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Influence of Passivation Layers on Optical Properties of Black Silicon SITA RAJYALAXMI MARTHI, ASAHIEL BANOBRE, N M RAVINDRA, New Jersey Institute Of Technology — Crystalline Silicon (c-Si) is the most abundant and widely used semiconductor. Si is a semiconductor with indirect bandgap. The average reflectance of c-Si is about 30% in the visible range of wavelengths. Standard Si solar cells are not entirely useful in the infrared spectrum region. In order to make Si useful in a wide spectral range, the surface of Si is modified to reduce the reflectance of c-Si. The silicon thus modified is called Black Silicon (BSi). In the present study, we present the influence of passivation on the optical properties of BSi. The optical properties of passivation layers such as SiO_2 , Si_3N_4 and Al_2O_3 , on BSi are examined in the wavelength range of 0.4 to 2.4 μm .

Sita Rajyalaxmi Marthi
New Jersey Institute Of Technology

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