

## Ellipsometric study of Si<sub>1-x</sub> Ge<sub>x</sub> alloy

### ABSTRACT

A report on ellipsometric studies of Si<sub>0.5</sub> Ge<sub>0.5</sub> and Si<sub>0.7</sub> Ge<sub>0.3</sub> thin films is described. The samples were earlier prepared from SiGe disks of 3ö diameter using RF magnetron sputtering and the films were deposited onto glass substrates at room temperature. Some of the optical properties were investigated using an ellipsometer. In this method, we investigate the changes in refractive indices,  $n$  and extinction coefficients,  $k$  with film thickness as well as the relevant dielectric constant,  $\epsilon$ . The results showed that, at a wavelength of 632.80 nm,  $n$  was found to increase with an increase of the germanium contents.

**Keyword:** Si<sub>1-x</sub> Ge<sub>x</sub>; Refractive index; Ellipsometer