

RECOMBINATION CHARACTERISTICS  
OF SINGLE-CRYSTALLINE SILICON WAFERS  
WITH A DAMAGED NEAR-SURFACE LAYER

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S u m m a r y

Spectral dependences of the small-signal surface photovoltage,  $V_f(\lambda)$ , with a region of short-wave recession have been studied experimentally and theoretically. The dependences  $V_f(\lambda)$  are shown to enable important information concerning a modification of surface and bulk recombination properties of the photosensitive silicon material in the short-wave spectral range to be obtained experimentally with the use of a nondestructive technique. In particular, the formation of a damaged near-surface layer owing to the Fe implantation is found to bring about a significant decrease in the diffusion length (i.e. the lifetime) in the implanted layer and an increase of the effective surface recombination rate on the illuminated surface.