INTISARI

Celah energi pada semikonduktor, Eg, terletak diantara pita konduksi dan pita valensi. Besar dari celah energi Eg ini dapat ditentukan dengan cara mengukur arus yang dialirkan pada semikonduktor dengan variasi temperatur. Pada percobaan ini semikonduktor yang digunakan adalah dioda Silikon tipe 1N 4000, 1N 4001, 1N 4002, 1N 4003, 1N 4004, 1N 4005, 1N 4006, 1N 4007, 1N 4008 dan dioda Germanium tipe AMS 111, 1N 4148, OA 70.

Dari hasil percobaan diperoleh bahwa nilai Eg : untuk dioda Silikon 1N 4000 = 1,186 ± 0,004 eV, 1N 4001 = 1,084 ± 0,008 eV, 1N 4002 = 1,134 ± 0,006 eV, 1N 4003 = 1,150 ± 0,015 eV, 1N 4004 = 1,106 ± 0,016 eV, 1N 4005 = 1,144 ± 0,005 eV, 1N 4006 = 1,194 ± 0,015 eV, 1N 4007 = 1,156 ± 0,022 eV, 1N 4008 = 1,173 ± 0,025 eV. Untuk dioda Germanium AMS 111 = 0,742 ± 0,004 eV, 1N 4148 = 0,731 ± 0,021 eV, OA 70 = 0,701 ± 0,004 eV.

ABSTRACT

Energy gap in semiconductor, Eg, to lie between conduction band and valence band. The magnitude of this energy gap could be determined with by measuring the currents that flowed on the semiconductor with various temperature. On this experiment, the semiconductor that used was silicon diode type 1N 4000, 1N 4001, 1N 4002, 1N 4003, 1N 4004, 1N 4005, 1N 4006, 1N 4007, 1N 4008 and Germanium diode type AMS 111, 1N 4148, OA 70.

From the result of experiment it was found that energy gap value for Silicon diode 1N 4000 = 1,186 ± 0,004 eV, 1N 4001 = 1,084 ± 0,008 eV, 1N 4002 = 1,134 ± 0,006 eV, 1N 4003 = 1,150 ± 0,015 eV, 1N 4004 = 1,106 ± 0,016 eV, 1N 4005 = 1,144 ± 0,005 eV, 1N 4006 = 1,194 ± 0,015 eV, 1N 4007 = 1,156 ± 0,022 eV, 1N 4008 = 1,173 ± 0,025 eV. For Germanium diode AMS 111 = 0,742 ± 0,004 eV, 1N 4148 = 0,731 ± 0,021 eV, OA 70 = 0,701 ± 0,004 eV.