

INVESTIGATION OF INFLUENCE
OF SILVER AND ZINC ON ELECTRICAL AND
RECOMBINATION PROPERTIES OF SILICON

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S u m m a r y

We present the results of studies of the influence of Ag and Zn dopants on electrical and recombination properties of silicon in a wide range of their diffusion temperature. Four energy levels for incorporated Ag atoms and two ones for Zn have been found. The comparative analysis of behavior of the life-time of minority charge carries in Si with increase in the Ag and Zn concentrations as well as the analysis of the genesis of levels of isolated substitutional and interstitial impurities in the framework of the simplified deep level theory have shown that the $E_c - 0.37$ and $E_c - 0.53$ eV Ag levels should be of donor type while $E_v + 0.29$ and $E_v + 0.43$ eV ones should be of acceptor type. It is suggested that Ag and Zn impurities in their certain concentration ranges in Si play not only the role of traditional recombination centers but can stabilize the initial silicon parameters.