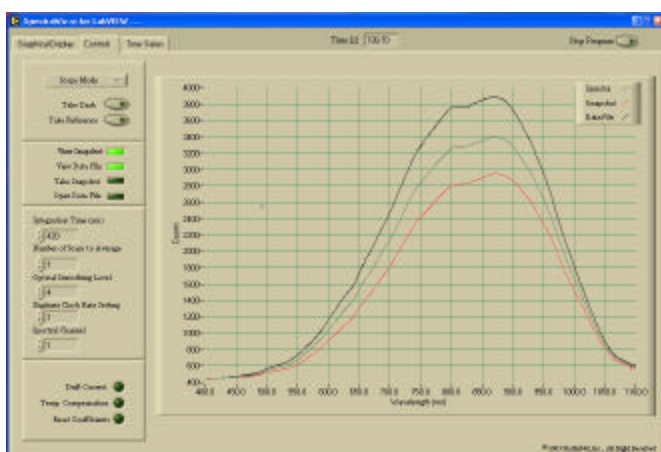


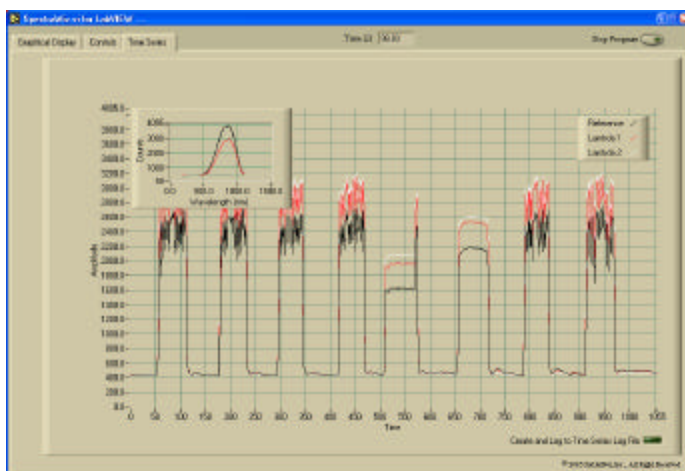
# Analytical Instrumentation

Surf the New Wave in Portable Fiber Optic Spectrometry

## SpectraWiz® Spectroscopy Software for LabVIEW™



A fully operational, user configurable, Spectroscopy Suite for LabVIEW enables the user to rapidly prototype any application.



Shown above is a screen shot of the LabVIEW time series graph in an application that analyzes grain patterns in wood. In set in the upper left-hand corner is a graphic that shows the spectral reflectance data, and the main graphic shows the spectral response to grain differences at three wavelengths as a piece of Oak passes the sensor.

for kinetic parameters. In addition to the Spectroscopy Suite, basic Vis are available that will allow the user to integrate StellarNet's spectrometer into their existing LabVIEW application.

The SpectroRadiometer application measures absolute irradiance in watts/meter<sup>2</sup>/nm. Here the user can measure the Power Spectral Density (PSD). This is the integrated area under the spectral curve bounded by a specified wavelength range. Additionally, an optional Dynamic Link Library is available for use in the SpectroRadiometer mode that enables LabVIEW to calculate the 1931 xy chromaticity coordinates of sources such as LEDs, for precise color measurements.

### LabVIEW Software Features:

- ✓ Real-time Spectral Graphing & Instrument control with File Save, File Open, and Multi-Spectra Plotting
- ✓ Measure Spectral Absorbance, Transmittance, Reflectance, & Irradiance
- ✓ SpectroRadiometer Application Measures Absolute Intensity in Watts
- ✓ Time Series Analysis Enables Calculation of Kinetic Parameters
- ✓ Single Beam Spectroscopy using Relative & Absolute Drift Correction
- ✓ User Configurable for Custom Application development

The SpectraWiz® for LabVIEW™ operating software for Win9x/NT/00/XP is included free with each StellarNet miniature fiber optic spectrometer system.

The LabVIEW programming environment allows rapid customization to adapt the software to any application.

Current features included in StellarNet's Spectroscopy Suite for LabVIEW include real-time setting of all instrument configuration parameters, plotting of spectral data in Scope mode, Absorbance mode, Transmission mode, and even Irradiance mode. In addition, a time series function is built in that enables the user to select three independent wavelengths and follow them as a function of time. This time series data can be exported to file and post-processed



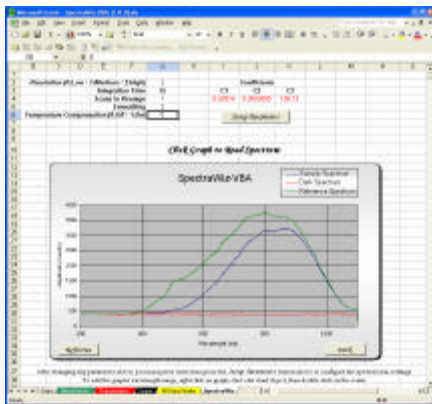
# Analytical Instrumentation

*Surf the New Wave in Portable Fiber Optic Spectrometry*

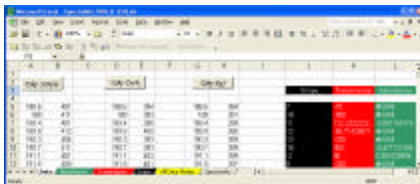
## SpectraWiz<sup>®</sup> Spectroscopy Software for Microsoft Excel:

**SpectraWiz<sup>®</sup> for Excel** Win9x/NT/00/XP is included free with each StellarNet miniature fiber optic spectrometer system. This Excel Project enables not only spectral measurement but also full control (i.e. configuration) of your StellarNet spectrometer from the Microsoft Office environment.

With our VBA modules, you can rapidly customize your spectral analysis to meet your unique research requirements. For example, measuring and displaying sample concentrations using absorbance (according to Beer's law for specific path lengths) and creating user configurable methods can be done in a flash.



Excel's VBA script functionality enables the user to query an instrument directly from Microsoft Excel. Data from the device is imported directly onto an Excel page for post data processing using user defined algorithms. Shown above is the main page of the module: visible are the dark, reference, and spectral traces and the spectrometer's configuration settings.



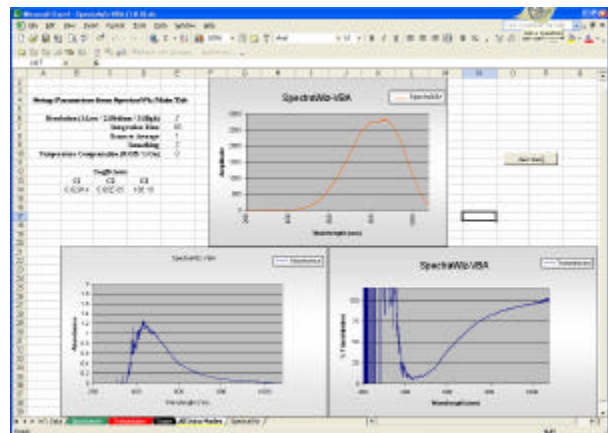
Shown above is the data page on which all calculations are performed. The black, red, and green columns are scope, transmission, and absorbance calculations respectively.

## Software Features:

- ✓ **Real-time Spectral Graphing and Integrated Instrument Control**
- ✓ **Automatically Calculates Spectral absorbance & % Transmittance**
- ✓ **Automatically Graphs both the Raw spectral Data & Processed Data**
- ✓ **Capable of Multi-Channel Data acquisition with multiple spectrometers**

More important however, you can integrate this module's data acquisition capabilities into your existing analytical spreadsheet, thereby enabling you to acquire and analyze spectral data without ever leaving the Microsoft environment.

Create custom reports, calculate and graph absorbance or percent transmission, all at the push of a button. It's all here and more important, it's included with your StellarNet spectrometer.



Above is the processed data graphics page of the module. Scope, absorbance, and transmission data is displayed simultaneously. Notice the noise below 400 nm in the absorbance and transmission curves. From looking at the scope mode data, you can quickly determine that this is due to the fact that there is no reference signal in this portion of the spectrum (i.e. division by zero).

