SCOUT spectrum simulaton software

SCOUT is a Windows 98/2000/NT/XP software for the analysis of optical spectra by comparison of measurements and models. The following quantities are simulated:

Reflectance, Transmittance, Absorbance, ATR, Ellipsometry, Photoluminescence
Electric field distribution, Local absorption

Model calculations based on

Optical constant models (Classical Drude model for free carriers, enhanced Drude model with frequency-dependent carrier damping, harmonic oscillators, extended oscillator model due to Brendel, extended oscillator model due to Kim, OJL interband transition model, Campi-Coriasso interband transition model, Tauc-Lorentz interband transition model, user-defined expressions for optical constants, imported dielectric functions)

Various effective medium concepts for inhomogeneous materials (Maxwell Garnett, Bruggeman, Looyenga, Bergman representation)

Wave propagation in layer stacks including coherent or incoherent superposition of partial waves, easy definition of superlattices, corrections for scattering losses at rough interfaces. Efficient averaging algorithm for lateral layer thickness inhomogeneities. Gradually changing optical properties. Anisotropic layers. Angle of incidence averaging.

- Flexible manual, 'visual' or automatic fitting of model parameters like film thicknesses or gap energies to adjust simulated to measured spectra
- Simultaneous fits of several spectra like reflectance and transmittance
- Fit several layer stacks with almost unlimited number of layers simultaneously
- Definition of sophisticated fit strategies using fit parameter sets combined with time and deviation thresholds
- Integrated batch operation of large series of input spectra
- Graphics output to Windows printers, metafiles or Windows clipboard
- Data output to clipboard, text files, worksheets in Excel format
- Complete remote control of SCOUT by OLE automation. Create automated reports and fit routines from MS Word, MS Excel, LabVIEW, Windows Scripting Host or any other OLE automation controller.
- Integrated spectrometer modules for complete hardware/software solutions
- User-defined views for easy creation of simple user-interfaces

Screen shots of SCOUT applications with user-defined views >