

PREFACE

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The collection of papers presented in this special issue were first published with others in the *Proceedings of the VIII Minsk International Seminar on Heat Pipes, Heat Pumps, Refrigerators, Power Sources*, which was held in Minsk, Belarus, on September 12–15, 2011. This was part of the regularly held Minsk International Seminar and Exhibition, which has been undertaken since 1993 under the auspices of the New Independent States (NIS) Scientific Association “Heat Pipes,” Luikov Heat and Mass Transfer Institute, National Academy of Sciences, and some other Belarus ministries and institutions. The previous seven editions of this conference were successfully launched in 1993, 1995, 1997, 2000, 2003, 2005, and 2008. In view of the wide interest shown in the topic at this time, there are several papers included here that are concerned with heat transfer processes, energy saving technologies, nature friendly machinery, and the widespread use of electronics in both space and terrestrial applications. Heat pipes are good tools that are used to perform thermal management and increase efficiency. These devices are easily integrated into multistage adsorption systems, and they ensure the heat and mass recovery from one stage system to another. Renewable energies are the key players regarding world energy supply security and in the reduction of fossil fuel dependency and harmful emissions to the environment. The golden combination of the modern heat transfer components (heat pipes), miniature heat exchangers, nanofluids, efficient energy recovery systems, and the new power sources of energy (fuel cells) is an efficient tool that is used to solve problems of energy conservation and ecological safety.

The main goal of such conferences is to provide an opportunity for scientists and engineers from the NIS and its neighboring countries to meet researchers and specialists from Western countries and leading world companies in the field of electronic cooling systems, heat pipes, sorption heat pumps, and refrigerators. The main goal of the Minsk International Seminars is to combine the efforts of the heat and mass transfer scientists, heat pipes, and sorption technologies specialists to solve the problems of heat and mass transfer enhancement in nature friendly devices such as electronic equipment,

heat pumps, refrigerators, heat exchangers, gas storage, and transportation technologies. Performance of new energetic systems for gas adsorption, nanotechnologies, and superconductivity is attracting interest within today's context of environmental issues that need to be addressed. We believe that these conferences, which deal with these scientific matters, will promote personal contact between scientists and engineers from Eastern and Western European countries as well as the leading world countries. The VIII Minsk Seminar Proceedings incorporate about 70 papers, including 14 invited lectures. More than 100 participants attended this seminar, which represented 17 countries.

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