SURFACE RECOMBINATION OF CHARGE CARRIERS IN STRUCTURES "SILICON NANOCRYSTALS ON SILICON"

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S u m m a r y

The possibility to suppress the surface recombination of charge carriers in monocrystalline silicon (c-Si) has been studied at low temperatures, and the band-edge luminescence in c-Si has been observed. The increase of the effective lifetime of minority charge carriers and its correlation with the intensity growth of the edge photoluminescence have been revealed in c-Si covered, making use of pulsed laser deposition, with SiO_x films ($x \to 2$) which contain Si nanocrystals.