

تأثير استخدام الليزر الغازى على الخواص الطبيعية والميكانيكية لبعض الأقمشة القطنية والبولى استر

Effect of use Gaseous Laser on Natural and Mechanical Properties for some Cotton and Polyester Fabrics

م.د / طارق أحمد محمود عبد الله راشد

المدرس بشعبة النسيج – قسم التعليم الصناعى - كلية التربية جامعة حلوان

Abstract.

A laser word is formed from the initial characters of the following English phrase : ‘ Light Amplification by the Stimulated emission of Radiation ‘

- Laser radiation produces an increasing amplification of almost identical photons in distress , this amplification allows for a light intensity in the surface unit capable of physical alteration of the material .
- The gaseous laser produced by Helium / Neon was used along a wave-length $\lambda = 632$ nm . it has a red color and has a weak ability to obtain the laser beam and expose the cotton and polyester fabrics to this beam . and study the changes resulting from this exposure .
- The Helium / Neon laser is the first gas laser to come into existence , Neon in this mix play the role of lasers .
- Cotton is selected as a natural raw material in Egypt , the polyester material was also selected as a widespread industrial chemical in Egypt .
- The research studies the effect of the different speed and the number of times exposed to laser beams .
- Practical experiments were measured at the national institute of laser sciences at cairo university , some experiments were also measured at the national research center .

The research was targeted :

1. Effect of increasing the speed and number of times exposed to the laser samples .
2. Effect of exposure to textile samples to laser on mechanical properties of fabrics .
3. Effect of exposure to textile samples to laser on natural properties of fabrics .
4. Comparison of samples of natural fabrics and industrial fabrics samples after exposure to laser beam .