

## Foreword

The kinetics and mechanism of reactions involving electronically excited radicals is a division of physical chemistry and high-energy chemistry, which was developed about 30 years ago. Advance in the field is closely related to the solution of fundamental problems of the theory of electronic structure and reactivity as well as of the practical tasks concerning the utilization of flash and laser light sources and the application of various materials in nuclear and aerospace engineering.

To date, an extraordinary amount of experimental data (although sometimes controversial) on the reactions of electronically excited radicals has been compiled in the literature. However, no attempts have been made to summarize this material, which can be explained both by the incompleteness of these studies and by the vagueness of some concepts. In the authors' opinion, the material compiled in the field has to be summarized, and this book is an attempt to do this. In selecting reference materials, the authors focused their attention first of all on the reliable identification of intermediate species by different experimental and theoretical methods because inaccurate assignment can lead to serious errors in interpreting the mechanism of various processes.

For many years, the authors' activities in the field of radical photochemistry have been stimulated by pioneering works of V.V. Voevodskii, N.M. Emanuel, A.L. Buchachenko, V.K. Milinchuk, V.D. Pokhodenko, J. Willard, K. Tsuji, and many others.

We are grateful to our colleagues whose experimental work and fruitful criticism supported us for many years and eventually promoted the appearance of this book.

In conclusion, the authors would like to claim responsibility for possible errors and incorrectness in the text and state that Chapter 6 was written in collaboration with Dr. V.I. Pergushov whereas Chapter 7 was written in the coauthorship of Dr. E.N. Seropegina.