رقم البحث فى القائمة	٥
نوعية البحث	فردى

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عنوان البحث	**Assessment of the possibility of using nano cellulose to consolidate archaeological linen textiles - an experimental study on samples of modern linen fabrics**
مستخلص من رسالة ماجستير او دكتوراة	لا
ملخص البحث باللغة الانجليزية	The research deals with the evaluation of one of the most important nanomaterials used to strengthen the linen textiles, which suffers from many aspects of damage such as weakness, tearing, fragility and aging of the fibers, which makes them in a bad need of strengthening. The researcher prepared samples of natural linen with dimensions of 5 x 5 cm after washing them to get rid of the waxy substances suspended in it, and exposing them to thermal aging for 14 hours at a temperature of 60°c.To get samples, that are similar to the archaeological textiles. Then applying the treatment material consisting of nano cellulose (10-30 %) suspended in water or water and ethanol to strengthen the aging samples. and then re-exposing them to thermal aging again to test the effectiveness of the treatment material in the long run. As well as conducting all the tests and analyzes that evaluate the use of this strengthening material and its effect on improving the physical and chemical properties of antique linen textiles .The results of the visual examination came to confirm the homogeneity of the complete coverage of the treated material on the surface of the fibers, as the microscopic images showed a layer of the treated material covering the surface of the linen fibers. In addition to improving the physical properties of textile fibers by measuring the tensile strength and elongation, where the readings confirmed the increase in the durability of the fibers after applying the reinforced material with an emphasis on keeping the antique textiles reinforced with nano-cellulose materials at temperatures below 60 degrees, especially after the tests and analyzes proved that the fibers were affected. Results of colorimetric measurements confirmed of changing the morphological appearance of the fibers after treatment or after aging.