Full 3 Dimensional Characterization for Semiconductor and PV Thin Films

Balazs Analytical Services has performed **thin film analyses** since its inception, beginning with boron and phosphorus silicate glasses and extending these analyses into the most recent photovoltaic (PV) thin films. Because the analyses are accurate and consistent, and with **turn-around times approaching 4 hours for most samples**, the results obtained via Balazs thin film analysis have been recognized as industrial standards and used to ensure process consistency and calibrate other techniques.

With an expansion beyond silicate glass, Balazs analyses a wide range of films that includes CdTe, CIS, CIGS, CG, CdS, Cu_2S, NiCr, SiGe, TiW, AlCu, GST, PZT, to name just a few. Measurement technologies include not only **traditional wet chemistry methods**, but extend to many **advanced technologies** including ICP-OES, ICP-MS, laser ablation ICP-MS, glow discharge emission spectroscopy (GD-OES), SEM-EDX, Auger, ESCA, SIMS and XRD. These instruments enable a **full characterization** of semiconductor and PV thin films in **three dimensions** in order to support the most advanced R&D and manufacturing processes in both semiconductor and PV industries.

Examples of the analyses and expertise Balazs provides for thin film analyses include the following:

- Compositional analysis of semiconductor and PV thin films for major elements
- Analysis of thin films for contamination in the film
- Surface analysis of impurities
- Vertical elemental distribution study (depth profiling)
- Lateral elemental distribution studied (line scan)
- Phase identification of solar cell thin films
- Microscopic or local analysis
- Identification of various defects in and on thin films

For additional information, please contact us.