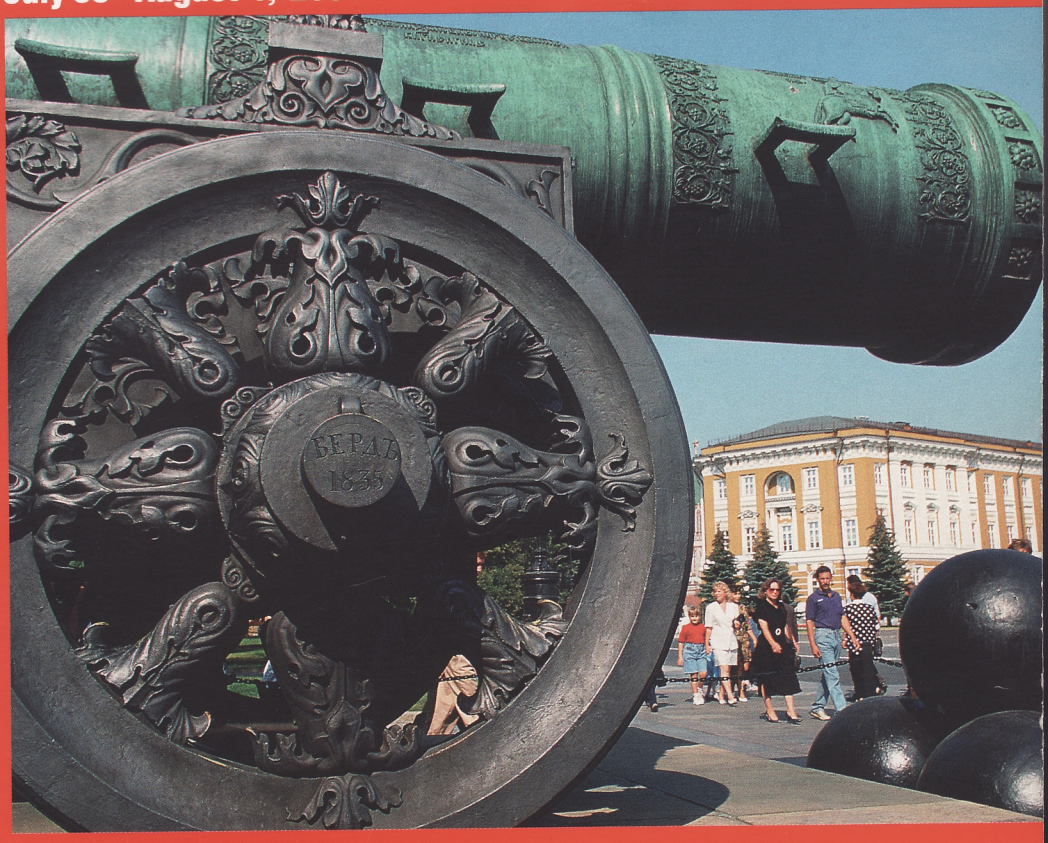
ICP XX

International Conference on Photochemistry

Moscow
July 30–August 4, 2001



BOOK OF ABSTRACTS

Conference Sponsorship
The XX-th ICP is being sponsored by the following organizations:
Russian Academy of Sciences
Ministry of Industry, Science and Technology
Russian Foundation for Basic Research
Photochemistry Center

Book of Abstracts
Abstracts of Plenaty and Invited Lectures, Oral Communications and Posters presented on XX International Conference on Photochemistry.
July 30 August 4, 2001, Moscow, Russia
Edited by Prof. Alexander Chibisov

ICP-XX, Russian Academy of Sciences, Photochemistry Center
7a Novatorov St., Moscow 117421, Russia
Telephone: 7(095) 935 0207, 936 7292. Fax: 7(095) 936 1255
www.photonics.ru
icp@photonics.ru

ISBN 5-89802-006-3

THE 1-BROM-2-PHENYLETHENE AND (1-PHENYL-2-BROMETHENYL)DIPHENYLPHOSPHINE PHOTODIMERIZATION IN HEXANE

M.N. Bukina, A.V. Barmasov, V.E. Kholmogorov

Institute of Physics, St.Petersburg State University, Ulianovskaya ul. 1a, Petrodvorets, St.Petersburg 198504 Russia
E-mail: kholm@pobox.spbu.ru

M.V. Sendjurev

St.Petersburg State Technological Institute (Technical University), St.Petersburg, Russia

PP104

Photochemical reactions as a result of UV-irradiation (254 nm) of 1-brom-2phenylethene (I) and (1-phenyl-2-bromethenyl)diphenylphosphine (II) in hexane were studied by methods of absorption and luminescence spectroscopy. It is discovered that after the irradiation of I absorption spectrum changed and intensive luminescence (340-410 nm) appeared. Formation of 1,4-diphenylbutadiene as a result of this photochemical reaction is confirmed by the comparison of spectra of irradiated solution I and corresponding spectra of the latter.

Similar spectral changes were observed after the irradiation of solution II. In absorption spectrum maximum of short-wave band is shifted from 220 nm to 230 nm, and absorption in the region of 270 nm decreases, that (as it was cleared up by model experiments) is concerned with phosphorus photooxidation. Besides new weakly intensive absorption band appears in the near UV- region (> 300 nm), which belongs to the reaction product.

The intensive luminescence (380-500 nm) appeared. The emission spectrum band has peak at 412 nm and shoulders at 390 and 430 nm. The luminescence excitation spectrum, that in this specific case (low optical density) is close to the adsorption spectrum of final product, has peak at 345 nm and shoulders at 303 and 318 nm. The oxidation of phosphorus takes place in the process of photoreaction. Spectra of photoreactions products are similar, except the long-wave shift of luminescence of product of II irradiation (2,400 cm^{-1}).

From the above data one can suppose that as a result of UV-irradiation action photodimerization of II with formation of 1-4-bis(diphenylphosphoroyl)-1,4-diphenyl-1,3-butadiene takes place.

Author Index

Тезисы конференции
Тезисы, представленные на XX Международной конференции по фотохимии.
Москва, 30 июля–4 августа 2001 года
Редактор: профессор А.К. Чибисов

Подписано в печать 29.06.01. Формат 70x100 $^{1}/_{16}$. Бумага офсетная. Печать офсетная. Усл. печ. л. 38.
Тираж 500 экз. Заказ 454.

ЗАО НЦМИ (ИД №04899)
117421, Москва, ул. Новаторов, 7а. Тел: 7(095) 935 0003

Отпечатано с готовых диапозитивов в ООО «Тип. ИПО Профиздат».
109044, Москва, Крутицкий вал, 18.

ISBN 5-89802-006-3