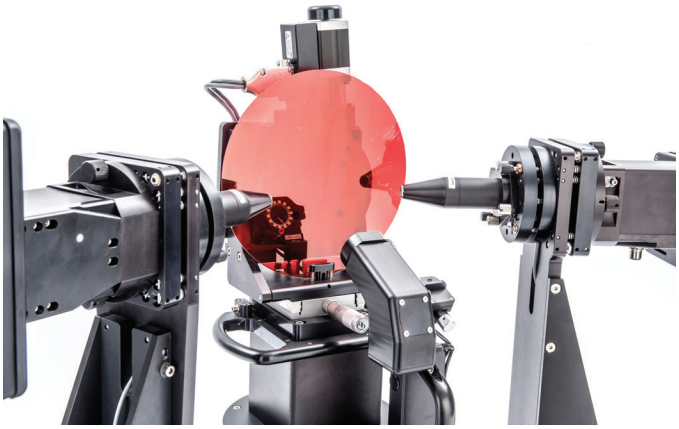
Advanced Modeling Features

Accurately model any sample system over a wide spectral range

NEW! Appending Rotation Data*

Combine rotation data sets for different surface cuts or spectral ranges into a rotation multiset for straightforward multi-data analysis of complex materials:

- Combine rotation data and single orientation measurements
- Analyze all orientations simultaneously
- One set of Euler angles for each rotation data set
- No azimuth angle coupling
- Benefit from the fastest ellipsometry analysis algorithms on the market: results in minutes, not hours



NEW! Full Tensor Layer

Model the most complex material systems and measurements obtained with external constraints such as electric or magnetic fields:

- Model each element of the dielectric function tensor individually
- Easily set up purely anti-symmetric or symmetric tensors
- Take advantage of Kramers-Kronig-consistent B-Splines to find the best-matching optical constants for your material with no need to worry about physical realizability and noise propagation
- Use the flexible user-defined equation layer to account for any possible situation

- Substrate = Full Tensor
  - **Diagonal Part:**
    Type = Biaxial
    Optical Constants: Difference Mode = OFF
    + Ex = B-Spline
    + Ey = B-Spline
    + Ez = B-Spline
    non-Orthorhombic = OFF
  - **Symmetric Off-Diagonal Elements:**
    + Esxy = B-Spline
      Esxz = none
      Esyz = none
  + **Anti-Symmetric Off-Diagonal Elements:**
    Euler Angles: Phi = 0.00 Theta = 0.00 Psi = 0.00

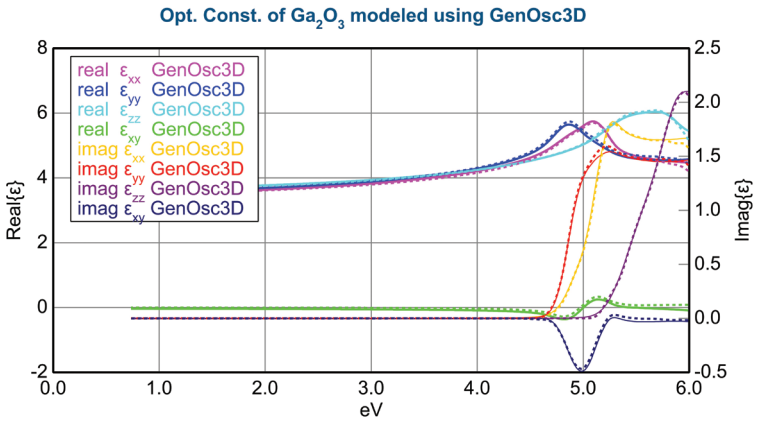
NEW! GenOsc3D Layer*

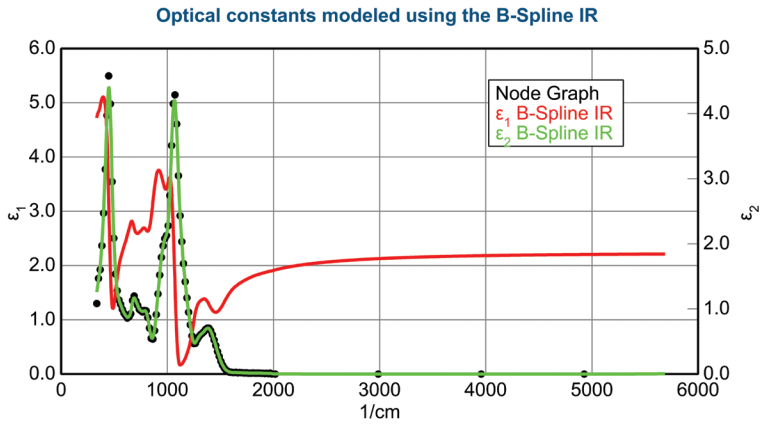
Model the dielectric function tensor of low-symmetry materials using the novel eigen-polarizability approach:

- Combine oscillators of arbitrary eigen-dielectric polarizability unit vector $\hat{e}_l$ to create every physically possible dielectric function tensor

$$\varepsilon(\lambda) = \sum_{l=1}^{N} \rho_l(\lambda)(\hat{e}_l \otimes \hat{e}_l)$$

- Suitable to correctly model monoclinic and triclinic materials
- Directly match Full Tensor reference layers before fitting the actual measured data
- Use any generalized oscillator model available in CompleteEASE





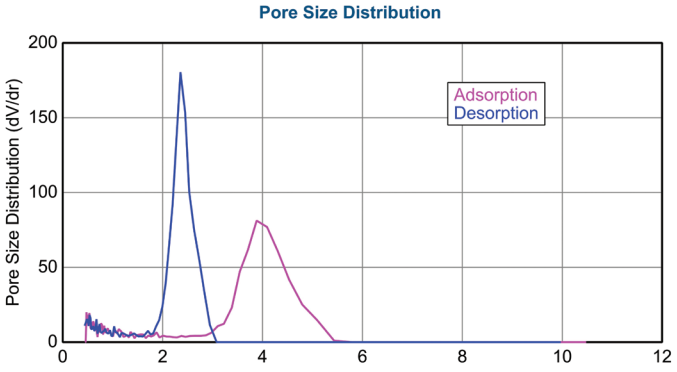
NEW! B-Spline-IR Layer*

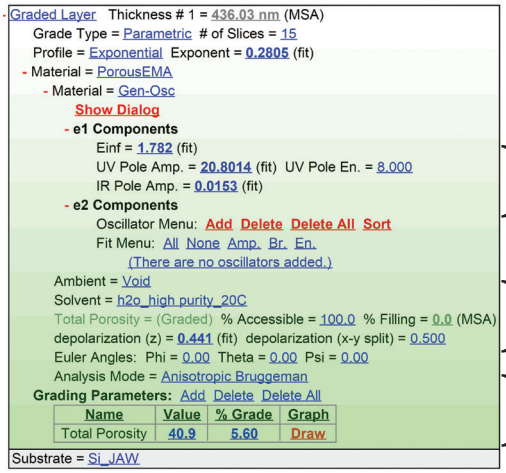
Model your infrared optical constants using a Kramers-Kronig-consistent B-Spline with optimized settings for the IR spectral range:

- Optimized tie-off positions for IR spectral range
- Define multiple transparent ranges
- Identify even the smallest absorption feature
- No need to parameterize to an oscillator model

NEW! Porous-EMA Layer

Describe your porous materials with a physically realistic model which not only accounts for the solvent filling fraction and porosity in your porosimetry experiment but also for anisotropy, the percentage of accessible pores, potential anisotropy and graded sample properties





IMPROVED! Redesigned Additive layer

Combine arbitrary tensors and isotropic optical constant models in an additive manner:

- Merge existing layers for different spectral ranges
- Add new functionality to tabulated material files
- Easily add free-carrier contributions to any layer
- New set of Euler angles to arbitrarily rotate the resulting tensor

*features will be released in upcoming version