

ملخص البحث رقم (١)

نوع البحث	سنة النشر	مكان النشر	عنوان البحث	اسم الباحث
منفرد	مقبول للنشر ٢٠١٧	Middle East Journal of Applied Science	Conservation Procedures of Ancient Washing Dish Bowl Exhibited in The Faculty of Applied Art's Museum, Helwan University	Saleh Mohamed Saleh

Abstract

This work focuses on treatment of brass washing dish bowl rests in Faculty of Applied Art's Museum. The objectives of this research is to present the conservation procedures of the washing dish bowl involving traditional techniques as mechanical, chemical cleaning, straightening of the twist decorative units and caring of the loose parts. Separated solid and powdered samples from the washing dish bowl were investigated and analyzed before and after treatment by using both scanning electron microscope coupled with energy dispersive X-ray spectroscopy and X-ray diffraction. They were used to determine the composition of the alloy, its corrosion products and the foreign materials adherent on the surface. EDX results indicated that washing dish bowl was made of brass alloy (62.5% copper, 36% zinc and 1.50% Fe and traces of Lead) and containing several impurities.

The previous daily activities and the inside climate of the museum environment during exhibition are the major factor of corrosion mechanism. XRD results revealed that the major copper corrosion compounds consist of malachite and atacamite. After finishing the mechanical treatment, dilute citric acid was a suitable solution in improving the object look by removing corrosion compounds mixed by dirt. Chloride ions were effectively removed from the brass washing dish with using sodium hydroxide.