

Preface

The International Symposium on Nonequilibrium Processes, Plasma, Combustion, and Atmospheric Phenomena is a forum for international experts in such intrinsically interrelated fundamental areas as physical and chemical kinetics, physics of low temperature and cluster plasmas, physics of shock and detonation waves, physics and chemistry of aerosols and nanoparticles, combustion and atmospheric chemistry, physics and chemistry of high-speed flows, plasma and laser chemistry, plasma, laser and combustion assisted technologies. It covers the topics in kinetics of elementary processes, fundamentals of ignition and combustion, novel combustion concepts including plasma-assisted and laser-induced combustion, combustion, plasma and laser generated aerosols and nanoparticles, fuel reforming, synthesis of nanomaterials, gaseous and particulate pollutant formation, pollution control and impact of pollutant emission on the atmospheric chemistry and climate. All topics are very relevant to up-to-date research.

The First Symposium was held in St. Petersburg, Russia, July 8–11, 2003, and was dedicated to the memory of N. N. Semenov, a founder of the chain-branching reaction theory and a Nobel Prizewinner. The Second, Third, Fourth, and Fifth Symposia moved to Sochi, Russia (October 3–7, 2005; June 25–29, 2007; October 5–9, 2009; and October 1–6, 2012), the new venue well accepted by the scientific community. Therefore, the Sixth Symposium is also organized in Sochi in the period from October 5 to 10, 2014.

We are pleased with the response from the international scientific and technological community. There are 46 papers submitted by 133 scientists and engineers from 10 countries. The contributions were edited and formatted and appear in this volume which is the continuation of the book series [1–7] published since the first Symposium in Saint Petersburg.

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 this volume. We are thankful to Academician Alexander Berlin and Academician Oleg Favorskii for their valuable advices and encouraging support. We are grateful to Ms. Olga Rein and Dr. Alexander Lebedev for their decisive contribution in organizing the Symposium.

We thank the members of the International Advisory Committee of the Symposium for their participation in elaborating the technical program of the meeting, and to plenary speakers for their excellent presentations on the challenging issues of modern physics and chemistry. We are indebted to the Symposium participants for being a part of this endeavor in bringing the state-of-the art of combustion, plasma, aerosol, and atmospheric science, for fruitful discussions and dissemination.

We express our appreciation to the Department of Chemistry and Material Sciences of the Russian Academy of Sciences, N. N. Semenov Institute of Chemical Physics, P. I. Baranov Institute of Aviation Motors, and Combustion Council of Russian Academy of Sciences for friendly support of this regular event.

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References

1. Roy, G. D., S. M. Frolov, and A. M. Starik, eds. 2003. *Combustion and atmospheric pollution*. Moscow: TORUS PRESS. 680 p. ISBN 5-94588-021-3.
2. Roy, G., S. Frolov, and A. M. Starik, eds. 2005. *Combustion and pollution: Environmental impact*. Moscow: TORUS PRESS. 312 p. ISBN 5-94588-030-2.
3. Roy, G., S. Frolov, and A. M. Starik, eds. 2005. *Nonequilibrium processes*. Vol. 1: Combustion and detonation. Moscow: TORUS PRESS. 440 p. ISBN 5-94588-033-7.
4. Roy, G., S. Frolov, and A. M. Starik, eds. 2005. *Nonequilibrium processes*. Vol. 2: Plasma, aerosols, and atmospheric phenomena. Moscow: TORUS PRESS. 392 p. ISBN 5-94588-034-5.

5. Roy, G., S. Frolov, and A. M. Starik, eds. 2007. *Nonequilibrium processes: Plasma, combustion, atmospheric phenomena*. Moscow: TORUS PRESS. 120 p. ISBN 978-5-94588-047-4.
6. Roy, G. D., S. M. Frolov, and A. M. Starik, eds. 2009. *Nonequilibrium phenomena: Plasma, combustion, atmosphere*. Moscow: TORUS PRESS. 498 p. ISBN 978-5-94588-067-2.
7. Starik, A. M., S. M. Frolov, eds. 2012. *Nonequilibrium processes in plasma, combustion, and atmosphere*. Moscow: TORUS PRESS. 482 p. ISBN 978-5-94588-121-1.

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