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EDITORIAL

11th International Conference on High Temperature Capillarity (HTC 2024)

Since its inception in 1994 in Smolenice, Slovakia, the High Temperature Capillarity (HTC) conference has been held approximately every three years. After the pandemic around 2020, the conference has been held every two years, with an online conference in Hungary in 2020 and in Kraków, Poland, in 2022. Initially, the primary focus was on capillary phenomena at high temperatures, but in recent years, discussions have expanded to encompass a broader range of interfacial phenomena, thermophysical properties, and related topics.

The 11th International Conference on High Temperature Capillarity (HTC 2024) was hosted in Sweden, taking place in Stockholm and aboard a cruise ship traveling between Stockholm and Helsinki. This was the first time this esteemed conference was held in Sweden and also the first instance of it being conducted in such a unique setting. It is our belief that this remarkable experience will leave a lasting impression on all participants.

The conference saw the participation of nearly 70 attendees from 19 countries, with approximately 40 oral presentations and 15 poster presentations. This special issue features a selection of papers presented at HTC 2024, held from May 26 to May 30, 2024. As the included papers demonstrate, the conference theme—capillary and interfacial phenomena at high temperatures—plays a crucial role across a wide range of disciplines in materials science and materials engineering. The discussions encompassed fundamental measurement techniques as well as studies directly related to industrial processes. Furthermore, research spanned a diverse array of materials, from metallic systems to oxides, employing both experimental and simulation-based approaches. This breadth of topics underscores the significance of high-temperature capillarity and interfacial phenomena in various material processes. I hope that this special issue will serve as a valuable resource, inspiring further exploration and fostering collaboration in the field of interfacial physical chemistry of high-temperature systems.

I extend my sincere gratitude to the members of the International Scientific Committee for their dedicated efforts in organizing this conference: Simeon Agathopoulos (Chair), Jürgen Brillo, Mario Caccia, Olivier Dezellus, Jolanta

Janczak-Rusch, George Kaptay, Joonho Lee, Javier Narciso, Yuriy Plevachuk, Eugen Rabkin, Natalia Sobczak, Boris Straumal, Toshihiro Tanaka, Fabrizio Valenza and Joanna Wojewoda-Budka.

The next HTC conference is scheduled to be held in 2026 in Cologne (or its vicinity), Germany. I trust that it will once again attract a wide range of participants and stimulate vibrant discussions.

Finally, I would like to express my deep appreciation to Professor Iván Egry, the editor of the High Temperatures-High Pressures (HTHP), for his invaluable contributions to the publication of this special issue.

Attendees of the HTC 2024 in Stockholm, Sweden

Attendees of the HTC 2024 in Helsinki, Finland

Taishi Matsushita
Chairperson of the International Conference
on High Temperature Capillarity (HTC 2024)