

Insights: Publications

Monitoring Silicon Quality From Diffusion Furnaces Using In-Line Measurements

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Carrier lifetimes provide an excellent indication of the concentration of impurities and defects in semiconducting materials. This paper describes a non-contact technique for measuring generation and recombination lifetimes. This technique, which is incorporated into the KLA-Tencor Quantox system, provides a highly sensitive method for monitoring the formation of defects or incorporation of impurities in silicon wafers during processing. Several applications of these measurements are investigated, such as monitoring the effects of various thermal cycles on the formation of a high-lifetime denuded zone near the wafer surface and monitoring diffusion furnace contamination after a quartz change.

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