

Appendix 2. Selection of GIF publications (2018-2019)

This list is not exhaustive because the large amount of scientific papers in relations with GIF systems and cross-cutting actions is far too wide. It must be noted that GIF hold a Symposium in 2018 where all the papers presented are in relation with Generation IV. The proceedings of the 2018 Symposium can be uploaded on the GIF website. This list is therefore highlighting some specific relevant papers from the 4th GIF Symposium and from other publications (scientific journals or papers presented to international conferences).

General Paper

Kamide, H. and S. Pivet (2019), "Development and deployment of advanced nuclear power technologies to increase the use of low-carbon energy", Intl Conf. on Climate Change and the Role of Nuclear Power, Vienna, Austria, 7-9 Oct. 2019.

Abousahl, S. et al. (2018), "10 years' overview of a successful contribution of EURATOM to Generation IV International Forum", *Proc. of the 4th GIF Symposium*, Paris, France, 16-18 Oct.

GFR

Hatala, B. (2018), "Progress in GFR Technology", *Proc. of the 4th GIF Symposium*, France, Paris, 16-18 Oct.

Hatala, B. et al. (2019), "Progress in GFR Technology", *Proc. of ICAPP 2019 – International Congress on Advances in Nuclear Power Plants*, Juan-les-pins, France, 12-15 May.

LFR

Frignani, M., A. Alemberti and M. Tarantino (2019), "ALFRED: A Revised concept to improve pool related thermal-hydraulics", *Nuclear Engineering and Design*, Elsevier, Vol. 355.

Moreau, V. et al. (2019), "Pool CFD modelling: Lessons from the sesame project", *Nuclear Engineering and Design*, Vol. 355.

Roelofs, F. and SESAME project partners (2019), *Thermal Hydraulics Aspects of Liquid Metal Cooled Nuclear Reactors*, Woodhead Publishing, Elsevier Ltd. ISBN: 978-0-08-101980-1 (print) ISBN: 978-0-08-101981-8 (online).

Kuwagaki, K., J. Nishiyama, and T. Obara (2019), "Concept of breed and burn reactor with spiral fuel shuffling", *Annals of Nuclear Energy*, Vol. 127, pp. 130-138.

Bak, S-I., S-W. Hong and Y. Kadi (2019), "Design of an accelerator-driven subcritical dual fluid reactor for transmutation of actinides", *The European Physical Journal Plus*, Vol. 134.

Ferroni, P. et al. (2019), "The Westinghouse Lead Fast Reactor," International Congress on Advances in Nuclear Power Plants (ICAPP), Juan-les-pins, France, 12-15 May 2019.

Lemekhov, V.V. et al. (2019), "Modeling of the Wearing for Coupling of Tube-Spacer Grid of the Steam Generator of the Lead Coolant Nuclear Reactor", *Atomic Energy*, Vol. 127, Number 4, pp. 7-11.

Solonin, V.I. et al. (2019), “Metal Liner Reliability Assessment for BREST-OD-300 Reactor Vessel Accounting for Brittle Fracture and Leaks”, *Herald of the Bauman Moscow State Technical University. Series Mechanical Engineering*, Number 5 (128).

MSR

Guidez, J. et al. (2018), “Status of current knowledge and developments in France on Molten Salt Reactor”, *Proc. of the 4th GIF Symposium*, Paris, France, 16-18 Oct.

Ignatiev, V. et al. (2018), “Molten-salt reactor as a necessary element of the nuclear fuel cycle closure for all actinides”, *Proc. of the 4th GIF Symposium*, Paris, France, 16-18 Oct.

Uhlir, J. et al. (2018), “Current progress in experimental development of MSR and FHR technologies”, *Proc. of the 4th GIF Symposium*, Paris, France, 16-18 Oct.

Delpuch, S. et al. (2018), “Design and safety studies of the molten salt fast reactor concept in the frame of the SAMOFAR H2020 project”, *Proc. of the 4th GIF Symposium*, Paris, France, 16-18 Oct.

Feng, B. et al. (2019), “Core and Fuel Cycle performance of a Molten Salt Fast Reactor”, *Proc. of ICAPP 2019 – International Congress on Advances in Nuclear Power Plants*, Juan-les-pins, France, 12-15 May.

SFR

Ashurko, Y. and P. Fomichenko (2018), “Realization of GEN-IV requirements in the BN-1200 Project”, *Proc. of the 4th GIF Symposium*, Paris, France, 16-18 Oct.

Guidez, J. et al. (2018), “New safety measures for European Sodium Fast Reactor in Horizon 2020 ESFR-SMART Project”, *Proc. of the 4th GIF Symposium*, Paris, France, 16-18 Oct.

Ohtsuka, S. et al. (2018), “Development of ODS tempered martensitic steel for high burn-up fuel cladding tube of SFR”, *Proc. of the 4th GIF Symposium*, Paris, France, 16-18 Oct.

Plancq, D. et al. (2018), “Progress in ASTRID Gas power conversion system development”, *Proc. of the 4th GIF Symposium*, Paris, France, 16-18 Oct.

Yamano, H. et al. (2019), “Activities of the GIF Safety and Operation Project of Sodium-Cooled Fast Reactor Systems”, *Proc. of the 27th ICONE Conf*, 19-24 May 2019, Tsukuba, Ibaraki, Japan.

Baqué, F. et al., (2018), “In service Inspection and Repair development for SFRs”, *Proc. of the 4th GIF Symposium*, Paris, France, 16-18 Oct.

SCWR

Conference: The 9th International Symposium on Supercritical-Water-Cooled Reactors (ISSCWR-9), www.cns-snc.ca/events/isscwr9.

Vasić and T.G. Beutheimm (2019), “A Framework of Supercritical Heat Transfer Prediction Method Development”, *Proc. of the 9th International Symposium on SCWRs (ISSCWR-9)*, Vancouver, Canada, 10-14 March 2019.

Lv, H., et al. (2019), “Investigation on heat transfer of in-tube supercritical water cooling accompanying out-tube pool boiling”, *International Journal of Heat and Mass Transfer*, Vol. 136, pp. 938-949.

Musa, A. et al. (2020), “Licensing activity and code validation for generation IV SCW technology”, *Nuclear Engineering and Design*, Vol. 357, 110424, ISSN 0029-5493.

- Buzzi, F., A. Pucciarelli and W. Ambrosini (2019), “On the mechanism of final heat transfer restoration at the transition to gas-like fluid at supercritical pressure: A description by CFD analyses”, *Nuclear Engineering and Design*, 355, 110345.
- Chen, K. et al. (2019), “Characterizing the effects of in-situ sensitization on stress corrosion cracking of austenitic steels in supercritical water”, *Scripta Materialia*, Vol. 158, pp. 66-70.
- Sun, S. et al. (2019), “Evolution of microstructure and mechanical properties of an oxide dispersion strengthened austenitic steel during aging at 973K”, *Mater. Res. Express* 6 085550.

VHTR

- Fuetterer, F. et al. (2018), “Recent advances in the GIF Very High Temperature Reactor System”, *Proc. of the 4th GIF Symposium*, Paris, France, 16-18 Oct.
- Freism D, et al. (2018), “Burn-up determination and accident testing of HTR-PM fuel elements irradiated in the HFR Petten”, *Proceedings of the 9th International Topical Meeting on High Temperature Reactor Technology (HTR-2018)*, 8-10 Oct. 2018, Warsaw, Poland.
- Zhao, H. et al. (2019), “A one-dimensional code of the passive residual heat removal system for the modular high temperature gas-cooled reactor”, *Progress in Nuclear Energy*, Vol. 110, pp. 374–383.
- Zhang, Z. et al. (2019), “HTR-PM: Making dreams come true”, *Nuclear Engineering International*, Vol. 64, pp. 16-18.
- Gougar, H. et al. (2020), “The US Department of Energy’s high temperature reactor research and development program – Progress as of 2019”, *Nuclear Engineering and design*, Vol. 358, 110397.
- Shin, Y. et al. (2018), “Co-generation of hydrogen and electricity using 350 MWth HTGR-based SMR, HTSE, and SI processes”, *The 6th International Conference on Nuclear and Renewable Energy Resources (NURER2018)*, 30 Sep. to 03 Oct. 2018, Jeju, Korea.

EMWG

- Moore, M. et al. (2017), “Benchmarking of Nuclear Economics Tools”, *Annals of Nuclear Energy*, Vol. 103, pp. 122-129.
- Sadhankar, R. et al. (2018), “Benchmarking of Economic Models for Nuclear Hydrogen Production”, *Proceedings of the Pacific Basin Nuclear Conference*, San Francisco, United States, 30 September to 5 October 2018.
- Mendoza, A., M. Berthelemy and R. Sadhankar (2018), “EMWG Position Paper on the Impact of Increasing Share of Renewables on the Deployment of Generation IV Nuclear Systems”, *Proc. of the 4th GIF Symposium*, Paris, France, 16-18 Oct. 2018.
- Mukaida, K. et al. (2019), “Levelized cost of electricity evaluation of SFR system considering safety measures”, *Proc. of ICAPP 2019 – International Congress on Advances in Nuclear Power Plants*, Juan-les-pins, France, 12-15 May 2019.

PRPP WG

- Cojazzi, G. et al. (2018), “The GIF Proliferation Resistance and Physical Protection working group (PRPPWG): achievements and perspectives”, *Proc. of the 4th GIF Symposium*, Paris, France, 16-18 Oct. 2018.

Cojazzi, G. et al. (2018), “The GIF Proliferation Resistance and Physical Protection methodology applied to GEN IV system designs: Some reflections”, In Building Future Safeguards Capabilities (IAEA-CN-127), 05-08 November 2018, Vienna.

Cheng, L. et al. (2019), “The GIF Proliferation Resistance and Physical Protection Methodology Applied to GEN IV System Designs: An Update”. *Proc of 41st ESARDA Annual Meeting Symposium on Safeguards and Nuclear Material Management*, 14-16 May 2019, Stresa, Italy.

Cipiti, B. et al. (2019), “An Update of the GIF Proliferation Resistance and Physical Protection White Papers for the Six Gen IV Systems”, JRC117892., Workshop INMM-ESARDA, Tokyo, October 2019.

RSWG

Okano, Y. et al. (2018), “GIF Risk and Safety Working Group: Applications of the ISAM methodology to Gen-IV nuclear systems”, *Proc. of the 4th GIF Symposium*, Paris, France, 16-18 Oct. 2018.

Guidez, J. et al. (2018), “Application of the practical elimination approach for GEN IV reactor designs”, *Proc. of the 4th GIF Symposium*, Paris, France, 16-18 Oct. 2018.

Cipiti, B. et al. (2018), “Developing a Molten salt Reactor safeguard model”, *Proc. of the 4th GIF Symposium*, Paris, France, 16-18 Oct. 2018.

ETTF

Paviet, P. (2019), “The GIF Webinar Initiative: Past, Present and Future”, *Proc of Global 2019*, 22-26 Sept. 2019, Seattle Washington, United States.

Mikityuk, K. et al. (2018), “GIF Webinar: An online educational resource”, *Proc. of the 4th GIF Symposium*, Paris, France, 16-18 Oct. 2018.

Latgé, C. et al. (2018), “Teaching Sodium Fast Reactors in CEA”, *Proc. of the 4th GIF Symposium*, Paris, France, 16-18 Oct. 2018.

SDC-TF

Kubo, S. (2018), “Development of safety design guidelines on structures, systems and components for Generation IV Sodium-cooled Fast Reactor Systems”, *Proc. of the 4th GIF Symposium*, Paris, France, 16-18 Oct. 2018.

AMME TF

Muransky, O. (2018), “Development and assessment of materials for the Generation-IV Nuclear reactors”, *Proc. of the 4th GIF Symposium*, Paris, France, 16-18 Oct. 2018.

Petesich, C. (2018), “CEN Workshop 64: An innovative way to work on a harmonized set of rules for GEN IV reactors”, *Proc. of the 4th GIF Symposium*, Paris, France, 16-18 Oct 2018.

RDTF

Garbil, R. (2018), “Generation –IV systems experimental infrastructure needs”, *Proc. of the 4th GIF Symposium*, Paris, France, 16-18 Oct. 2018.

Leung, L. (2018), “R&D experimental capabilities for advancing GIF SCWR system in the next decade”, *Proc. of the 4th GIF Symposium*, Paris, France, 16-18 Oct. 2018.

Zheng, Y. (2018), “Introduction on some experimental facilities for VHTR system”, *Proc. of the 4th GIF Symposium*, Paris, France, 16-18 Oct. 2018.