THE FIFTH YUGOSLAV MATERIALS RESEARCH SOCIETY CONFERENCE

YUCOMAT 2003

Programme
and
The Book of Abstracts

HERCEG NOVI, September 15-19, 2003

Organized by:
YUGOSLAV MATERIALS RESEARCH SOCIETY
and
INSTITUTE OF TEHNICAL SCIENCES OF THE SASA

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P.S.B.27.

NOBLE METALS BINDING ON THE MACROPOROUS POLY(GMA-CO-EGDMA) MODIFIED WITH ETHYLENEDIAMINE

A. Nastasović[1], S. Jovanović[2], D. Jakovljević[1], A. Onjia[3], S. Stanković[2]
[1]IChTM-Center for Chemistry, Belgrade, [2]Faculty of Technology and Metallurgy, Belgrade, [3]Vinča Institute of Nuclear Sciences, Chemical Dynamics Laboratory, Belgrade, Serbia and Montenegro

Macroporous crosslinked poly(glycidyl methacrylate-co-ethylene glycol dimethacrylate) copolymer, poly(GME), was synthesized by radical suspension copolymerization and modified with ethylenediamine, EDA. Useability of poly(glycidyl methacrylate-co-ethyleneglycol dimethacrylate) copolymer with attached EDA, poly(GME)-en, for the noble metals sorption from aqueous solutions was investigated. Sorption rate and capacities of poly(GME)-en for gold, platinum and rhodium, as well as pH dependence of Pt^{4+} ions sorption under non-competitive conditions were determined.

P.S.B.28.

MODIFICATION OF ETHYLENE-NORBORNEN COPOLYMER BY IRRADIATION WITH N^{4+} ION BEAMS

Z. Kačarević-Popović, N. Tjapkin, M. Šiljegović, I. Draganić
Institute of Nuclear Sciences "Vinča", Belgrade, Serbia and Montenegro

Most ion-beam surface modification efforts on polymers have been so far directed towards the effect on electrical properties because of its comercial importance (radio frequency shielding, antistatyc surfaces, battery membranes, conducting polymers, conducting paths in microelectronic, ferromagnetic polymers, photoresists, semiconducting polymers and optical waveguides). In this work the behavior of copolymer of ethylene and norbornen irradiated with 60 keV N^{4+} ions to the fluences of 1.0×10^{16} ions cm^{-2} was studied at low electric field strengths. The increase of electrical conductivity.and changes in dielectric properties.are directly related to the changes of chemical structure of the polymer. The property improvements (mainly attributable to conjugated double bond formation and crosslinking) were related to electronic energy transfer (excitation and ionization).