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PREFACE

Thirteenth International Workshop on Subsecond Thermophysics (IWSSTP-13)

Attendees of the IWSSTP-13 at the ZKM Center for Art and Media in Karlsruhe, Germany

Thirty four years ago, the First Workshop on Subsecond Thermophysics was held at the National Bureau of Standards (presently the National Institute of Standards and Technology) in Gaithersburg, Maryland, USA. It was organized by Ared Cezairliyan, an internationally acclaimed pioneer in this field, in order to "provide a forum for discussions on both experimental and theoretical aspects of thermophysical behavior of matter subjected to thermal changes in short times (millisecond to picosecond time regimes)". This has clearly remained the main objective of the, now well-established, series of Workshops that followed. Strong emphasis continues to be placed on measurements at high temperatures "where rapid pulse-heating techniques

provide a unique approach to obtaining much needed properties data and to understanding the fundamental mechanisms governing the behavior of matter under conditions near and far removed from equilibrium". Nevertheless, while maintaining pulse-heating as one of its strongest pillars, the Workshop has not remained static. It has evolved in order to adapt to the interests and needs of the Subsecond Thermophysics community by expanding its scope to closely linked subject areas. For instance, the past few workshops have embraced transient techniques in a broader sense, such as modulation and laser flash techniques for measurement of thermal properties of solids at elevated temperatures, as well as containerless and drop-assisted techniques for properties of liquid metals and alloys, to name just a few examples. This year, several talks and posters focused on the use of pump-probe thermoreflectance techniques (such as time domain thermoreflectance (TDTR) and steady state thermoreflectance (SSTR)), including tutorials on these thermoreflectance metrologies from Netzsch GmbH and Laser Thermal, Inc.

This special issue contains the proceedings of the Thirteenth International Workshop on Subsecond Thermophysics, held in Karlsruhe, Germany, on June 7–10, 2022 (https://iwsstp.org/). The Workshop was organized by the European Commission's Joint Research Centre-Karlsruhe (JRC). It hosted forty two participants from eight countries (Germany, USA, France, Austria, Italy, Poland, Serbia and Switzerland). Twenty nine oral presentations were delivered in ten regular sessions. These oral presentations included the two aforementioned thermoreflectance tutorials, introductory remarks and an overview of nuclear research at the JRC by Dr. Rudy Konings, and a historical review of critical point data and ohmic pulse heating measurements of high melting temperature metals delivered by Prof. Gernot Pottlacher, who was awarded the IWSSTP Lifetime Achievement Award for his contributions to the field of Subsecond Thermophysics. Eight poster presentations remained on display throughout the duration of the Workshop. As always, an informal and friendly atmosphere was chosen to stimulate vivid discussions and encourage exchange and cooperation among participants. It was our impression that the attendees had an enjoyable stay in Karlsruhe.

Organization of the Workshop was greatly supported by the additional members of the International Organizing Committee, Juergen Brillo (DLR), Iván Egry (RWTH Aachen University), Erhard Kaschnitz (Austrian Foundry Research Institute), Douglas Matson (Tufts University), Gernot Pottlacher (Graz University of Technology), and Natalia Sobczak (Polish Academy of Sciences). Iván Egry is additionally acknowledged in his function as Co-Editor-in-Chief of High Temperatures-High Pressures for managing the timely publication of this issue. The support of Rudy Konings, Head of the Nuclear Fuel Safety Unit, and Gabriele Tamborini, JRC Nuclear Communication Coordinator, is gratefully acknowledged. Special thanks to Petra Strube, Workshop Secretary.

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The Fourteenth International Workshop on Subsecond Thermophysics will be held in 2025 in Paris, France. It will be chaired by Andrea Quaini and hosted by the French Alternative Energies and Atomic Energy Commission (CEA). We look forward to this event and hope to meet there again many colleagues from this very special community.

Patrick Hopkins
University of Virginia
Chairman of the Thirteenth International
Workshop on Subsecond Thermophysics

Konstantinos Boboridis
European Commission – Joint Research Centre Karlsruhe
Co-Chairman of the Thirteenth
International Workshop on Subsecond Thermophysics