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COMPARATIVE STUDY USING ZINC OXIDE NANOPARTICLE ON SOME EGYPTIAN COTTON TEXTILES

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ABSTRACT

Today, a wide range of nanoparticles and nano structure to develop new clothes products which brings new properties for the final products. We used Egyptian cotton such as Giza 90, Giza80 and cotton blended G70 with poly-ester (65/35) which treated with different concentration of ZnO nanopaticles (1%, 3% and 5%) and polyvinyl pyrrolidone (PVP) (1% and 3%) as binder and measuring their properties such as tensile strength , elongation and fastness properties as well as X ray diffraction (XRD). The result showed that the concentration of ZnO nanoparticles (3:3) observed the highest strength in all varieties while in elongation %showed the lowest results in fastness observed for G70 blend with poly ester which resulted the highest value also in crysalinity index.

Key word: crystallinity index, mechanical properties, PVP, XRD, ZnO nanoparticles.