Optional Software Enhancements

Function Enhancement

Manipulating the results of thin film calculations can be exceedingly tedious. For example, the response of a coating illuminated by a 5000K black body compares the integral of performance times black body output with the integral of the black body alone. The bewildering array of color coordinate systems leads to still greater complexity. The Essential Macleod Core Module includes the more important coordinates, but there are many others. An enormously large number of manipulations of the normal reflectance, transmittance, or phase results is often required. Spreadsheets are not the answer because they do not easily handle interpolation and also have difficulty processing differing numbers of data sets, but Function does all that completely automatically. Operations in a simple macro language (editor and syntax checker built-in) allow identical calculations to be repeated over and over again.

Runsheet Enhancement

This is a facility for planning coating production that consists of a machine configuration editor and a run sheet generator. A machine configuration stores details of a coating machine, its sources and their tooling factors, and its monitoring systems. With the run sheet generator, the user can plan the monitoring of a coating design for a given machine configuration. Both optical and crystal monitoring are included as well as advanced features such as dynamic tooling factors and system bandwidth.

Monitorlink Enhancement

Monitorlink provides extra software for connecting Runsheet to a deposition controller. A stand-alone program communicates directly with the controller and an extension to Runsheet gives it the ability to generate and edit deposition programs.

Simulator Enhancement

How difficult is it to make a given filter? Simulator helps to answer that question. Tolerance assessment in optical coating production is a real problem. There is no good, universal, analytical technique. Errors, a simple tool in the Essential Macleod, assumes independent random thickness errors in all layers and can quickly show that independent control demands impossible accuracies in many coatings that can actually be constructed using other methods. In fact, tolerances and effects of errors depend strongly on the control technique. Simulator solves the tolerancing problem by extending the Monte Carlo approach of Errors into a realistic model of the control process. Using a control plan created by Runsheet, Simulator models the control of deposition, introducing both random and systematic effects such as noise on the signal, tooling factor variation, and packing density errors. It shows the effect that these parameters have on the final simulated production coatings. Simulator answers much more than simple monitoring questions. All kinds of parameters associated with the coating system can be translated into parameters of the model and their effect examined.
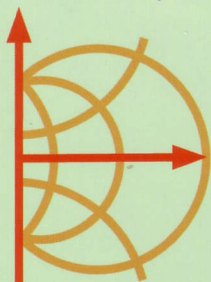
vStack Enhancement

Want to optimize a set of non-parallel coatings for a set of overall requirements? Need to check the performance of a coated prism? The vStack optional Enhancement is a tool for the calculation and optimization of such systems. vStack also calculates the effect of skewed light beams in these systems. When the beam is skewed, some light originally with p-polarization will emerge from the system with s-polarization, and some originally s-polarized light will emerge with p-polarization. We call this polarization leakage. vStack calculates the magnitude of this leakage and provides a Delta value for the leakage component.

DWDM Assistant

Designing multiple-cavity filters? DWDM Assistant automatically designs a set of multiple-cavity filters to meet your specifications using materials that you have designated. Filter designs may be sorted according to criteria such as total thickness and estimated deposition time. Designs can be opened for detailed analysis.

Thin Film Center Inc.