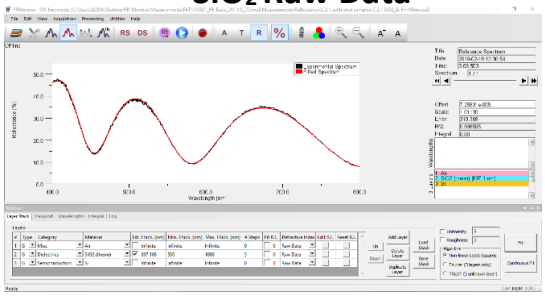
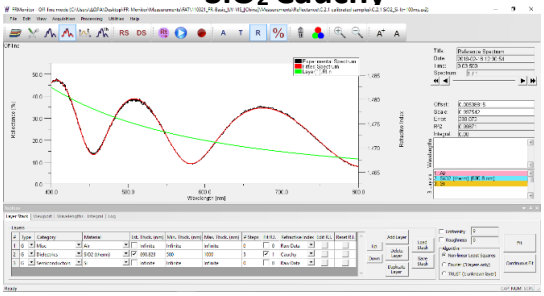
REFRACTIVE INDEX CALCULATIONS

With FR-tools, the refractive index of a film is measured independently from the thickness of the film. Both parts (real and imaginary) of the refractive index are calculated for transparent and semi-transparent films by Cauchy, Lorentz and Sellmeier models. In the following figures, the experimental and fitted spectra for SiO_2 and Si_3N_4 films on Si are illustrated. In the first column, the film thickness is measured with the refractive index values from the database and in the others columns the thickness and the refractive index are calculated simultaneously. In all examined cases the calculated Cauchy, Lorentz and Sellmeier parameter values, represent refractive index (both real and imaginary parts) values very close to the database ones.

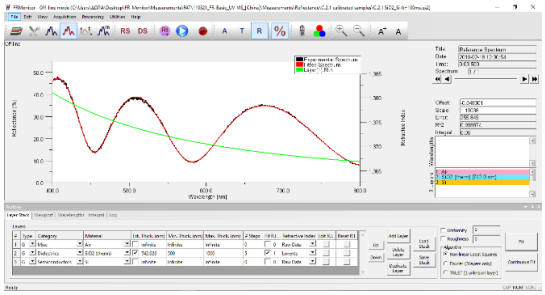
SiO_2 Raw Data



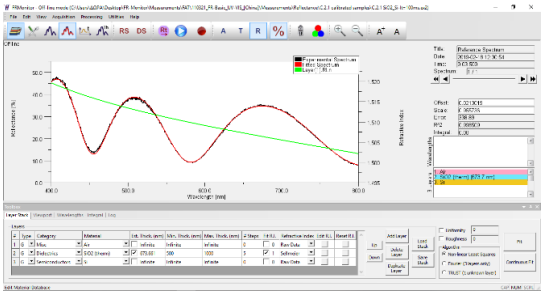
SiO_2 Cauchy



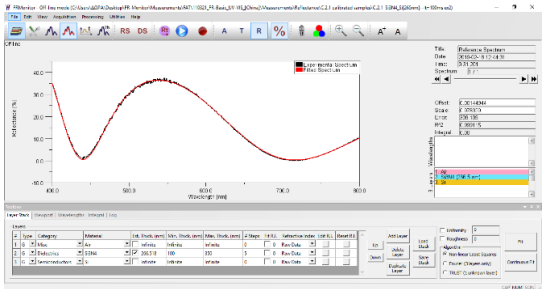
SiO_2 Lorentz



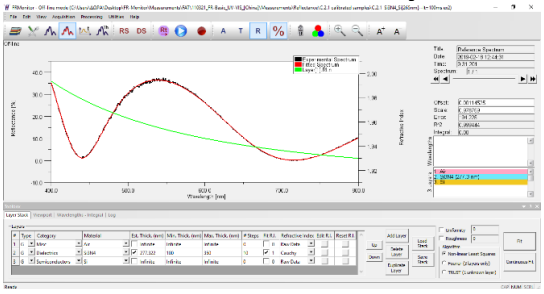
SiO_2 Sellmeier



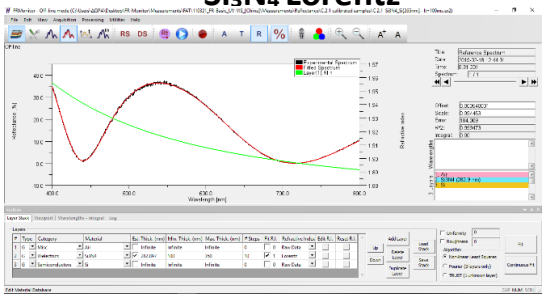
Si_3N_4 Raw Data



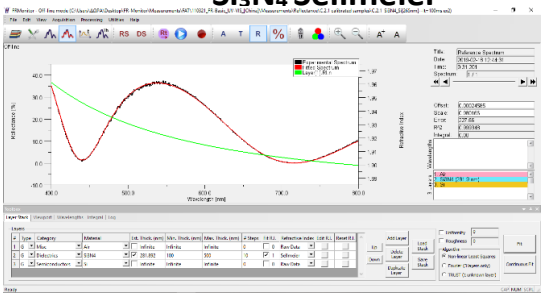
Si_3N_4 Cauchy



Si_3N_4 Lorentz



Si_3N_4 Sellmeier



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