Si におけるトライマーコドーパントの研究

伊藝和志、東口義経、跡路栄作、早藤貴範

Electronic structure of silicon with trimer co-dopants

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Ab-initio calculations of the electronic structure of silicon with trimer-co-dopant have been performed to search a p-type dopant having low activation energy. It is found that there are some trimer co-dopants of Al, Ga, or In having lower activation energy than sigle elemental dopant. It is also found that there is a relation between increasing accepter-silicon distance and decreasing of activation energy. As a result, In_2N, In_2P, and In_2Sb trimer co-dopant is one of the most promising candidates for the formation of a high-performance extremely shallow junction in the future ULSI.