

## Editorial

Since 2007 *High Temperatures – High Pressures* publishes the invited submissions selected from the presentations at International Workshops on Subsecond Thermophysics (IWSSTPs), which provide a forum for the exchange of knowledge, experience and ideas on the latest developments and trends in the field of subsecond thermophysics as well as to promote cooperation between academia, research institutions and industry.



This special issue presents a selection of papers presented at the 11<sup>th</sup> IWSSTP which took place on June 21–24, 2016. For the first time in the long history of the IWSSTP, the Workshop was held in Poland. The organization of this prestigious scientific event put the Foundry Research Institute in charge and by the decision of the International Organizing Committee it took place in Krakow, one of the most important scientific, historical, and cultural centers of Poland.

As previous well-established workshops, the 11<sup>th</sup> IWSSTP was focused on experimental, theoretical, simulation, and applied aspects of the thermophysical behavior of matter in the millisecond to picosecond time regimes. Among others, it includes rapid resistive or inductive heating (volume), pulsed laser heating (surface), levitation techniques. The 11<sup>th</sup> IWSSTP emphasized the developments of experimental techniques to measure the materials thermophysical properties at high temperatures and to study the behavior of matter under conditions near and far from thermodynamic equilibrium.

In total 59 participants from 12 countries took part in the 11<sup>th</sup> IWSSTP, including Austria (4), Canada (1), France (1), Germany (16), Japan (1),

Kazakhstan (2), Poland (23), Russia (3), Serbia (1), Spain (1), Switzerland (1) and USA (5). It is important to highlight that 10 PhD students had the opportunity to present and to discuss their results with world-class experts.

The 3-day Program of the 11<sup>th</sup> IWSSTP was divided into 10 sessions. Totally 48 contributions were presented, including plenary lectures (2), invited lectures (5), oral presentations (26) and posters (13). Besides plenary lectures and posters, 33 oral presentations (invited and regular) were given in thematic sessions dedicated to Measurement Techniques (9), Modelling and Theory (4), Processing (8) and Thermophysical Properties (12).

By the decision of the International Organizing Committee, the next 12<sup>th</sup> IWSSTP will be held in Cologne, Germany in 2019. It will be chaired by Dr. Jürgen Brillo from the Institute of Materials Physics in Space at the German Aerospace Center (DLR).

This issue of *High Temperatures – High Pressures* collects nine articles that represent the expanded versions of the 11<sup>th</sup> IWSSTP contributions subjected to full peer review procedure. The topics include challenges in measurement techniques, new look on non-equilibrium high temperature phenomena and practical aspects of subsecond thermophysics. We hope that these papers reflect the consistent survey on the progress, the latest advances and the most innovative developments in the field of high temperature materials science and it will be invaluable to scientists, engineers and students.

I would like to express my best gratitude to all participants who share their knowledge, expertise and best practices as the key factors contributing to significant discoveries in science and technology. Special thanks are directed to the authors of selected papers for their contributions as well as to the reviewers of this special issue.

Special thanks are directed to the World Foundry Organization, the Foundry Research Institute, industrial partners and manufacturers of measurement equipment for their support of the 11<sup>th</sup> IWSSTP. Many thanks go as well as to the members of the International Organizing Committee: Konstantinos BOBORIDIS (Institute for Transuranium Elements, EC-JRC, Germany), Ivan EGRY (RWTH Aachen University, Germany), Erhard KASCHNITZ (Austrian Foundry Research Institute, Austria) Gernot POTTACHER (Graz University of Technology, Austria) and Mikhail SHEINDLIN (Joint Institute for High Temperatures, Russian Academy of Sciences, Russia). Iván Egrý is additionally acknowledged in his function as Co-Editor-in-Chief of *High Temperatures-High Pressures* for managing the timely publication of this issue. Finally, I express my sincere thanks to the members of

the Local Organizing Committee for their efforts in arranging this important scientific event.

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