

Abstract Submitted
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Depth Profiling and Interface Analysis by Time-of-Flight Secondary Ion Mass Spectrometry (TOF-SIMS): Potential, Performance and Limitations. COREY FOSTER, ION-TOF USA, SVEN KAYSER, THOMAS GREHL, RUDOLF MOELLERS, EWALD NIEHUIS, ION-TOF GmbH — TOF-SIMS has always been a very sensitive tool for surface spectroscopy and imaging. In recent years TOF-SIMS has improved significantly for traditional dynamic SIMS applications. Operated in the so-called dual-beam mode, where the sample is sputtered with a low energy sputter beam, while the analysis is performed in the center of the sputter crater using a high energy beam, TOF-SIMS provides high-sensitivity depth profiling capabilities comparable to quadrupole or magnetic sector mass spectrometers. Providing parallel mass detection, high mass resolution, advanced charge compensation and 3D imaging capabilities, TOF-SIMS has developed considerable advantages for the characterization of technologically advanced materials. In this study we investigated the depth resolution, detection limits, quantification and reproducibility now available with TOF-SIMS. During this talk we will show examples and applications of TOF-SIMS depth profiling in the field of inorganic materials and compare the depth profiling capabilities of TOF-SIMS instruments with other dynamic SIMS machines.

Corey Foster
ION-TOF USA

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