

Foreword

Special Issue Featuring Selected Papers from the 11th International Topical Meeting on High Temperature Reactor Technology (HTR 2024)

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This special issue of *Nuclear Technology* features selected articles from the 11th International Topical Meeting on High Temperature Reactor Technology (HTR 2024), held October 14–18, 2024, in Beijing, China. More than 210 experts from 14 countries, regions, and international organizations met in Beijing. Held since 2002, this conference series is specifically tailored to the exchange of the latest information on industrial, economic, energy policy, and research topics related to high-temperature gas reactor (HTGR) technology. It has been held in the Netherlands (Petten, 2002), China (Beijing, 2004), South Africa (Johannesburg, 2006), the United States (Washington D.C., 2008), the Czech Republic (Prague, 2010), Japan (Tokyo, 2012), China (Weihai, 2014), the United States (Las Vegas, 2016), Poland (Warsaw, 2018), Indonesia (Yogyakarta/virtually, 2021), and most recently again in China (Beijing, 2024).

Across HTR 2024's one keynote session, six panel sessions, and 19 technical sessions, more than 100 speakers reported the state of the art of HTGR technology. Some takeaways from the conference are as follows:

1. High-temperature steam and hydrogen from HTGRs are of interest in many countries.
2. A variety of designs are available. Many projects have been launched in countries like Poland, Indonesia, the United States, the United Kingdom, Japan, Korea, and China.
3. In China, the HTR-PM reactor has entered commercial operation, online since 2023. A new project, HTR-PM600S, has been approved by the government.

Cogeneration of high-temperature steam will be demonstrated. A standard nuclear steam supply system (NSSS) module plus multiple related modules are ready. A full supply chain has been established in China.

4. Several new designs, advanced materials, new components, new processes, computational codes with advanced algorithms, and standards have been devised or developed.

5. International cooperation within the framework of the International Atomic Energy Agency, the Generation IV International Forum, the OECD Nuclear Energy Agency, the European Union, and many multi- or bi-lateral arrangements are continuing their progress.

Overall, the HTR conference is a well-recognized and efficient platform for sharing progress on HTGR technology and for collaboration. We send gracious thanks to Zuoyi Zhang (INET, Tsinghua University, China) for his leadership as chair of HTR 2024, making for another successful iteration of the conference.

The follow-on event HTR 2027 will be held in October of that year in Switzerland, organized by Paul Scherrer Institute.

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