

## Preliminary on dielectric planar wave guide

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Abstrak

**ABSTRAK**

Specific performance of an optical waveguide can be achieved by solving the eigen value equation of the respective waveguide. A numerical method to obtain dispersion characteristics of a planar waveguide has been executed on a computer program which run on IBM PC or its compatible with 640 KB memory.

Coupler prism method was used to measure the waveguide parameters. A focused beam of TE or TM polarized mode of

He-Ne laser light is fed into the prism and enters the film of the waveguide. At coupling spot, where the beam strikes the prism base, the thickness  $C$  and the refractive index ( $n_2$ ) of the waveguide was measured. Using the developed numerical method in this study, the dispersion characteristics of a three-layer and a four-layer waveguides with  $n_1 = 1$ ,  $n_2 = 1.54$ ,  $n_3 = 1.447$  and  $n_1 = 1$ ,  $n_2 = 1.5$ ,  $n_3 = 1.6$ ,  $n_4 = 1.447$ . respectively, have been obtained.