

Československá spektroskopická společnost



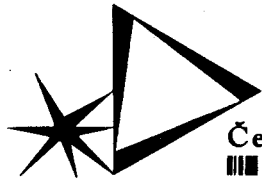
9<sup>th</sup> CZECHOSLOVAK  
SPECTROSCOPIC CONFERENCE

WITH INTERNATIONAL PARTICIPATION

ABSTRACTS

ČESKÉ BUDĚJOVICE

June 22. - 24. 1992



Československá spektroskopická společnost

9<sup>th</sup> CZECHOSLOVAK

SPECTROSCOPIC CONFERENCE

WITH INTERNATIONAL PARTICIPATION

ABSTRACTS

*ČESKÉ BUDĚJOVICE*

*June 22. - 24.1992*

### 3-DIMENSIONAL ELECTRON IMPACT MASS SPECTRA OF DIAZODIARYLMETHANES AND CYCLIC $\alpha$ -DIAZODIKETONES

J. Kuruc <sup>a</sup>, E. Kardošová <sup>a</sup>, L. L. Rodina <sup>b</sup>, V. A. Nikolaev <sup>b</sup>

<sup>a</sup> Department of Nuclear Chemistry, Faculty of Science,  
Comenius University, CS-84215 Bratislava, C.S.F.R.

<sup>b</sup> Department of Organic Chemistry, Faculty of Chemistry,  
Sankt-Peterburg State University, RF-199034 Sankt-Peterburg,  
Russian Federation

In this work we have measured the electron impact mass spectra of diazodiarylmethanes (diazodiphenylmethane, **Ia**; phenyl-para-methoxyphenyldiazomethane, **Ib**; phenyl-para-biphenyldiazomethane, **Ic**; 10-diazonaphthoquinone, **Id** and 9-diazothioxanthene, **Ie**) and cyclic  $\alpha$ -diazodiketones (2-diazo-1,3-cyclohexanedione, **IIa**; 2-diazo-4,4-dimethyl-1,3-cyclohexane-dione **IIb**; 2-diazo-5,5-dimethyl-1,3-cyclohexanedione, **IIc**; 2-diazo-4,6-dioxo-5,5-dimethyl-1,3-cyclohexanedione, **IId**; and 2-diazo-5-phenyl-1,3-cyclohexanedione, **IIe**). The mass spectra were determined on a Varian MAT 111 instrument with a source temperature of 120 °C, ionising electrons of 15-70 eV and 150  $\mu$ A and sample reservoir laboratory temperature and presented as 3-dimensional mass spectra: In all the investigated diazocompounds, molecular ions with relatively small intensity (0.08-42 % of rel. abunds at 70 eV) were registered, which increases gradually with the reduction of energy of electrons. The dominant direction of fragmentation of these diazocompounds is primary elimination of N<sub>2</sub>. Doubly-charged ions were observed in the mass spectra of diazodiarylmethanes. In mass spectra of **IIa-c,e** we observed the elimination of CO group after primary elimination (M-N<sub>2</sub>). This can be explained by the fact that after the elimination of N<sub>2</sub>,  $\alpha$ -ketoketenes are formed via Wolff rearrangement. Molecule **IId** does not undergo Wolff rearrangement leading to the formation of  $\alpha$ -ketoketenes, rather it is subjected to further fragmentation after the electron impact. For all investigated diazocompounds fragmentational schemes were proposed.