

Abstract

Basic information concerning properties of contacts between various metals; i.e. silver, gold, tin, aluminium, silver paste and n- and p-type silicon wafers had been investigated. Schottky barrier contact was used as a solar cell. Ohmic contact was also applied for back contact of solar cells by using silicon wafers of n-type and p-type and some metal such as tin and aluminium were fabricated. The measurement of diffusion length of carriers in silicon wafers by means of photovoltaic effect gives the suitable pattern of Schottky barrier contact; that is the spacing of metallic fingers of about 300-400 microns. Spectrum response of Schottky barrier solar cell show better open-circuit-voltage at longer wavelength than that of PN Junction solar cell. A typical Al-n. Si Schottky barrier solar cell shows the open-circuit-voltage, $V_{oc} = 0.3$ volts, the short-circuit-current $I_{sc} = 2.7$ milliamperes, the fill factor F.F. = 0.37 and the energy conversion efficiency $\eta = 1-3$ % for cell area of 6 x 6 square millimetres. Schottky barrier solar cell under concentrated sunlight had been investigated. The efficiency of solar cell decrease with rising temperature and degree of concentration.