

ANTIBACTERIAL CHARACTERISTICS OF GOLD MOLYBDENUMTHIN FILM DEPOSITED BY ELECTROLYSIS CELL

Huda M. Jawad¹, Ahmed N. Abd¹, Sanaa R. Salim¹ and Nadir F. Habubi^{2*}

¹Department of Physics, College of Science, Mustansiriyah University, Baghdad, Iraq.

²Department of Physics, College of Education, Mustansiriyah University, Baghdad, Iraq.

*e-mail: nadirfadhil@uomustansiriyah.edu.iq

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ABSTRACT : The present work was focused on the prepare of gold molybdenum (AuMo) nanoparticles utilizing electrolysis method. These nanoparticle were deposited on to glass substrate preheated at 70°C via drop casting method to obtain nanostructured thin films. The prepared nanoparticles were examined TEM electron microscopy, while films were analysed by AFM atomic microscopy and XRD diffraction and UV-Vis spectrophotometer to study the optical properties. Antibacterial activity of nanoparticles has been investigated against many pathogenic bacteria, including *Escherichia coli*, *Staphylococcus aureus*, *Bacillus bacillus* and *Pseudomonas aeruginosa* using a well-spread method and the results showed that nanoparticles have an inhibitory effect against all types of pathogenic bacteria for diseases and 30 and 25 mm for aerosols, *E. coli*, *Bacillus subtilis*, *Staphylococcus aureus* and *Staphylococcus aureus*, respectively.

Key words : Gold molybdenum, electrolysis, bacteria, XRD.

INTRODUCTION

Electrolysis cells, otherwise called electrochemical cells for the most part comprise of two terminals associated with an outer wellspring of power (Cucu, 2013). The way that electrical vitality can create synthetic changes and the procedures dependent on it, called the 'electrolytic procedures', are broadly utilized for extraction of unadulterated metals from their minerals, (for example, aluminum, zinc, copper, magnesium, sodium and so forth). Assembling of different synthetic concoctions (for example, burning pop, potassium permanganate, hydrogen, oxygen, chlorine and so on), electrodeposition of metals including electroplating, electrotyping, electroforming, developing of destroyed parts in metallurgical, substance and different businesses (Douglas F Call, 2008). As found in the meaning of electrolyte, at whatever point any electrolyte gets broke up in water, its atoms split into cations and anions moving unreservedly in the electrolytic arrangement. Presently two metal poles are inundated in the arrangement and an electrical potential distinction applied between the bars remotely ideally by a battery (Jeffrey M Foley, 2010). These somewhat submerged poles are actually alluded to cathodes. The terminal associated with negative terminal of the battery is known as cathode and the anode associated with positive terminal of the battery is known

as anode (Younggy Kim and Bruce, 2011). The uninhibitedly moving decidedly charged cations are pulled in by cathode and adversely charged anions are pulled in by anode (Susana MIHAIU, 2011) (put the point of the work here).

MATERIALS AND METHODS

Gold colloidal nanoparticles have been set up by electrolysis cell. The cathodes of this cell are molybdenum plate as a positive anode and gold plate as a negative terminal. Water was utilized with hydrochloride HCl in the proportion of about 8:1 as an electrolyte fluid. The applied voltage was 6 V. Drop-throwing technique has been utilized to store the colloidal nanoparticles on glass tests. Where (20 × 20 mm²) glass substrates were utilized with a thickness of 1 mm. The drying procedure at that point set on a warmer at 70°C. Readiness of slender movies (AuMo). The shape and size of AuMo were explored utilizing XRD and AFM. (Fig.1) outlines the state of the electrolysis cell.

RESULTS AND DISCUSSION

It is clearly seen that the grown particles in nature the case of Au Mo the Centrosymmetric structure was identified (PDF Card: 00-012-0517). Diffraction planes of (020), (110), (310), (040), (006), (-312) and (411) corresponding to diffraction angles $2\theta = 10.14^\circ, 12.3,$