



8th Chemistry days
الأيام الثامنة للكيمياء
8^{èmes} Journées de Chimie
المدرسة العسكرية المتعددة التقنيات
الشميد محمد الرحمن طالب
Ecole Militaire Polytechnique
Bordj El-Bahri, Algiers, Algeria
March 26-27, 2019

2

Comparaison of the Semi-Conducting Properties of Tin Sulfide Prepared by Chemical and Electrochemical Methods

Said KABOUCHE¹, Yamina LOUAFI², Mohamed TRARI³

^{1,2} Laboratory of Electrochemistry-Corrosion, Metallurgy and Inorganic Chemistry, Faculty of Chemistry, U.S.T.H.B., BP 32 El-Alia, Algiers 16111, Algeria

³ Laboratory of Storage and Valorization of Renewable Energies, Faculty of the Chemistry, U.S.T.H.B., BP 32 El-Alia, 16111, Algiers, Algeria.
saidchimieac@gmail.com

Abstract. The semiconducting properties of tin sulfide prepared by chemical and electrochemical methods have been characterized by electrochemical impedance spectroscopy (EIS) and cyclic potentiodynamic polarization. The observation of the morphologie wae done by scanning electron microscopy. Capacitance measurements have been employed to study the electronic properties of passive films. The first exhibit n-type semiconductor behavior and second p-type semiconductor for SnS. Electrochemical results show that the passive film that formed in the hydroxide solution is more homogeneous than that formed in the sulfide solution. It was seen the differences is found concerning E_{fb} and the second in the concentration of donors.

Keywords: SnS, Passivation, Electrochemical impedance spectroscopy, Semiconductor properties.