



Join us on September 21, 2017 for the next GEN IV webinar Energy Conversion

The rotary motion, high pressure steam engine was patented by James Watt in 1781. The evolution of steam engines and high pressure boiler technology led directly to the development of the steam turbine coupled to an electrical generator by Charles Parsons in 1884. Since then, over the last 133 years, the world has been using steam turbines to convert heat into electricity in almost all of the world's thermal power stations and in *all* of the world's nuclear power stations. Specifically for the latter, steam turbines and the Rankine thermodynamic cycle in which they operate offer high efficiency for moderate steam temperatures, temperatures typical of first, second and third generation nuclear reactors.

Generation IV reactors offer the potential to move away from the steam Rankine cycle to systems such as helium (or nitrogen) Brayton or supercritical CO₂ gas turbine cycles to exploit the higher temperatures that some of the systems generate, to offer plant simplification and potentially higher conversion efficiencies. Non-steam cycles offer other advantages, particularly in connection with the sodium cooled fast reactor, such that the risk of sodium water reactions is massively reduced.

Within this webcast, the basic thermodynamics and performance limits of energy conversion systems will be explained and each of the technological options proposed for the energy conversion systems of Generation IV reactors will be presented.

Free webcast

September 21, 2017 at 8:30 am EDT (UTC-4)



Register NOW at
<http://www.gen-4.org>

Who should attend: policy makers, managers, regulators, students, general public

Meet the Presenter...

Dr. Richard Stainsby is a mechanical engineer with a PhD in computational fluid dynamics and heat transfer. He is Chief Technologist for Advanced Reactors and Fuel Cycles at the UK's National Nuclear Laboratory, having worked both in research facilities and industry before joining NNL. He has spent the last 32 years working on light water, high temperature gas (HTGR) and liquid metal and gas fast reactors. He has worked on contracts for PBMR in South Africa on core design and whole plant simulation, for the National Nuclear Regulator, also in South Africa, and for the USNTRC on the development of licensing tools for HTGRs. He is a past Chair of the GIF GFR System Steering Committee and a current Euratom member of the GIF SFR System Steering Committee. He has led two European projects (GCFR-STREP and GoFastR) on gas cooled fast reactors (GFR) and was a leader of the innovative architecture and balance of plant sub-project within the Euratom CP-ESFR project between 2009-2013.



The Generation IV International Forum invites you to attend web-based lectures on the next generation of nuclear energy systems and other cross-cutting subjects. Join internationally recognized subject matter experts and leading scientists in the nuclear energy arena for these short presentations.

Upcoming Webinars

October 25, 2017	Estimating Costs of Gen IV System, Dr. Geoffrey Rothwell
November 29, 2017	Feedback of Phenix and Superphenix, Dr. Joel Guidez
December 14, 2017	The Sustainability, a relevant Framework for addressing GEN IV Nuclear Fuel Cycles, Dr. Christophe Poinssot

For more information, please contact: Patricia Paviet at patricia.paviet@nuclear.energy.gov or visit the GIF website at https://www.gen-4.org/gif/icms/c_82831/webinars.

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