ملخص البحث رقم (٢)

اسم الباحث	عنوان البحث	مكان النشر	سنة النشر	نوع البحث
Saleh Mohamed Saleh	Corrosion Mechanism of Iron Objects In Marine Environment An Analytical Investigation Study by Raman Spectrometry	European Journal of Science and Theology,	مقبول للنشر	منفرد

Corrosion Mechanism of Iron Objects In Marine Environment

An Analytical Investigation Study by Raman Spectrometry

Abstract

Iron is one of the most recovered historical materials from the marine environment. Two iron parts from historical ships were excavated from Paros Island, Greece. Even though hard, thick and non-porous crust from the marine sediments was found on the wrought iron surfaces, the most of these objects have remained in worst conditions caused by the corrosion process in marine environment. The main purpose of the Raman investigation and analysis was a classification and characterization of the corrosion compounds and their phases and the marine sediments by assignment of phases and comparison to standard reference materials.

Microraman spectrometry is a non-destructive technique, and the error rate of analysis result is lower than other methods. The instrumental condition of Raman spectra for investigation and analysis in the 100-3500 cm^{-1} wave number region allowed the characterization of solid deposits of iron and external encrustation. Discrimination between corrosion compounds by Raman spectroscopy has been demonstrated. The final results of this study revealed that goethite, hematite and lepidocrocite are the major minerals and akaganeite was highly detected in the rust.