Kesan Halaju Putaran Gilapan Terhadap Peratus Potongan Hujung Sisi Pandu Gelombang Polimer SU-8 di atas Substrat Silikon

Mohammad Syuhaimi Ab Rahman[1], Fazlinda Ab Aziz[1], Noor Azie Azura Mohd Arif[1], Abang Anuar Ehsan[2] dan Kasmiran Jumari[1]

[1]Jabatan Kejuruteraan Elektrik, Elektronik dan Sistem,
Fakulti Kejuruteraan dan Alam Bina,
Universiti Kebangsaan Malaysia
43600 UKM Bangi, Selangor,
Malaysia

[2]Makmal Teknologi Fotonik,
Institut Kejuruteraan Mikro dan Nanoteknologi (IMEN),
Universiti Kebangsaan Malaysia
43600 UKM Bangi, Selangor,
Malaysia
E-mail: syuhaimi@vlsi.eng.ukm.my

ABSTRAK

Kajian ini memfokuskan kepada ciri-ciri gilapan bagi pandu gelombang polimer. Tujuan utamanya adalah untuk mengkaji bagaimana halaju putaran gilapan memberi kesan kepada panjang terpotong permukaan hujung sisi pandu gelombang polimer SU-8 di atas substrat silikon. Terdapat tujuh set halaju putaran yang dikenakan iaitu 50, 100, 150, 200, 250, 300 dan 350 rpm. Dari keputusan yang diperoleh, dapat disimpulkan bahawa peratus potongan bagi setiap halaju putaran adalah ≤ 0.5 % (50 rpm), 0.6 – 1.0 % (100 rpm), 3.8 – 4.8 % (150 rpm), 7.7 – 10.6 % (200 rpm), 15.7 – 18.3% (250 rpm), 25.6 – 27.4 % (300 rpm) dan 40.0 – 43.7 % (350 rpm).

Kata Kunci: Halaju putaran, polimer su-8, panjang terpotong, pandu gelombang planar.

ABSTRACT

This research have focused on polishing characterize of polymer based waveguides. The aims of this research are to study how polishing rotation speeds affect the length of cut end face SU-8 polymer on silicon substrate. There are seven sets of rotation velocities which are 50, 100, 150, 200, 250, 300, and 350 rpm. From the obtained result, it can be concluded that percentage of cut length for each rotation velocity is ≤ 0.5 % (50 rpm), 0.6 – 1.0 % (100 rpm), 3.8 – 4.8 % (150 rpm), 7.7 – 10.6 % (200 rpm), 15.7 – 18.3% (250 rpm), 25.6 – 27.4 % (300 rpm) and 40.0 – 43.7 % (350 rpm).

Keywords: Rotation speed, polymer su-8, length of cut, planar waveguide.