NEW IN-LINE WAFER ANALYZER, VPD INTEGRATED TXRF

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Vapor Phase Decomposition (VPD) is a pre-treatment technique to collect contaminants on the surface of Si wafers [1]. The VPD has become an effective technique for a high sensitive TXRF analysis. We had carried out a VPD-TXRF measurement by using a stand-alone type VPD system [2]. Through the use of the VPD technique, the lower limits of detection of a TXRF analysis were improved by two orders of magnitude compared to those without use of the VPD technique.

We have developed a new in-line wafer analyzer, VPD integrated TXRF spectrometer. This VPD-TXRF spectrometer has the following features.

1. Minimum footprint adoptable in 300mm FAB. Same footprint in comparison with the conventional TXRF spectrometer (Rigaku TXRF300).
2. High through-put analysis using a simultaneous progress system of VPD treatment and TXRF measurement.
3. Easy operation with the control unification of processing and analysis.
4. Loading indispensable tools for an accurate analysis of VPD samples.
5. Cutting down the maintenance of collection droplet supplying and tip washing etc.
6. Safe and fully automated running with various kinds of sensor installed.

The VPD-TXRF spectrometer reproduced the improvement of the lower limits of detection given by the stand-alone type VPD. The details and application data of the VPD-TXRF spectrometer will be presented.

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[2] M. Yamagami, M. Nonoguchi, T. Yamada, T. Shoji, T. Utaka, S. Nomura, K. Taniguchi, H. Wakita and S. Ikeda, *X-Ray Spectrom.*, **28**, 451-455 (1999).