Finding the Index of Refraction

Of Lead Tungstate crystals ($PbWO_4$)

Snell's Law

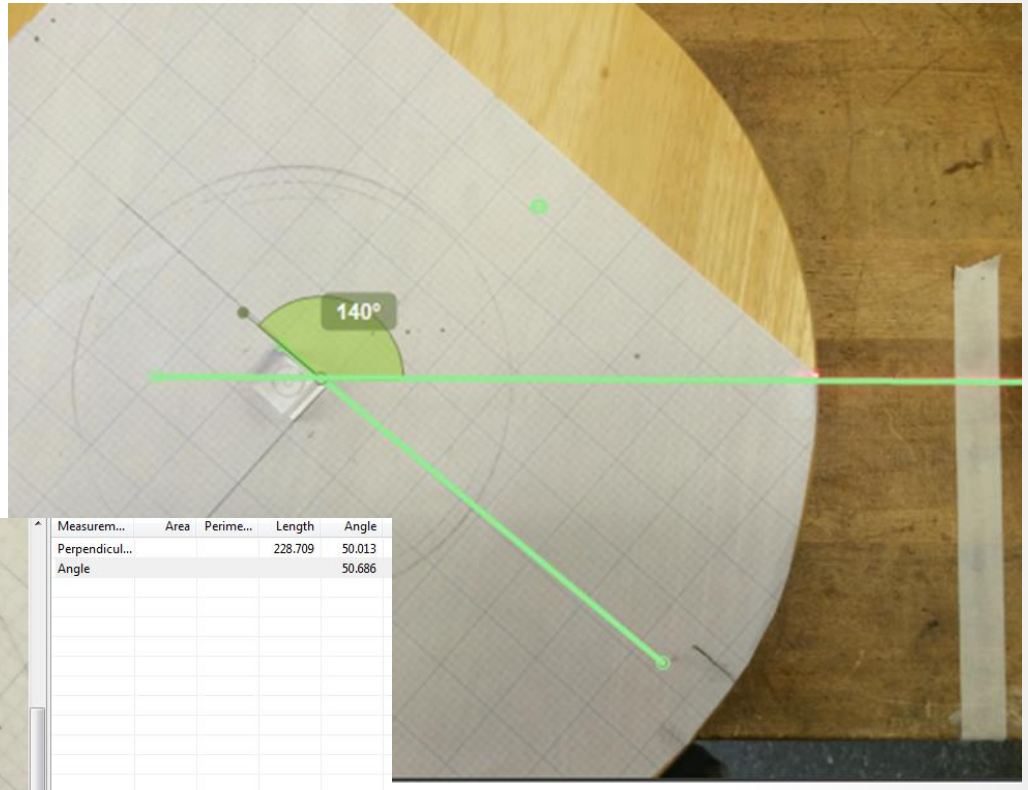
- n1*sin(ϑi) = n2*sin(ϑr)
- Since n1 is the reffractive index of air which is very close to 1, n2 can be fairly approximated by:

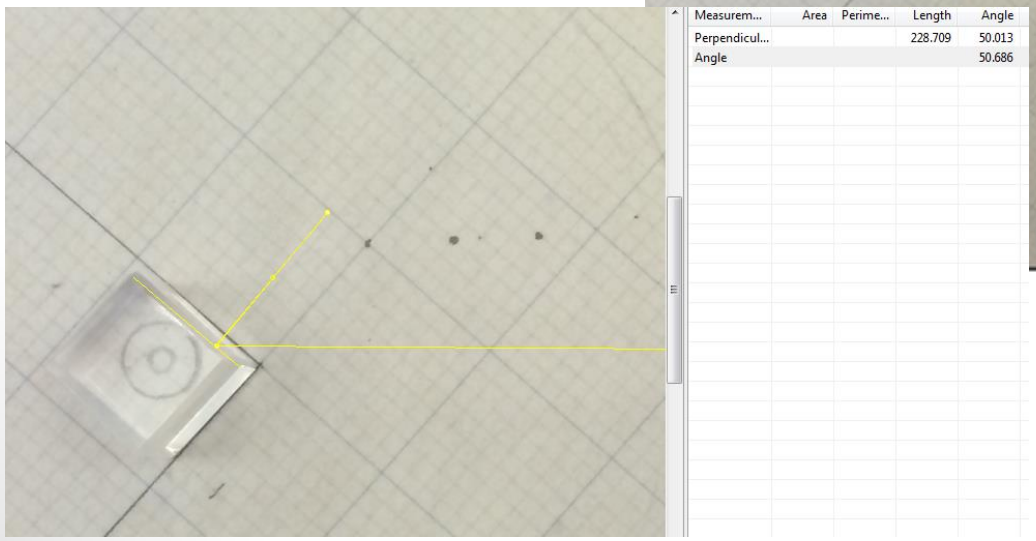
  n2 = sin(ϑi) /sin(ϑr)
- However, a more precise calculation, since the measurements are simpler, can be found with:

  n2 = sin((A+D)/2)/sin(A/2)

Measuring the angle incidence and displacement caused by refraction

Two different computer programs to measure the angle





Measurem...	Area	Perime...	Length	Angle
Perpendicul...			228.709	50.013
Angle				50.686