Dedication

To my beloved parents,

brothers,

sisters,

teachers

and my friends

Acknowledgment

I would like to express my thanks and gratitude to Dr. Hatim Mohamed El-Khair for his supervision and valuable advices that has rendered to me. I would like also to extend my thanks to ustaz Awad for his help. Pro. Wafig is also thanked for his advice. To all who help me directly or indirectly are thanked for their efforts. For those whom their names are not mentioned unintendly here, are also thanked.

الخلاصة

الغرض [illegible] **يد** [illegible] **β** [illegible] **44** [illegible] **w% 50** [illegible] **44.65** [illegible] **w% 50** [illegible] **β** [illegible] **w% 50** [illegible] **w% 20** [illegible] **يساوي 1.56** [illegible] **w% 50** [illegible] **1.558** [illegible] **وهذا w% 100** [illegible] **w% 50** [illegible] **w% 50** [illegible] **n Δ** [illegible]

Abstract

The basic work was to determine the refractive index of glucose and Arabic gum blended by using a polarimeter and laser light source in conjunction with a photocell and a laser power meter.

The results obtained have shown that the value of the specific rotation angle $\beta = 0.44$ at zero concentration. It is value was found to increase slowly to 44.65 at the higher concentration of 50W%. Above this limit the value of β remains unchanged. This behavior has been reflected on the measured refractive indices. The value of Δn for prepared sample was 1.56 at 20% concentration and 1.568 for 50W%. This value remain constant for the concentration ranging between 50W% and 100W%.

It is concluded that, the glucose and gum Arabic solution permits the tuneability of laser at concentration less than 50W% and at higher concentration the polarization is ineffective to produce a noticeable changes in refractive index Δn.

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