

## Compositional SIMS Depth Profiling of CIGS film

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CIGS solar cell with copper, indium, gallium and selenium is a second generation solar cells for the lowering of the manufacturing cost. The relative ratio of the four elements is one of the most important measurement issues because the photovoltaic property of CIGS solar cell depends on the crystalline structure of the CIGS layer. However, there is no useful analysis method for the composition of the CIGS layer. Recently, AES depth profiling analysis of CIGS films has been studied with a reference material certified by inductively coupled plasma optical emission spectroscopy. However, there are some problems in AES depth profiling analysis of CIGS films. In this study, the in-depth profiling analysis was investigated by secondary ion mass spectrometry (SIMS) depth profiling analysis. We will present the compositional depth profiling of CIGS films by SIMS and its applications for the development of CIGS solar cells with high efficiency.

**Keywords:** CIGS, Solar Cell, SIMS, Depth profiling, reference material