

Lumerical (ANSYS) FDTD and MODE modules

CNMS scientists rely on Lumerical (part of ANSYS Multiphysics software package) FDTD and MODE software modules to carry out modeling guided design and analyze functionalities of plasmonic and nanophotonic systems. The software is installed on an Intel Xeon dual processor DELL workstation. FDTD analysis is instrumental in evaluating and optimizing a variety of plasmonic and nanophotonic systems including those for surface enhanced Raman spectroscopy (SERS) and nanophotonic applications.

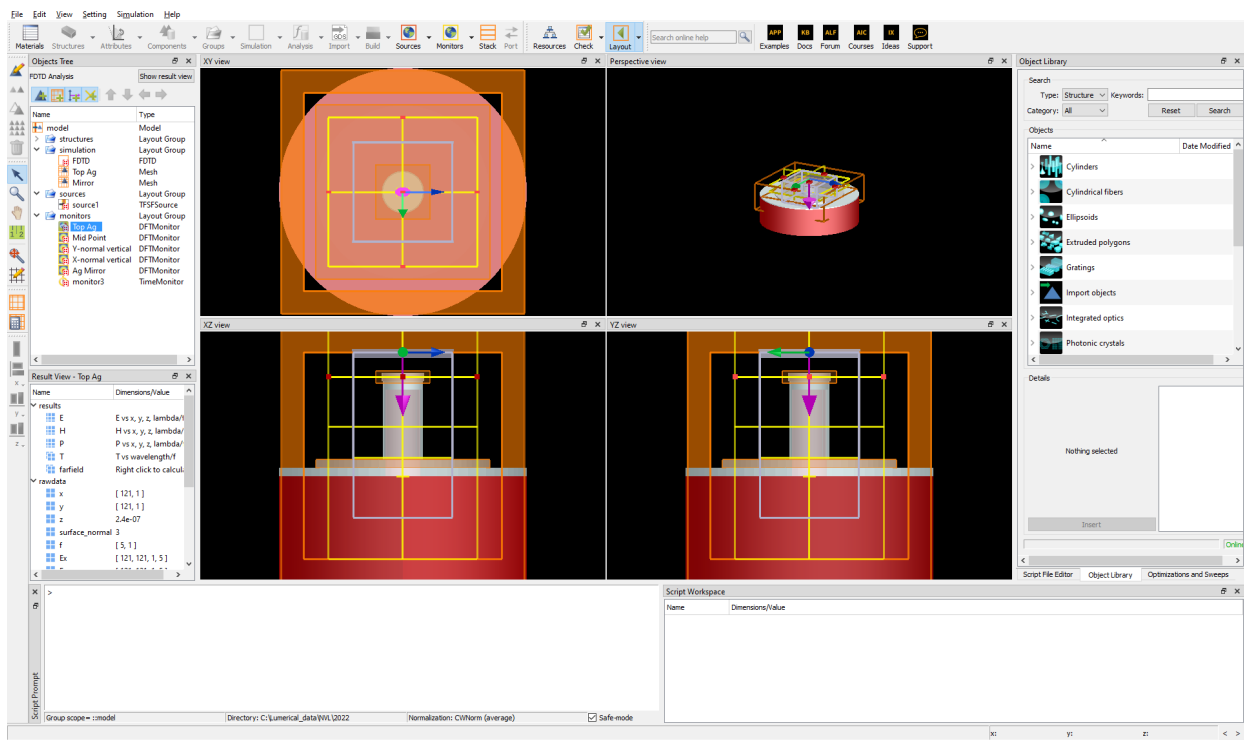


Figure 1. An example of an FDTD model similar to those used in our studies to guide design of disc-on-pillar SERS-active substrates [1,2].

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1. Wells, Sabrina M., et al. "Silicon nanopillars for field-enhanced surface spectroscopy." *ACS nano* 6.4 (2012): 2948-2959.
2. Agapov, Rebecca L., et al. "Lithography-free approach to highly efficient, scalable SERS substrates based on disordered clusters of disc-on-pillar structures." *Nanotechnology* 24.50 (2013): 505302