Thin Film Measurement Software TF ProVis Pro V3.0

The *TF ProVis Pro* is an easy-to-use software application for fast and precise in-line thin film analysis under Windows XP and Vista. Single or 3-axes traverse systems are supported as well as multiple digital and analog ports.

The software uses an improved Fast-Fourier Transformation (FFT) algorithm to determine the film thickness from white-light interference spectra created by thin transparent layers. Layer thickness from below 1µm up to nearly 200µm can be determined in conjunction with tec5 *MultiSpec* spectrometer systems. The film thickness is computed in real-time and is displayed in various on-line charts. The results are logged to an ASCII file during the measurement. Single as well as double layer structures can be examined.

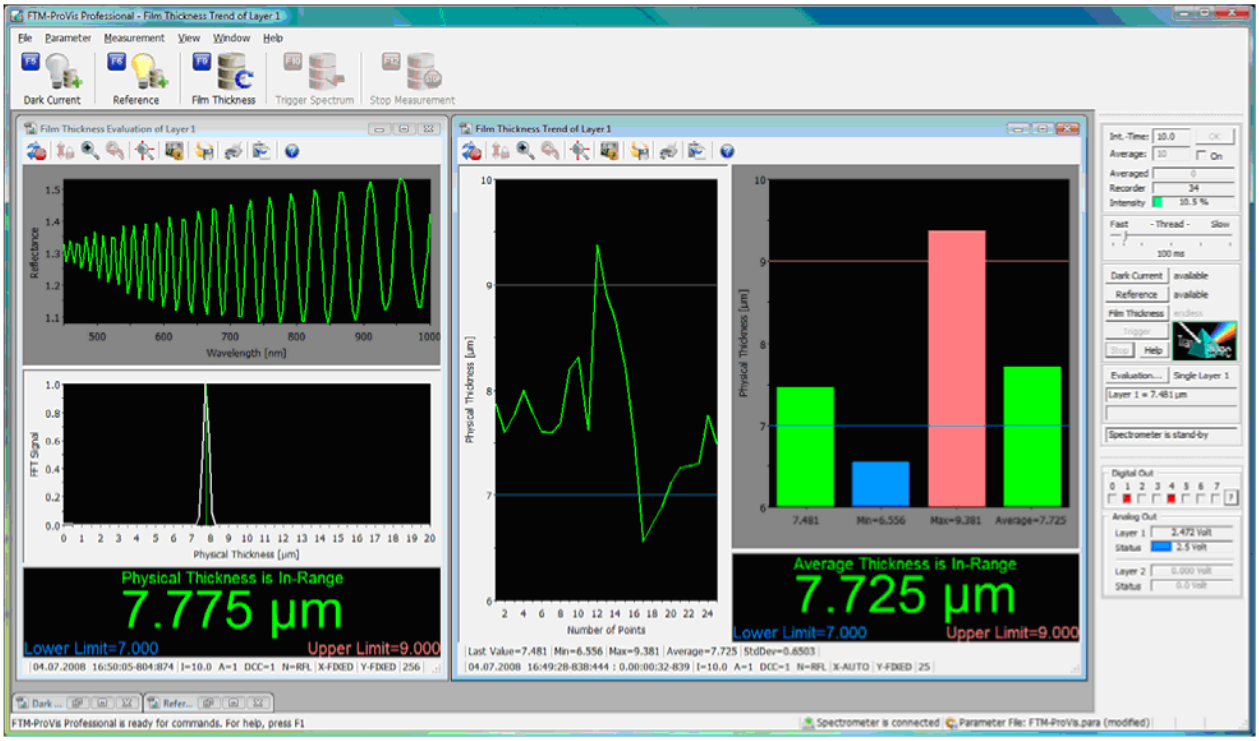

Fig. 1: Screenshot TFProVis Pro

This software has been created by a partner company with long-time expertise in thin film analysis. It is compatible to tec5 MultiSpec desktop USB spectrometer systems as well as OEM USB operating electronics.

Technology for Spectroscopy
80 Skyline Drive
Plainview, NY 11803
www.tec5USA.com
Tel.: 516-653-2000
Fax: 516-939-0555
info@tec5USA.com

Features and Specifications

Film Thickness Determination Features

- Range: approx. 1 to 150µm optical thickness - depends on used spectrometer module respectively the useful spectral range and the optical resolution
- Evaluation of interference spectra by Fast-Fourier Transformation (FFT)
- Run-time-optimized algorithm, evaluation time less than 1ms
- Special algorithm for highly accurate sub-pixel determination of FFT peak position
- Selectable spectral range for interference spectrum evaluation
- Consideration of refractive index and its dispersion (Cauchy dispersion function)
- Selectable film thickness evaluation range within the FFT spectrum for fully automatic determination of double layers

Options for Measurement and Visualization

- Support of triple axes scanning bridges to perform x/y/z coordinate controlled, fully automated measurements of rectangular thickness profiles with up to 250 x 250 values per scan
- Support of single axis traverses for continuously scanning forwards/backwards in cross-direction of a web coater
- Support of 8-channel TTL or 4-channel analog outputs for reporting film thickness values and high/low limits
- Manually or fully automatic triggered spectral data acquisition and film thickness determination, trigger by timer, TTL or traverse controlled
- Real-time representation of interference and FFT spectrum during measurement
- Real-time representation of the film thickness results as trend graphics and bar charts
- Film thickness results are logged to read-shared text files, accessible by third-party software during measurement
- Logs up to 62,500 thickness results to read-shared text files
- Logs up to 62,500 spectra as ‘Spectra-Recorder’, permits a subsequent off-line film thickness re-evaluation with changed evaluation parameters
- Saves all parameter settings to individual parameter files
- Password protection of parameter setups and special user access rights for each document individually
- Quick access to last used parameters and ‘Spectra-Recorder’ files

Software Features

- Multi-threaded and Multiple Document Interface handling
- Shell registration for drag-and-drop operation of the document files
- Minimal requirements for resources and memory
- Programmed in Visual C++ by use of the Microsoft Foundation Classes (MFC)
- Consideration of the Microsoft Application Design Guide: menu toolbar, status bar, tool tips, HTML on-line help
- fully supported Windows XP Themes and multi-monitor use
- Software documentation as detailed user User’s Manual and Quick Reference Guide

Minimum Hardware and Software Requirements

- PC with at least Pentium 4 processor
- Windows XP or Vista operating system (NT not supported)
- 128 MB RAM, 256 MB or more recommended
- CD ROM drive for installation
- Graphics adapter with 1024 x 768 pixels (1280 x 1024 recommended)
- tec5 MultiSpec Pro spectrometer system with USB high-speed interface