



جامعة السودان

بسم الله الرحمن الرحيم

**Sudan University of Science and Technology**

**College of Science**

**Department of Scientific Laboratory**

**ELECTRODEPOSITION OF PLASTIC BY COPPER**

*A Complementary research Submitted in Partial Full filament for  
the requirement for the degree of B.Sc. (honors) in Chemistry*

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# الآية

بسم الله الرحمن الرحيم

قال تعالى :

{شَهِدَ اللَّهُ أَنَّهُ لَا إِلَهَ إِلَّا هُوَ ۖ وَالْمَلَائِكَةُ وَأُولُو الْعِلْمِ قَائِمًا بِالْقِسْطِ} [آل عمران : 18]

صدق الله العظيم

# **DEDICATION**

**We would like to dedicate**

**This simple work**

**To:**

**Our fathers**

**To:**

**Our Mothers**

**To:**

**Our Brothers**

**To:**

**Our Colleague**

**To:**

**Our Friends**

**All whom love us**

# **Acknowledgment**

**Special thanks to our god ...**

**We Would like to express our sincere appreciation and  
gratitude to our supervisor**

**Dr : Mohammed Sulieman**

**for her lucid design of this research and help throughout  
this work**

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### **مستخلص البحث**

إن الطلاء الكهربى له مهام واسعة في الحقلين سواء في الحقل الإنتاجى أو الخدمى ويتم ذلك غالباً بطلاء معدن مادة رخيصة بمادة عالية نفيسة لها طلب كبير فى السوق .

يقوم الطلاء الكهربى بتحسين خواص المادة المراد طلاؤها من ناحية المظهر حيث يكسبها منظر جذاب مما يساعدها على جعلها مقاومة للتآكل ويزيد فى خواصه التوصيلية وذلك بأقل تكلفة .

عند طلاء البلاستيك نجد أنه غير موصل للكهرباء لذلك نقوم بعملية تنشيط سطح البلاستيك لزيادة توصيلية البلاستيك ويتم ذلك بغمره فى محلول حمض الكروميك الذى يعمل كمثبت للخطوة التى يليها وهى غمره مرة أخرى فى محلول كلوريد البلاتينوم ويجب أن تجفف البلاستيك قبل وبعد كل خطوة ليتم الطلاء بصورة جيدة وتم طلاء البلاستيك بالنحاس عند ظروف مختلفة مثل درجة الحرارة والتركيز للمحلول الإلكتروليتى والرقم الهيدروجينى وتمت الدراسة حيث أمكن طلاء 15 قطعة من البلاستيك .



## **Abstract**

The electroplating process as application were used in the two fields, in field production and service. often done with paint metal cheap material textured expensive invaluable have a great demand in the market.

The electroplating was used to improve the properties of the material to be repainted in terms of appearance, where earned stock attractive, helping them to make them resistant to corrosion and increases in conductivity properties and that the lowest cost.

In the present work plastic was electroplated by copper , the main problem is that plastic is not conductor so to overcome this problem sensitization of the substrate have been carried out. Different operating condition of electroplating has been studied

The suitable condition to electroplate plastic by copper was found to be concentration (0.1M), current value(0.5DC), pH(7).