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## Surface plasmon effect of silver nanoparticles on optical and photovoltaic properties of silicon solar cells

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The surface Plasmon effect of silver nanoparticles on optical and photovoltaic properties of silicon solar cells was investigated. The Silver nanoparticles were deposited on the p-type silicon base of the n+/p junction using a thermal evaporation and electrochemical anodization method followed by a thermal treatment at 180 °C under nitrogen atmosphere. Chemical composition and surface morphology of the deposited Silver were examined by energy dispersive X-ray (EDX) spectroscopy and scanning electronic microscopy (SEM). The effect of the deposited nanoparticles on the electrical properties was evaluated by the internal quantum efficiency (IQE) and current-voltage (I-V) measurements. The results indicate that the formation of the metal nanoparticles is accompanied by an enhanced light absorption and improved photovoltaic parameters.

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