

**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 TECHNICAL SCIENCES OF THE SASA

<http://www.yu-mrs.org.yu>

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*P.S.B.31.*

**GLASS TRANSITION TEMPERATURE DETERMINATION OF MACROPOROUS COPOLYMER BY INVERSE GAS CHROMATOGRAPHY**

A.B. Nastasović<sup>1</sup>, A. Onjia<sup>2</sup>, S.K. Milonjić<sup>2</sup>, S.M. Jovanović<sup>3</sup>

<sup>1</sup>Institute for Chemistry, Technology and Metallurgy, Center for Chemistry, Belgrade, <sup>2</sup>Vinča Institute of Nuclear Sciences, Chemical Dynamics Laboratory, Belgrade, <sup>3</sup>Faculty of Technology and Metallurgy, Belgrade, Serbia and Montenegro

The glass transition temperature,  $T_g$ , of crosslinked macroporous glycidyl methacrylate, GMA, based copolymer was studied by inverse gas chromatography at zero surface coverage (IGC-ZC). The specific retention volumes,  $V_g^0$ , of test compounds with different chemical structure and polarity were obtained in the temperature range 333–413 K. The  $T_g$  value of investigated macroporous copolymer was determined from the maximum points of the plot  $\ln V_g^0$  vs.  $1/T$  for investigated test compounds.

*P.S.B.32.*

**OBTAINING CRITICAL RATE OF PLANE-TO-CELLULAR INTERFACE TRANSITION**

S. Nikolić<sup>1</sup>, V. Radojević<sup>2</sup>, A. Valčić<sup>2</sup>, A. Golubović<sup>1</sup>

<sup>1</sup>Institute of Physics, Zemun,

<sup>2</sup>Faculty of Technology and Metallurgy, Belgrade, Serbia and Montenegro

The structure of single crystals of a superalloy based on nickel is dendritic, and the chemical composition is very inhomogeneous. If the content of the solute rises during solidification, the solid-liquid interface changes from planar to a cellular and finally to a dendritic one. The exact moment of the transition from a cellular to a dendritic structure is not clearly defined in the literature. The critical rate of plane-to-cellular interface transition,  $R_{pc}$ , was defined and calculated.