

Preface

Recently, a number of combustion-related technical conferences have been organized by various entities. They usually address very specialized topics or a number of topics with several parallel sessions. The latter, while providing an opportunity for the researcher to get exposed to the state-of-the art of science and technology, limits the attendance to specific sessions due to the parallel presentations in other sessions. So there is a need for technical conferences that balance this predicament and provide the opportunity for exposure in a wider sense, without missing other papers of interest presented in another session. With this in mind, we have organized this Second International Symposium on Nonequilibrium Processes, Combustion, and Atmospheric Phenomena, covering a variety of topics in combustion, plasma, and atmospheric pollution without any parallel sessions ensuring that the full benefit of the Symposium will be available to all participants who have taken the time and effort to attend this forum.

The objective of the Second Symposium is to provide a forum for international experts to discuss novel approaches to combustion with high efficiency and low pollutant emission, to address the issues of combustion-generated pollutants and technogeneous aerosols, aviation-produced particles and their environmental effects, and application of plasma and combustion for production of nanoparticles and surface treatment.

The scope of the Symposium includes fundamentals of combustion and detonation with the emphasis to emission problems, pollutant formation chemistry, in particular, formation of soot, chemi-ions, sulfur and nitrogen containing species, and polycyclic aromatics, physics and chemistry of exhaust-related clusters and aerosols including liquid aerosols, ice particulates, and charged particles, and assessment of accompanying environmental effects. These topics are very relevant in today's field of research.

Sufficient care has been taken to logically select and distribute the papers for the various sessions and to maintain a flow of the subject

dealt with. We are pleased with the overwhelming response from the international scientific and technological community to our request for papers. There are 89 papers written by 279 scientists and engineers from 10 countries. We have carefully edited the submittals and present them in two volumes. The first volume entitled “Combustion and Detonation” covers the combustion and detonation related topics, while the second volume entitled “Plasma, Aerosols, and Atmospheric Phenomena” covers the topics dealing with plasma physics and chemistry as well as with aerosol and atmospheric sciences.

Any endeavor of this nature requires the dedicated service of several individuals. We take this opportunity to thank Ms. Olga Frolova and the personnel of TORUS PRESS responsible for compiling and publishing these volumes. We are thankful to Academician Alexander Berlin, Academician Oleg Favorskii, Academician Alexander Merzhanov, and Prof. Vladimir Skibin for their valuable advices and encouraging support. We are grateful to Prof. Vladimir Veretennikov, Dr. Alexander Lebedev, Ms. Olga Rein, and Ms. Natalia Titova for their decisive contribution in organizing the Symposium.

We thank the members of the International Advisory Committee of the Symposium for their agreeing to spare some of their time in elaborating the technical program of the meeting, and to plenary speakers for agreeing to deliver invited lectures on the challenging issues of the modern science. The success of this kind of effort depends mainly on the contributors and the participants. We thank all Symposium participants for being a part of this endeavor in bringing the state-of-the-art of the combustion, plasma, aerosol, and atmospheric science for discussion and dissemination.

Everything comes at a price — and we express our appreciation to the U.S. Office of Naval Research*, Russian Foundation for Basic Research, Department of Chemistry and Material Sciences of the Russian Academy of Sciences, and Moscow Government for their sponsorship.

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