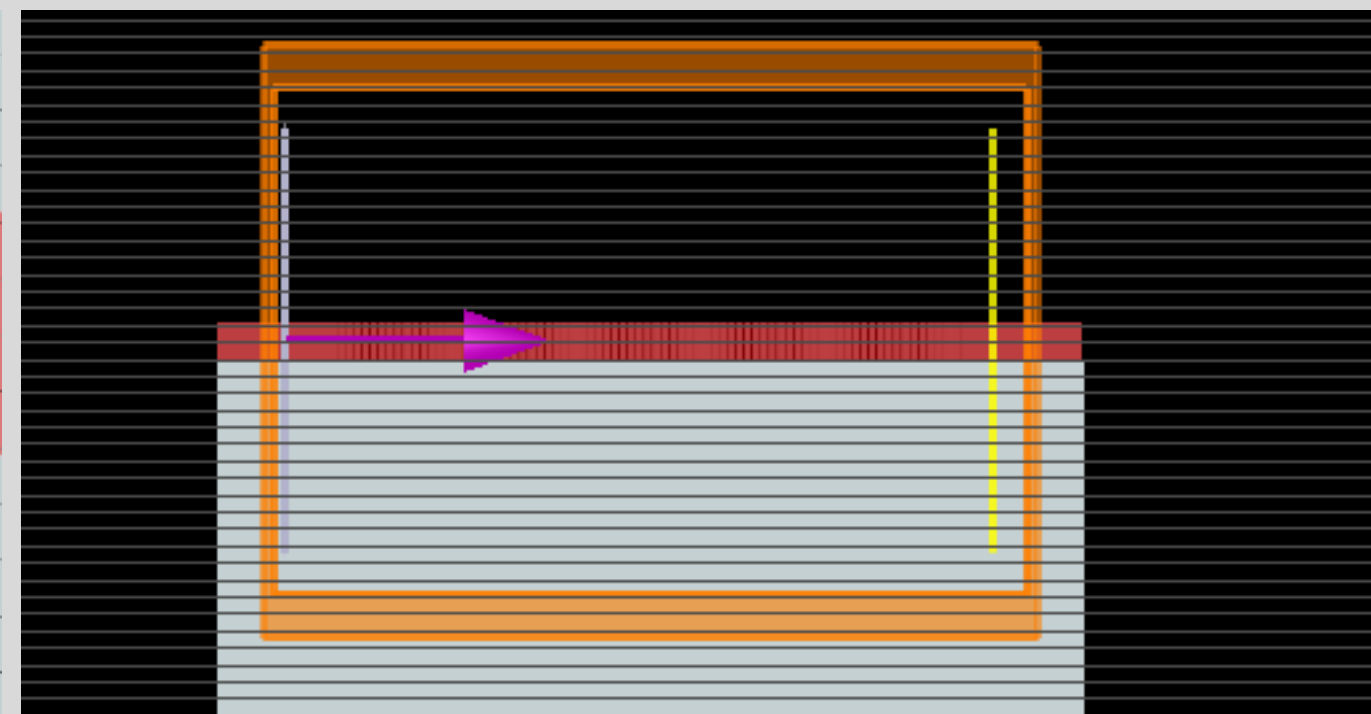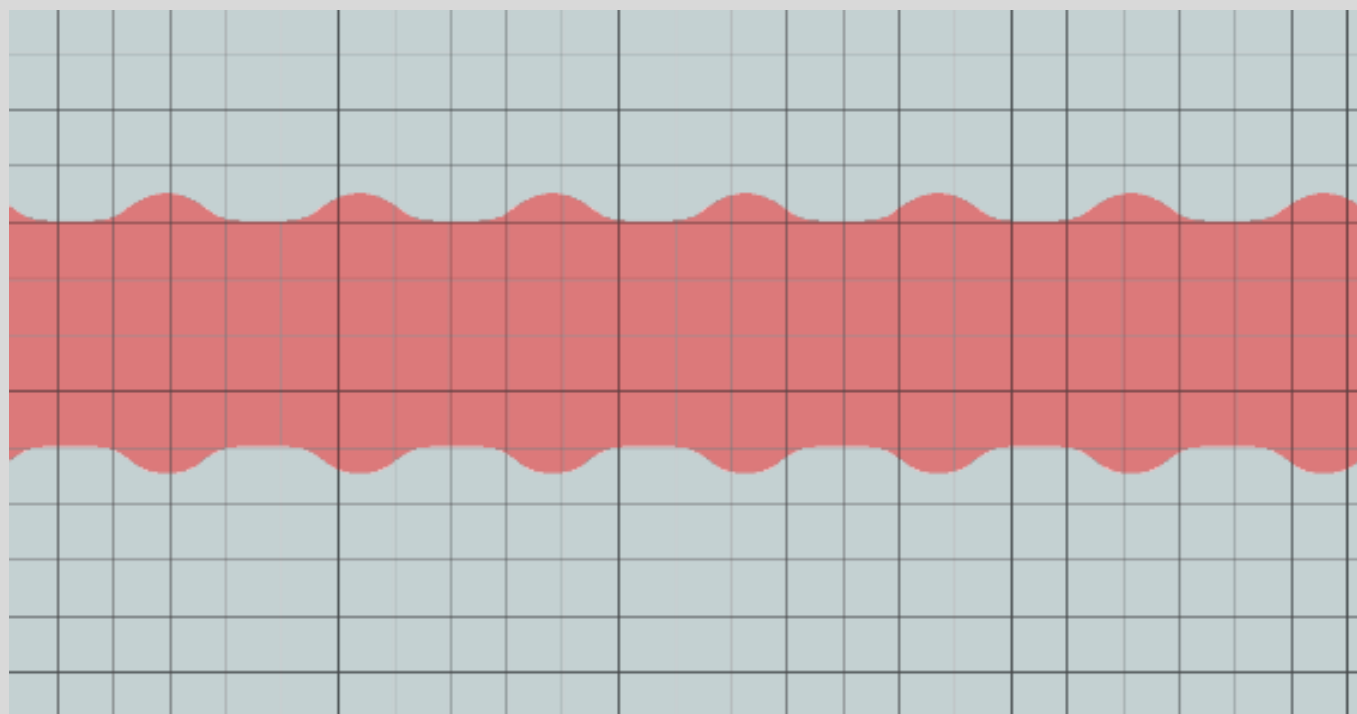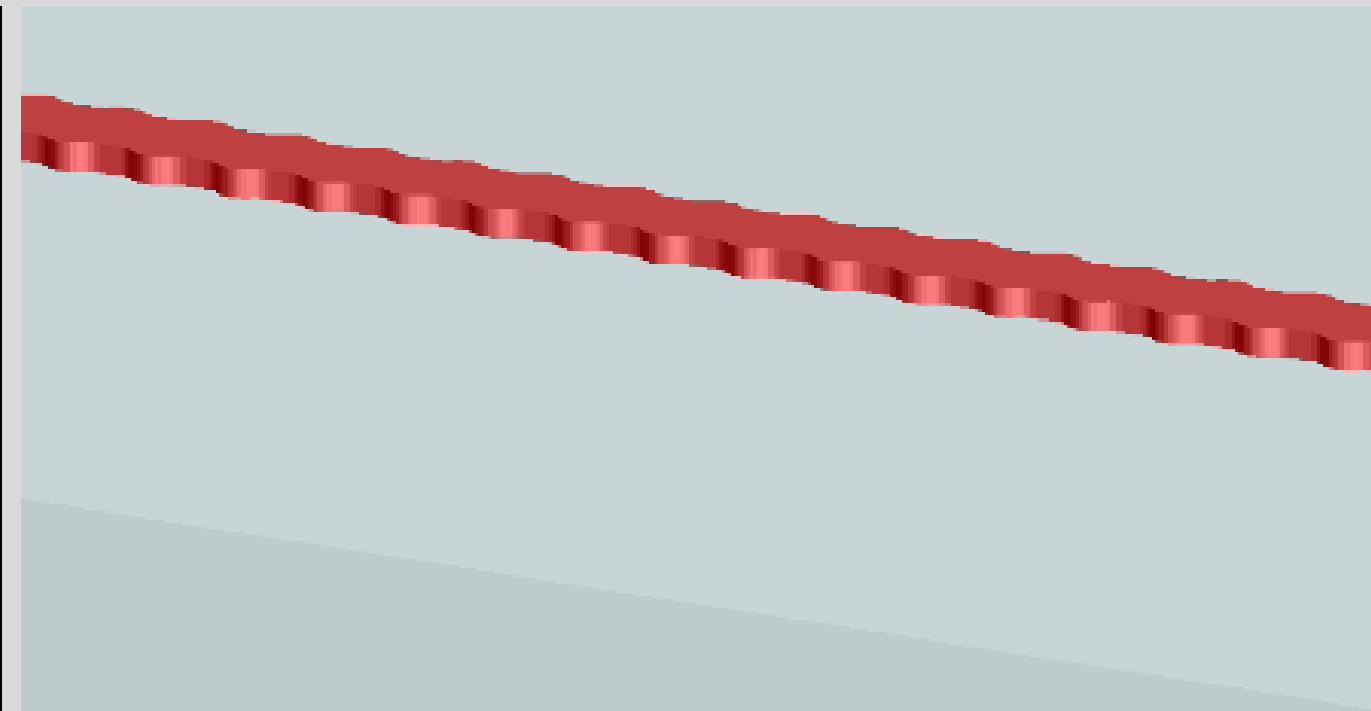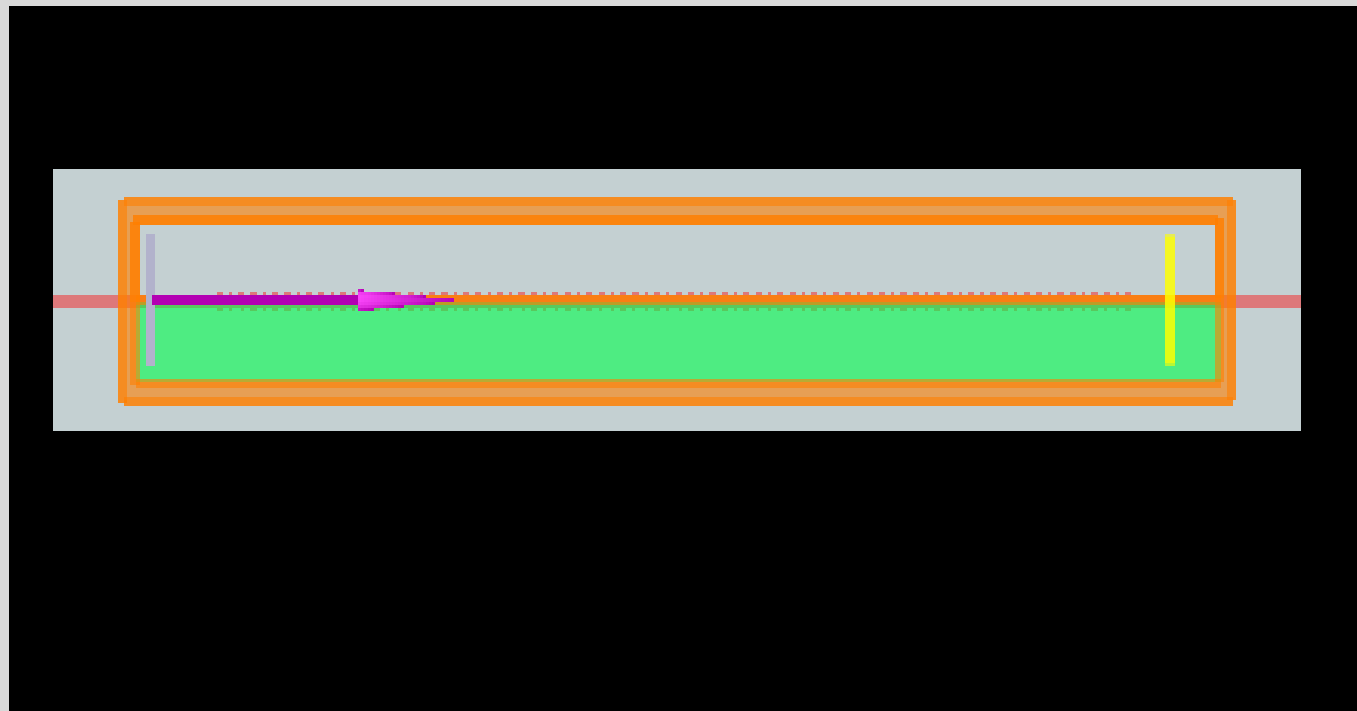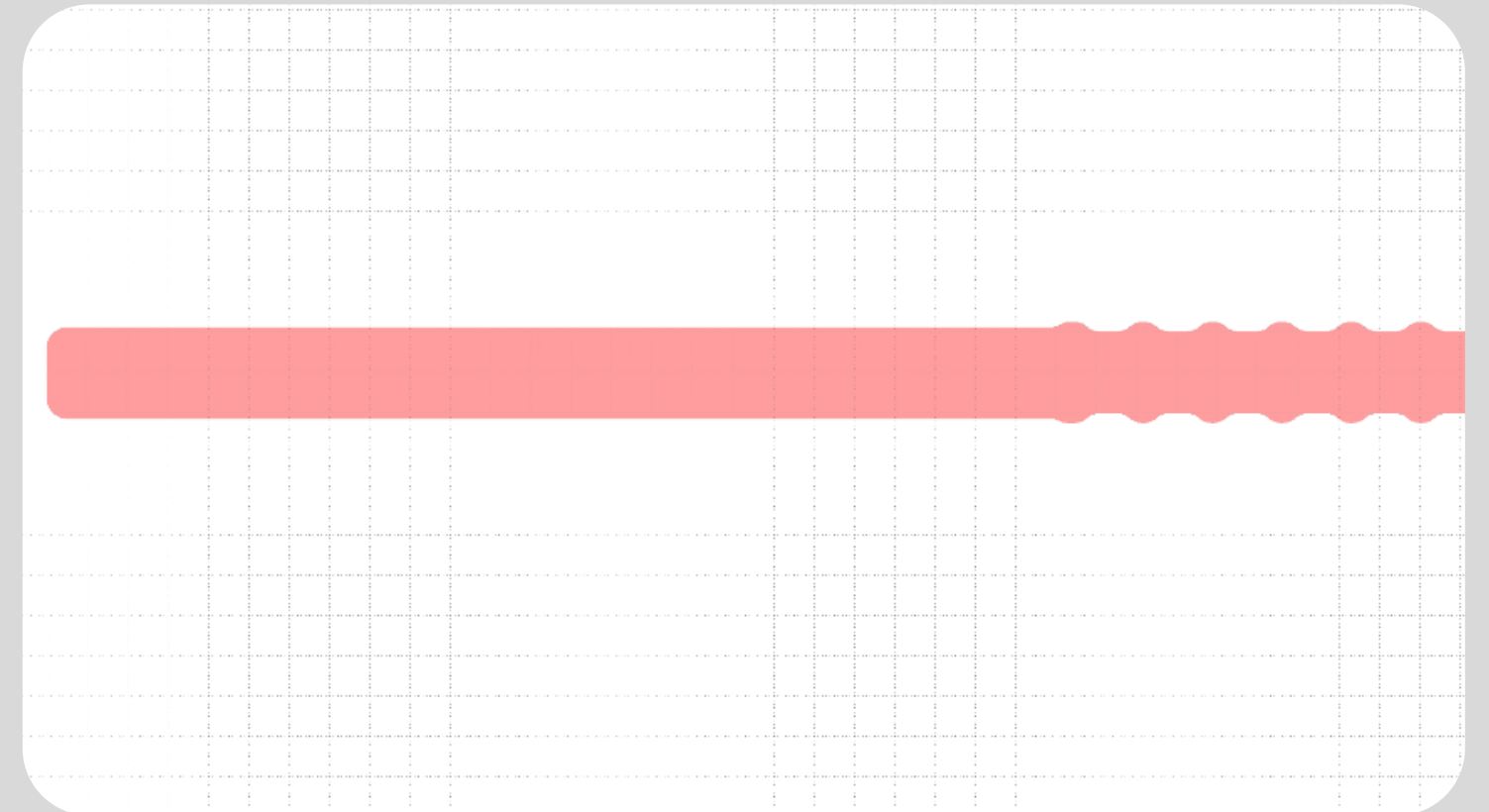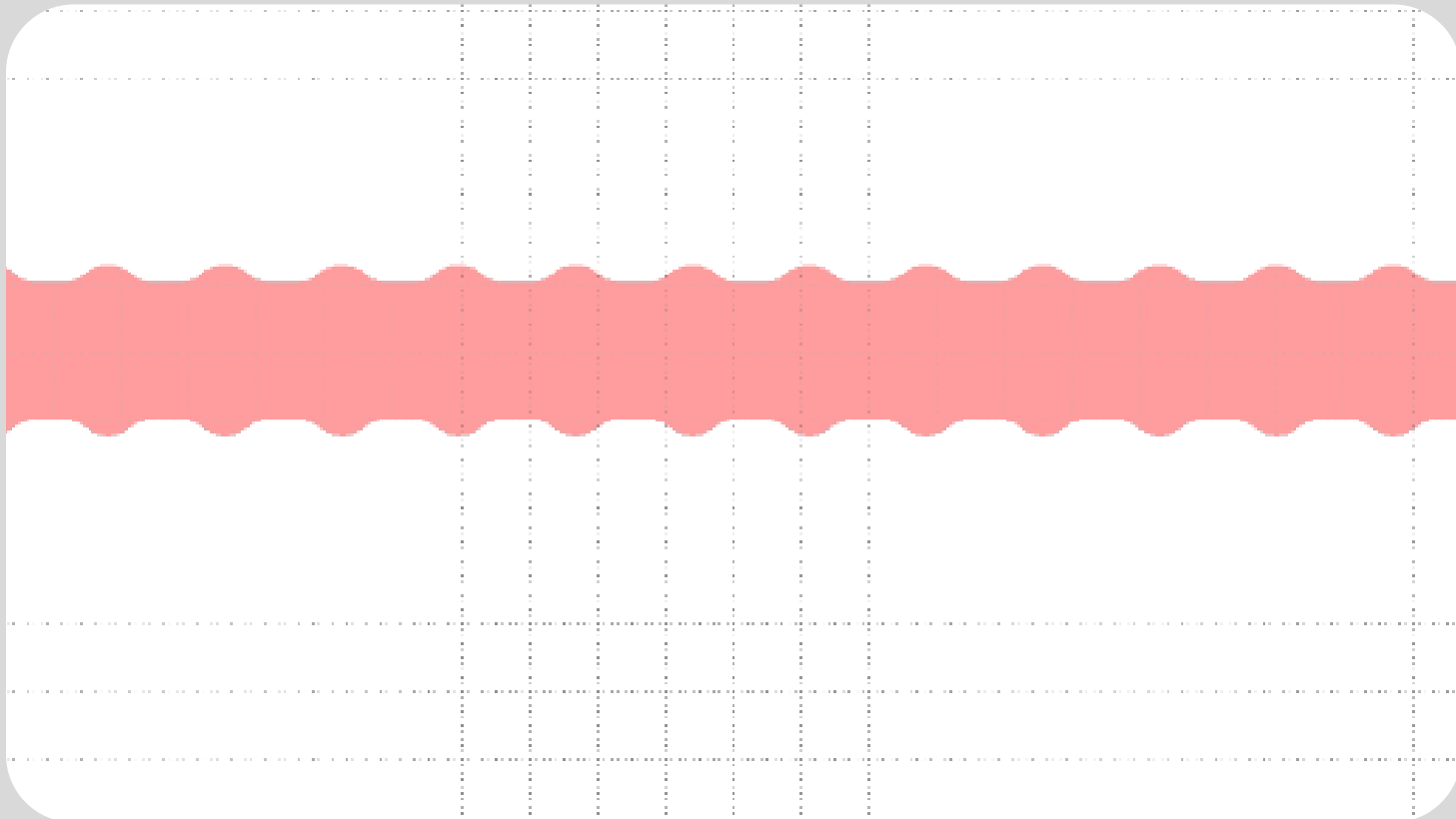
DESIGN

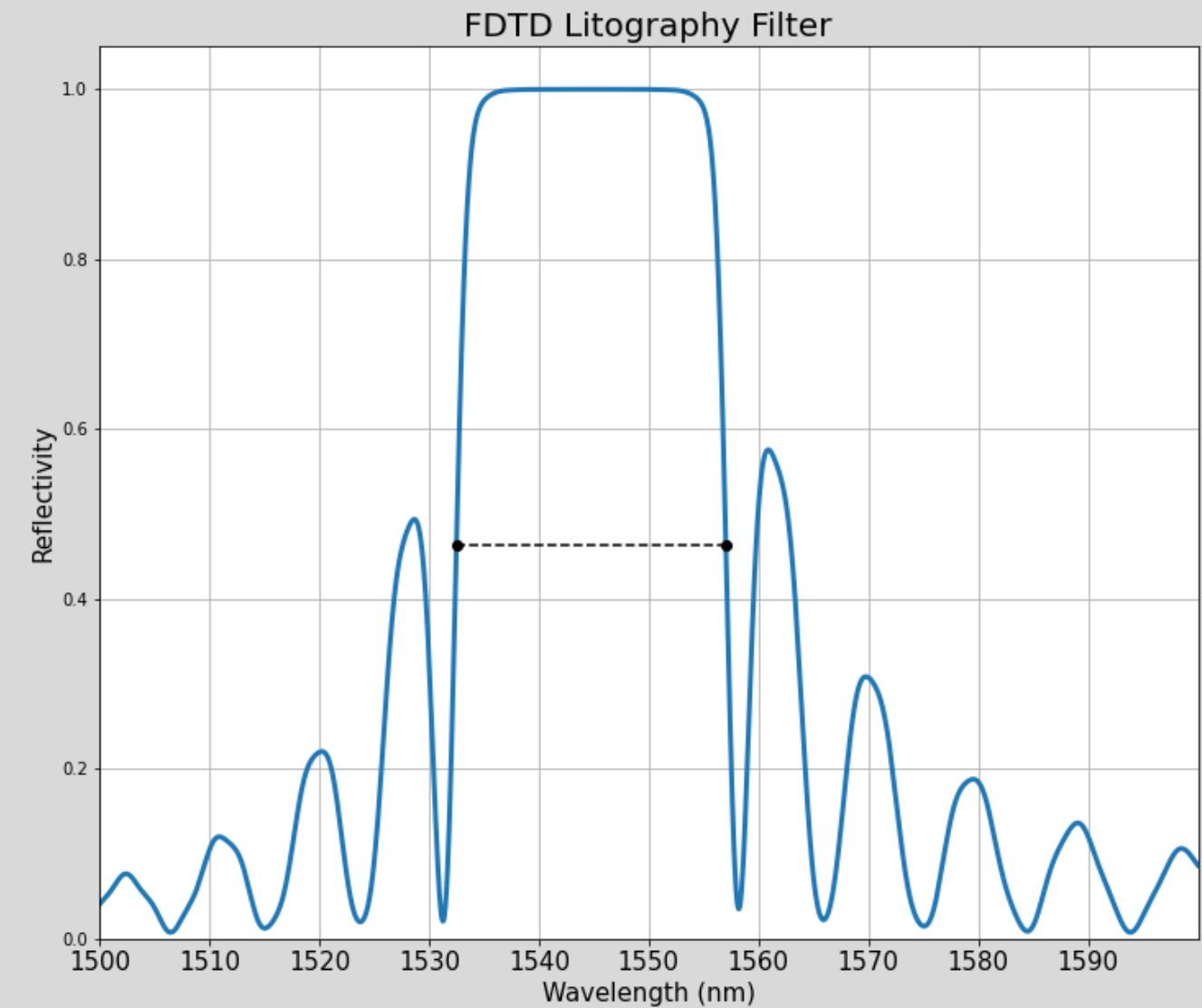## KLayout Lithography

LITHOGRAPHY VS THEORETICAL
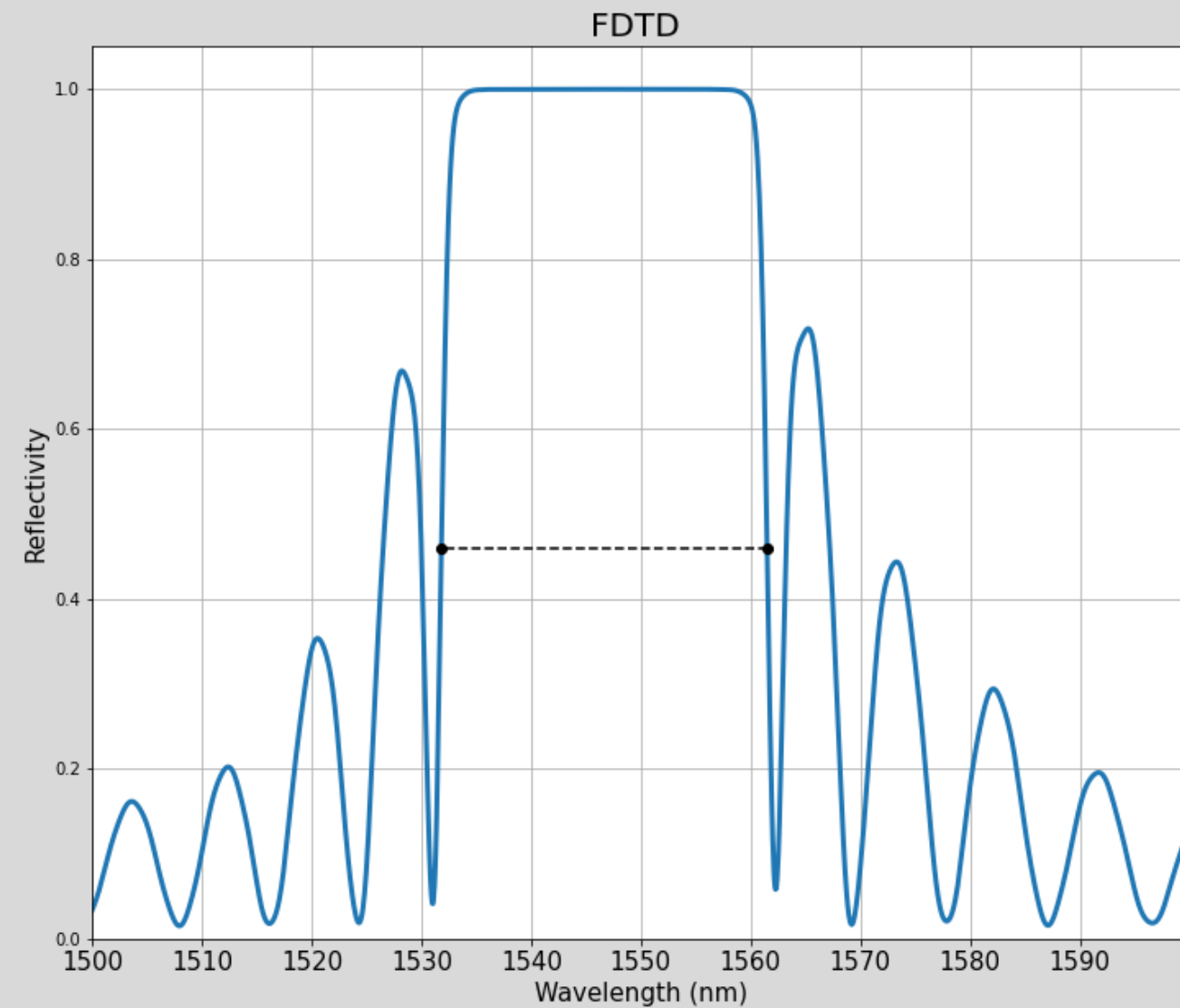
λB = 1547.41nm, FWHM = 29.6658nm

λB = 1544.72nm, FWHM = 24.521nm

CONCLUSION

The EME Result diverges a lot with FDTD. This occur beacause of the lower precision on the EME simulation.

As expected due to the high sensibility of the bragg grating, the litography results diverges significatly from the theoretical.