Serbian Microscopy Society | Српско Друштво за Микроскопију

MCM2019

PROCEEDINGS

from the

14th MULTINATIONAL CONGRESS ON MICROSCOPY

September 15–20, 2019, Belgrade, Serbia

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SEPTEMBER 15–20, 2019, BELGRADE, SERBIA

TITLE:

Proceedings from the 14th Multinational Congress on Microscopy, September 15–20, 2019, Belgrade, Serbia

PUBLISHERS:

University of Belgrade, Institute for Biological
Research "Siniša Stanković", National Institute of Republic of Serbia

Serbian Society for Microscopy, Serbia

FOR PUBLISHERS:

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ISBN 978-86-80335-11-7

PRINT:

Knjigoveznica i kartonaža Grbović M. Milica, M. Gorkog 43, Beograd 11000, Serbia
30 e-copies

IT6

Advances in instrumentation and techniques (SEM, TEM, SPM, etc.)

CHAIRPERSONS:

Daniel Kiener, Vladislav Krzyzanek

SEM-EDS analysis of gold mercaptotriazole crystals (Au-MT)

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An electrolyte based on gold complex with mercaptotriazole was synthesized in a wide pH range from acid to alkaline (pH=2-12). After synthesis of the electrolyte, detailed characterization of the complex in liquid and solid state in the whole range of its stability was performed. Synthesized solutions of gold complex based on mercaptotriazole are vaporized at room temperature to dry in order to obtain and characterize Au-MT in the crystalline form. Optical microscopy showed that the crystals obtained from solutions of different pH values are different in color, size and homogeneity. The most homogeneous (according to size and color) and the smallest crystals were obtained from the electrolyte with pH=9. Scanning electron microscopy (SEM) with energy-dispersive spectrometry (EDS) crystals of the complex of gold with mercaptotriazole has shown that the crystals obtained at different pH values differ in shape, size and homogeneity. The most homogeneous and at the same time the smallest crystals are obtained from electrolytes at pH = 9.

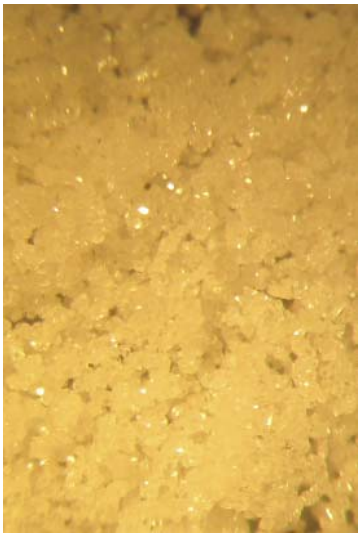

Figure 1. Au-MT crystals obtained from electrolytes at pH = 2, 4, 7 9 and 12

CIP – Каталогизација у публикацији
Народна библиотека Србије, Београд

621.385.833.2(082)(0.034.2)
620.187(082)(0.034.2)
66.017/.018(082)(0.034.2)
57+61(082)(0.034.2)
57.086.3(082)(0.034.2)

MULTINATIONAL Congress on Microscopy (14 ; 2019 ; Beograd)
MCM2019 [Elektronski izvor] : proceedings / 14th Multinational Congress on Microscopy, [September 15–20, 2019, Belgrade, Serbia] ; [editors, Jasmina Grbović Novaković, Nataša Nestorović, Dragan Rajnović]. – Belgrade : Serbian Society for Microscopy : Institute for Biological Research "Siniša Stanković" : Serbian Society for Microscopy, 2019 (Beograd : Knjigoveznica i kartonaža Grbović M. Milica). – 1 elektronski optički disk (CD-ROM) ; 12 cm

Sistemski zahtevi: Nisu navedeni. – Nasl. sa naslovne strane dokumenta. – Tiraž 30. – Bibliografija uz svaki rad

ISBN 978-86-80335-11-7 (IBRSS)

a) Електронска микроскопија – Зборници b) Наука о материјалима – Зборници c) Биомедицина - Зборници

COBISS.SR-ID 279354124