



PREFACE

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Dear Readers and Conference Participants

The 10th International Conference on Compressors and Refrigerants 2021 is organised under the auspices of the International Institute of Refrigeration for the tenth time. For 25 years, this conference was an event gathering a group of professionals in the field of refrigeration, air conditioning and heat pump engineering from around the world, from research institutions and industry. It has also become an important contribution to the development of cooperation and contacts in the Central and Eastern Europe, as it is the only conference organized under the auspices of the IIR in this part of Europe. Hence, in recent years, this conference has become a forum where achievements from many research centres and industry were presented.

For this reason, we deserve special words of thanks for the many years of effort to organize this event for the Slovak Refrigeration Association, and especially Dr. Peter Tomlein - thanks to whom the great work and continuous initiative were able to take place with great results.

The 10th International Conference on Compressors and Refrigerants has a special value resulting from the uniqueness of its scope, because the main substantive topics are all aspects related to the development of compression technology. During previous editions of this conference, the sessions were also accompanied by demonstrations and technical workshops demonstrating practical aspects of the development of compressors technology for refrigeration and heat pumps engineering. During all of the editions of this conference, many papers were presented on a new trends for refrigeration engineering connected with jet ejector technologies. During this edition of the conference, two sessions are devoted to this new and interesting research and development area.

This conference is also a forum for presentation of the issues related to the application of new working fluids for refrigeration and heat pumps engineering - which should not come as a surprise when you consider how big and rapid changes are observed in this field. As a result - the conference presents many issues resulting from the use of new, pro-ecological working fluids in terms

of heat transfer, technical development and modelling of unconventional solutions for refrigeration systems and heat pumps, progress in the use of renewable energies and waste heat in refrigeration and air conditioning engineering, as well as practical aspects of operation, maintenance and measurements in refrigeration, air-conditioning and heat pump systems.

The present edition of the conference consists of twelve sessions:

- plenary opening session – devoted to issues of working fluids in refrigeration and heat pumps engineering;
- reciprocating compressors (two sessions);
- rotary, scroll, screw compressors;
- ejector and centrifugal compressors (two sessions);
- technologies with CO₂, ammonia and hydrocarbons;
- refrigerants and technologies and invited papers (two sessions);
- field measurements;
- meeting of the International Institute of Refrigeration commissions B1, B2, E1, and E2;
- summary session.

We thank the authors of about 40 papers for their effective contribution to this edition of the conference.

Our conference goals is to assemble the well-known experts to present papers of immediate or general interest, to provide a forum for the presentation of applied papers on good current practice and research papers on good future practice and to provide an atmosphere for the general exchange of engineering information, problems and solutions will be surely successfully achieved. Therefore, we hope that the 10th anniversary edition of the conference will be successful for its participants and that the time spent together will become a source of further development and cooperation. Enjoy the conference!