Exp No : Date:

Refractive Index of the Material of a Glass slab

Aim: To determine the refractive index of a glass slab using a Traveling Microscope.

Apparatus: Glass Slab, Traveling Microscope, Lycopodium powder, paper etc.

Theory:

Refractive index of the material of the glass slab = $\frac{Real\ Thickness\ of\ the\ Glass\ Slab}{Apparent\ Thickness\ of\ the\ Glass\ Slab}$

Observations:

Value of One main scale division 1 MSD = mm

Number of Vernier Scale Divisions N = div

Least Count LC = **1 MSD – 1 VSD**

$= \frac{1\ MSD}{N}$ = mm

= cm

Total Reading = **MSR + (VSR x LC)**

Reading	Reading of the vertical scale of the Microscope when focused on the			Real Thickness $\mathbf{R_3 - R_1}$	Apparent Thickness $\mathbf{R_3 - R_2}$	n = $\frac{R_3-R_1}{R_3-R_2}$
	Cross-mark without Glass Slab	Cross-mark with Glass Slab	Lycopodium Powder on Glass Slab			
MSR (cm)						
VSR						
Total (cm)	R_1=	R_2=	R_3=			

Refractive index of the material of the glass slab = $\frac{Real\ Thickness}{Apparent\ Thickness}$

n = $\frac{R_3-R_1}{R_3-R_2}$ =

Result:

Refractive index of the material of the glass slab =