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Cluster model in Si

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The analysis of photoconductivity, free carrier mobility and free carrier concentration time dependence allows to propose the cluster model that involeves the evaluation of a band structure around the cluster and the capture of both carriers. The density functional method was used for band structure simulation. Photoconductivity, Hall, magnetoresistance and Photo Hall effects dependence on temperature and time were exploited experimentally. It is found the Fermi level position plays main role in the activation of clusters as the recombination centers.

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