

# “GIFted”

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## Edito by Diane Cameron

**It was with great pleasure that I joined the team at the Nuclear Energy Agency (NEA) earlier this year as Head of the Nuclear Technology Development and Economics Division (NTE). In my new role, it is now my distinct privilege to oversee the Technical Secretariat for the Generation IV International Forum (GIF).**

My roles at the NEA and with respect to the GIF Technical Secretariat are new, but the faces and colleagues are familiar. I was previously Director of Nuclear Energy with the Government of Canada, where I oversaw the team that leads and coordinates national nuclear energy policy and programming for Canada, and where I represented Canada at the NEA and GIF. I look forward to bringing this perspective of a member country representative at both the NEA and GIF to my new role, where I will endeavour to serve the interests of both organizations and their member countries at this critical moment in time.

As nations around the world seek to “build back better” on the heels of a global pandemic, and simultaneously tackle the climate change crisis, the nuclear sector has a central role to play – through existing operations, life extensions, new build and nuclear innovation, including advanced and small modular reactors.

While conditions exist to support growth in nuclear energy development and deployment, the nuclear energy sector faces many challenges. It is deeply problematic that

international discussions about climate change have typically been silent on the role of nuclear energy, while all credible models show that nuclear has an important role to play. Nuclear power must be included alongside other options in discussions about energy transition in order to maintain the integrity and evidence base of the policy dialogue.

Climate change is a global challenge, and the science and reality of climate change do not respect international boundaries. In other words, no single country has caused the problem, and no single country can solve the problem alone. Inclusive international collaboration is necessary and can support the development of better technologies, better policies, and better outcomes.

Twenty years ago, GIF member countries came together to collaborate on next generation nuclear research and development, because they understood the promise of nuclear innovation and they understood that no single country could achieve its potential alone. GIF was created to accelerate the development of promising Generation IV reactor technologies.

Today, the need for international collaboration is even more pronounced. It is time to come together to move past research and development, to accelerate the demonstration and deployment of advanced nuclear technologies for the benefit of humanity and the planet. The world has changed since the creation of

GIF twenty years ago. While some countries have backed away from nuclear, others have leaned in. The private sector is active in the area of nuclear innovation in ways that were unthinkable twenty years ago. While the partners have changed, one thing remains the same: success requires strategic partnerships, between nations, between the public and private sectors, between international organizations, and along the entire supply chain.

There are a multitude of challenges facing nations and the international community as the world seeks to mitigate climate change. Some challenges are technological – investments in innovation can help.

Other challenges are socio-economic (e.g. public confidence) or political. The magnitude and complexity of the challenges should not be underestimated. Solutions will require multi-jurisdictional, multi-sectoral, and multi-disciplinary collaborations.

This is GIF’s moment to shine, and I look forward to supporting the collaborations under GIF, and between GIF and the NEA. Let’s do this!

**Diane Cameron**



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## Major events

**July 2021: 2 Webinars**

**Webinar Series 54 (1 July): In-Service Inspection and Repair Developments for SFRs and Extension to other Gen-IV Systems, Dr Francois Baqué, CEA (France)**

**Webinar Series 55 (27 July): Evaluating Changing Paradigms Across the Nuclear Industry, Ms Jessica Lovering, Carnegie Mellon University (USA)**

**26 August 2021 Webinar Series 56: Graded Approach: Not just Why and When, but How, Dr Vince (Alois) Chermak, INL (US)**

## How do you pronounce GIF ?

More often than not, you attend a webinar because of your specific interest in the subject, but sometimes you find yourself becoming informed about an entirely different and unpredictable subject. This happened to me – and I guess, to most of the attendees – at the 20th Anniversary GIF Webinar, where a few anecdotes were recounted about the pronunciation of “GIF” with a hard “g” sound rather than with a soft “g” sound.

Because you may not have attended this webinar, the story must be told here. As most of you know, the Generation IV International Forum (or “GIF”) has its origins in the United States, where a very famous peanut butter brand – called “JIF” – is pronounced with a soft “g” sound. To add to the confusion, the “graphics interchange format” (or “GIF”), which describes a format that can accept small animations or movies at reduced weight, is often mispronounced with a soft “g” sound.



“Animated Looping images” versus “creamy peanut butter”

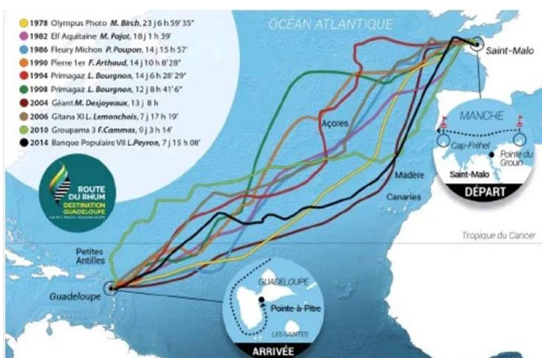
My curiosity was piqued. I had to know what the peanut butter looked like and whether it could be found in France at specialized American import stores. From my search on the web, I came across the image below, which shows GIF (i.e. the animation object) reproduced with the traditional JIF peanut butter logo and branding, beside the peanut butter itself (note the guidelines on pronunciation in the yellow and green circle – JIF with a “SOFT g” and GIF with a “HARD g”).

Thanks to the 20th Anniversary GIF Webinar, I have another explanation for why we pronounce “GIF” with the hard “g” sound, from participants who have great knowledge on such issues. This is also the reason that we decided to name the GIF newsletter “GIFted” (i.e. with a hard “g” sound, of course). First, because it is our hope that this word will depict what we intend to present to our readers every two months through the newsletter, and second because it provides a mnemonic to remind us all how to pronounce GIF. Now, you’ll never forget!

*G. Rodriguez*

## “STRONG Korea Forum”: The GIF vision of small modular reactor developments

Towards the end of the year 2020, the organizers of the annual STRONG Korea Forum (STRONG for: “Science, Technology, and Research are Our National Goal”) proposed to Generation IV International Forum to attend the next STRONG Korea event in 2021. The 2021 event took place on 26 May 2021 in hybrid mode (i.e. in person and in virtual mode). The forum offered an opportunity for GIF to present the organization and to provide its views on small and advanced modular reactors (SMR & AMR) developments worldwide. To describe this “race for SMRs” an analogy with a sailboat race was proposed. As shown in the image below presented at the forum: *“If we follow the course of this international race, we can make some parallels with a sailboat race and the different paths that the sailboats take. Several routes will be considered according to the weather forecast; and the shortest way is not always the fastest; in fact, you have to permanently adjust your sailing route in accordance with external events”*.



The Route du Rhum transatlantic race from Saint Malo to Guadeloupe.

In this international race for SMRs, GIF is committed to:

- enhancing connections between the Gen-IV International Forum and the private sector;
- fostering Gen-IV knowledge dissemination via training, webinars and the capacity building of skills in collaboration with state research centres/laboratories, universities, industry and other international organizations;
- properly structuring existing GIF public material and making it easily accessible to industry;
- continuing to interact periodically with the private sector through dedicated meetings and workshops in order to identify critical research areas and priorities.

In this way, GIF will work with international partners to help them determine the paths taken in the development of SMRs in the coming years. If we continue with the same analogy, in this race, GIF could be considered as the support team for all of the boats. The full presentation can be seen on Youtube at: [www.youtube.com/watch?v=FURecQQ0zxl](https://www.youtube.com/watch?v=FURecQQ0zxl) (from 02:20 to 25:06). It can also be uploaded from the GIF website.

*G. Rodriguez*

## 2021 “Pitch your Gen-IV Research” Competition

The first Generation IV International Forum’s “Pitch your Gen-IV Research” competition has come to an end, with three winners selected from the 51 participants who presented short videos detailing their work.

**The first-place win goes to Flore Villaret.** She completed her PhD studies at the French Alternative Energies and Atomic Energy Commission (CEA/Saclay, France) and is now working for Electricité de France (EDF). The subject of her research is the “Development of austenitic/martensitic gradient steel by additive manufacturing”. Her video excelled in its creativity, and the jury applauds her for the variety of techniques that she used to explain her research.

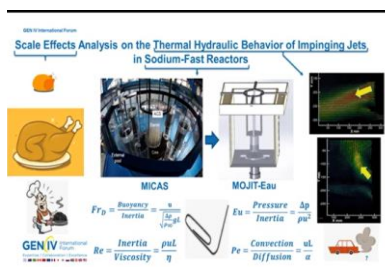
In Ms Villaret’s video, she outlines both the challenges and the benefits of using metallic additive manufacturing in Gen-IV reactors so as to build or replace complex metallic parts or to weld two different metallic materials. The presentation of her “metallic flower” undertaken through additive manufacturing – with the heart in martensitic steel and the petals in austenitic steel – was a smart and pedagogical tool that allowed her to demonstrate the potential of additive manufacturing for the future.

**The second-place position was attributed to Benjamin Jourdy,** who is undertaking his PhD research at CEA Cadarache research centre (France). He presented his research studies on “Scale effects analysis on the Thermal Hydraulics behaviour of impinging jets in sodium fast reactors”. The jury commends him for the creativity of his video and the highly effective use of analogies to explain his research. Mr Jourdy explained – using the analogy of cooking techniques, and with a somewhat absurd sense of humour – how it was necessary to grasp the scale effects of experimental data from the small scale of experimental tools to that of large-scale reactors. His research studies apply to sodium fast reactors, but the methodology that he intends to develop could be applicable to all kinds of Gen-IV reactors where modelling and transposition/extrapolation/prediction from the laboratory scale to a larger scale is very challenging.

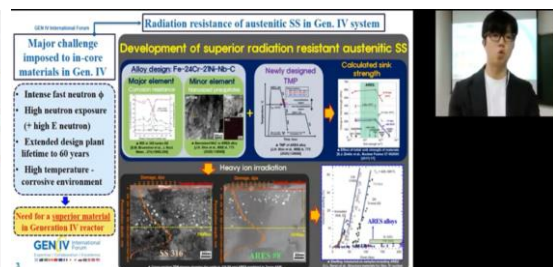
**The third-place position was that of the “popular vote”, with likes representing 80% of the weight and views representing the remaining 20%.** It is **Jiho Shin**, who works at the Korea Advanced Institute of Science and Technology (KAIST), that garnered the most votes, making him the “audience favourite”. His work is related to materials studies and his presentation was entitled “Development of nanosize carbide dispersed advanced radiation resistant austenitic stainless steel for Generation IV systems.” The jury appreciated Mr Shin’s effectiveness in explaining his research. He outlined recent developments in advanced stainless steel material, particularly its increased resistance to radiation. This material is proving to be a promising option for Gen-IV reactor designs, with its better behaviour in the face of Gen-IV constraints (e.g. high radiation, corrosion media, high temperature).



Flore Villaret’s video presentation, with the metallic flower.



Benjamin Jourdy’s video presentation using cooking techniques to explain scale effects.



Jiho Shin’s video presentation.

The three winners of the 2021 GIF “Pitch your Gen-IV Research” competition have been offered the opportunity to present their respective works at length during a dedicated Gen-IV webinar (respectively in December 2021, March and May 2022). Until that time, we wish them all the best in their future careers – hoping at the same time that these careers will intertwine with the Gen-IV community.

It is with much curiosity that we await the results of their research work.



## Staffing changes at the NEA with impacts on GIF TS

Whether it is the GIF task forces, workings groups, the Senior Industrial Advisory Panel (SIAP) or System and Project Management Board Steering Committees, all require proper Technical Secretariat (TS) support. The objective of GIF TS and the NEA is to enhance the GIF Technical Secretariat (GIF TS) and in particular stabilize and reinforce the GIF TS organization.

In this context, several staff changes occurred over the previous months since the last Policy Group (PG) meeting (Note: the updated slide below was presented during the PG open session on 20 May):

- **Davide Costa** (from the NEA SCI Division) is the **new Advanced Manufacturing and Materials Engineering Task Force (AMME-TF) Technical Secretary**. He is also extensively involved, with the GIF Technical Director, in the Non-Electrical Application of Nuclear Heat (NEANH) Task Force.
- **Gabriele Grassi** (also from the NEA SCI Division) replaced Davide Costa as the **Very High Temperature Reactor Fuel and Fuel Cycle (VHTR FFC) Technical Secretary**. He is an expert in the field of reactor and fuel cycle physics.
- **Vladislav Sozoniuk** (Senior Advisor to the Director-General of NEA), will assume the role of **Technical Secretary to the Senior Industry Advisory Panel (SIAP)**.
- **Youngjoon Lee** (from the NTE Division) will be assuming responsibility for **supporting the Molten Salt Reactor (MSR) and Gas-Cooled Fast Reactor (GFR) as Technical Secretary**.
- The NEA recently hired a new staff member, **Gina Abdelsalam** (from the NTE Division), who will be assuming responsibility for **supporting the Economic Modelling Working Group (EMWG), the Education & Training Working Group (ETWG) and the Proliferation Resistance & Physical Protection Working Group (PRPPWG) as Technical Secretary**.

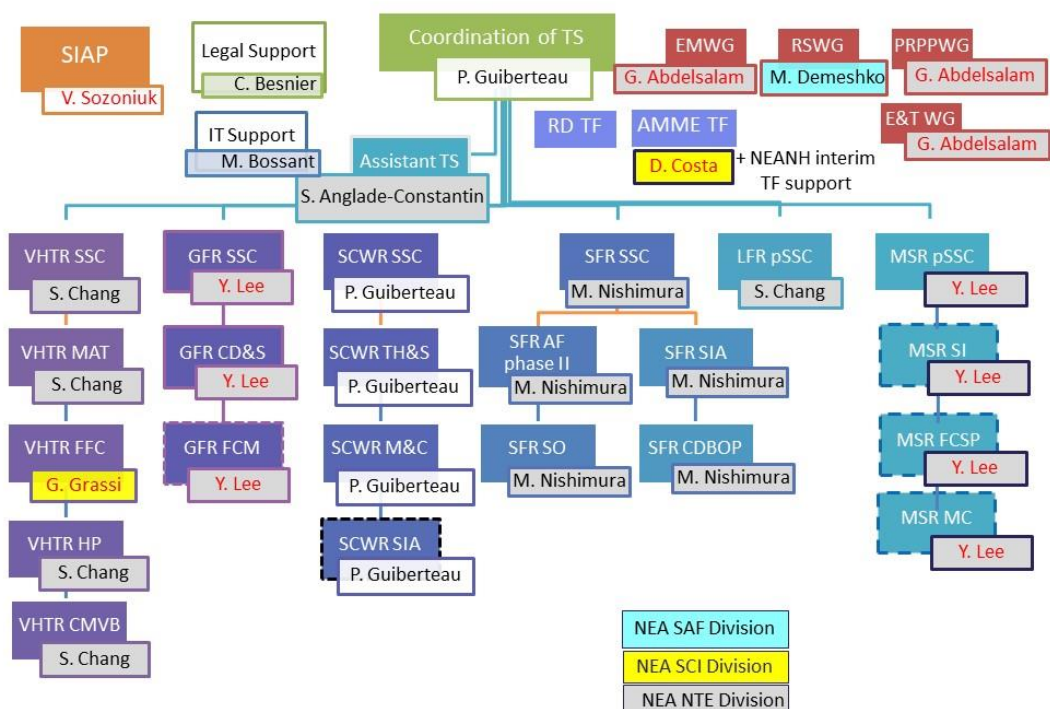
The Head of the GIF Technical Secretariat and the Heads of NEA divisions have been working with staff members to ensure that appropriate hand-over plans are in place so as to make certain that a smooth transition takes place in all of these areas.

Many thanks to **Kathryn Obisesan, Antonio Vaya Soler, Michel Berthélémy and Danielle Zayani** for the very valuable work they carried out as Technical Secretaries in the past and to **Sylvia Anglade Constantin** for acting as Technical Secretary for ETWG since January 2021. It is our hope and expectation that these staffing changes will **strengthen our role as Technical Secretariat for GIF**.

*Philippe Guiberteau*

### GIF TS Staffing as of June 2021

(changes since last PG in red)



I graduated from a MSc in Energy and Nuclear Engineering from the French engineering school Phelma - Grenoble Institute of Technology (INP) in 2015. I have been working in the field of nuclear reactors since 2013, having started my career in the nuclear industry with a work placement year as a nuclear engineer at Framatome, ex-AREVA NP, where I performed Monte Carlo calculations on pressurized water reactors (PWRs) for the verification and validation of Framatome's neutronic softwares. I also implemented and validated a large-scale newly developed statistical algorithm for the evaluation of nuclear uncertainties, a methodology that is key for nuclear safety.

After graduating from Phelma, I joined Électricité de France (EDF), where I started as a nuclear research engineer in the R&D Department. The research I carried out in neutronics helped better understand the origins of a physical phenomenon called “tilt”— or power disequilibrium — usually observed after the commissioning of nuclear reactors, as was the case with the launch of the Taishan EPR in China. I also implemented new models in EDF's neutronic software to allow the simulation of such a phenomenon. My research led me to orchestrate inter-entity cooperation on nuclear safety issues through multiple workshops on data assimilation methods and applications in different disciplines (thermal hydraulics, neutronics, mechanics, etc.). After the acquisition of Framatome by EDF in 2018, I took the lead in a cross-cutting project between the two companies aimed at developing a new, state-of-the-art neutronic calculation

chain, with the technical support of the French Alternative Energies and Atomic Energy Commission (CEA). In 2019, I left EDF to pursue an MBA at HEC Paris, in order to develop new skills in fields such as economics, finance or accounting, but also to face new challenges while gaining international exposure.

“I left nuclear R&D and decided to join the NEA post-MBA because I am deeply convinced that the challenges that the nuclear industry faces today are no longer technical: there is a need for a change in other aspects, at the policy and the market levels. In particular, in order to boost investor's confidence in the nuclear sector, I believe we need a new paradigm that focuses on the environmental and socio-economic impacts of nuclear energy, on the harmonization of regulatory processes and on commercial interests. When this is done, it will be much easier to show how nuclear can positively contribute to the economy while achieving decarbonization goals. The NEA is working exactly in this very direction, through a variety of initiatives such as GIF with its various working groups, among them the Economic Modelling Working Group.”

**Gina Abdelsalam,**  
EMWG, ETWG and PRPPWG TS



I am an expert in policy making for the Korean government, particularly in the areas of nuclear R&D and conceptual design for molten salt reactors (MSRs). I have an interesting academic background, with a bachelor's degree in electrical and electronic engineering and graduate school studies focusing on energy. I obtained my PhD from Ajou University in 2008, with his PhD thesis examining the Development of the AMBIDEXTER2D code for the Space-time Neutronics in Fluid Fuel Reactors.

I have been working as Analyst in the Division of Nuclear Technology Development and Economics (NTE) at the NEA since September 2020. Before arriving at the NEA, I worked for the Korea Atomic Energy Research Institute (KAERI) for 11 years. My career has mainly centred on supporting governmental activity in relation to the establishment of strategy and policy. In the three years leading up to my arrival at the NEA, I had been analysing human and infrastructure status, and R&D capability, for the development of innovative nuclear technology in Korea, and had provided the basis for establishing three

government policies in the area of nuclear safety, radiation use and innovative infrastructure.

The team that I led for a period of three years contributed to establishing KAERI's mid- to long-term research strategy, as well as government policy.

Having learned the importance of collaborating with colleagues through my position as team leader, I hope to ensure fruitful relationships between molten-salt reactor (MSR) and gas-cooled fast reactor (GFR) experts in my role as GIF Technical secretary supporting MSR and GFR activities.

**Dr Youngjoon Lee,**  
MSR and GFR TS



I joined the NEA in 2014, first within the NEA Data Bank, and since 2017, in the NEA Division of Nuclear Science.

At the NEA Data Bank, I worked on the Thermochemical Database (TDB) project, addressing the review, assessment and selection of high-quality thermochemical data of interest for the safety assessment of deep geological repositories for high-level radioactive waste. My duties included scientific support activities, as well as the design and development of a new electronic database for the collection and preservation of selected data. In the NEA Division of Nuclear Science, I am now responsible for nuclear materials-related activities, covering both structural materials and fuel materials. In this role, I serve as the Technical secretary of the [NEA Working Party on Multiscale Modelling of Fuels and Structural Materials for Nuclear Systems \(WPMM\)](#). Under the supervision of the NEA Nuclear Science Committee, I am also co-ordinating the creation of a new working party on nuclear materials with an expanded scope to go beyond nuclear materials modelling and address the experimental characterisation, data review, assessment and collection of fuel materials and structural materials.

**Dr Davide Costa,**  
AMME-TF and  
NEaNH-ITF TS



Currently, I co-ordinate two international joint projects: the [Thermodynamics of Advanced Fuels – International Database \(TAF-ID\) project](#) and the [Thermodynamic Characterisation of Fuel Debris and Fission Products Based on Scenario Analysis of Severe Accident Progression at Fukushima Daiichi Nuclear Power Station \(TCOFF\) project](#). I am responsible for multilateral negotiations to build project membership, and supervise the project agreement and preparation of the programmes of work for these projects. Throughout implementation of the projects, I also oversee the co-ordination of expert activities, financial matters and procurement, as well as supervise R&D contracts established within the projects.

I was the Secretary of the Expert Group on Accident Tolerant Fuels (ATF) for Light Water Reactors (EGATFL) until the completion of its activities in 2019 and the publication of a state-of-the-art report addressing ATF performance in normal operation and accident conditions, and reviewing available data on the compatibility of different ATF fuels and cladding concepts.

Since 2021, I have been part of the Generation IV International Forum Technical Secretariat team, working for the Task Force on Advanced Manufacturing and Materials Engineering. I am also contributing to the establishment of a task force on the non-electric application of nuclear heat, which aims to explore and illustrate opportunities, advantages and hurdles arising from potential combinations of GIF technologies with non-electric applications of nuclear

heat.

I have extensive experience in the nuclear energy sector at the international level, having worked three years in R&D at EDF, contributing to the modelling of the thermal ageing of austenitic-ferritic steels used for the primary circuit of French PWRs. The activities I am involved in at the NEA span from nuclear materials and fuels modelling to thermodynamic modelling of fuel behaviour under normal operation and accident conditions. I am also extensively involved in post-Fukushima activities, particularly in the Fukushima-Daiichi accident progression evaluation from the materials science perspective (analysis of materials interactions occurring during the accident and their consequences on the accident progression and the source term).

An Italian national, I hold a PhD in nuclear materials modelling from Lille University, with a thesis on the “Modelling of the thermal evolution of Fe-Cr alloys using an atomistic kinetic Monte Carlo approach based on Density Functional Theory”. I graduated a theoretical physicist at the École Normale Supérieure de Lyon (France). I am an enthusiastic and passionate team worker, always looking for opportunities to create connections among communities from contiguous nuclear research areas so as to deliver rich multi-dimensional outputs in support of member country decision-making processes.

I joined the Nuclear Energy Agency (NEA) in January 2021. At the NEA Division of Nuclear Science, I serve as Technical secretary for the Working Party on Scientific Issues of Advanced Fuel Cycles (WPFC), its expert groups and the recently established Nuclear Science Committee’s Task Force on Demonstration of Fuel Cycle Closure including Partitioning and Transmutation (P&T) towards Industrial Readiness by 2050 (TF-FCPT). In this role, I co-ordinate and support work on scientific issues related to advanced nuclear fuel cycles, including fuel cycle scenarios, innovative fuels and materials, separation chemistry, waste disposal and coolant technologies. Since February 2021, I have also been serving as Technical secretary for the GIF Very High Temperature Reactor Fuel and Fuel Cycle Project Management Board (VHTR FFC PMB).

I have extensive experience in nuclear energy, spanning a wide range of technical areas and different roles in engineering, R&D and innovation. Prior to joining the NEA, I worked at Orano as R&D Manager for the back end of the nuclear fuel cycle. I co-ordinated cross-cutting and multi-disciplinary activities in support of used fuel reprocessing, plutonium recycling and waste management, in continual interaction with experts from

industry and research bodies, as well as from business, legal and strategy teams. I was then involved in exploring innovative solutions for the nuclear fuel cycle, focusing on advanced nuclear systems, and particularly molten salt reactors, as well as advanced options for fuel reprocessing. Previously, I worked at Framatome as a core design engineer and a technical leader for light water reactor projects.

An Italian and French national, I completed my PhD at the French Alternative Energies and Atomic Energy Commission (CEA) in neutronics and applied mathematics. I also hold a MSc in nuclear engineering from Politecnico di Torino (Italy) and a MSc in energy systems, with a specialisation in reactor physics, from the Université d’Evry Val d’Essonne/National Institute for Nuclear Science and Technology (INSTN, France).

**Dr Gabriele Grassi,**  
VHTR FFC TS





In 2019, I joined the Nuclear Energy Agency as Senior Advisor to the Director-General for Special Projects. In this position I co-ordinate the evaluation of new project concepts in various areas, such as advanced technologies, nuclear innovations and knowledge management. I am also involved in the planning and co-ordination of joint projects and multinational initiatives, and support other cross-cutting activities at the NEA. I have over 20 years of experience in the nuclear field, encompassing science, industry, policy making and international relations.

I graduated from the National Research Nuclear University (MEPhI) in 1999 with a Master's degree in nuclear engineering, and began my scientific career as an engineer and research associate at the Institute for Physics and Power Engineering (IPPE) in Obninsk, dealing with innovative reactor designs, technical and economic studies, and non-electric applications of nuclear energy.

In 2006, I was appointed to a management position at Rosenergoatom, overseeing economic assessments and feasibility studies for small modular reactor (SMR) construction and deployment. As the Head of Analytical Department, I was in charge of site selection for the first-of-a-kind floating NPP “Academik Lomonosov”, now operating in Pevek in the Chukotka region.

Upon accession of the Russian Federation to the NEA in 2013, I joined the Agency as a Nuclear Energy Analyst, performing policy and economic analyses, conducting a study on the market for, and economics of, SMRs, and providing support to other projects within the Programme of Work for the NEA Committee for Technical and Economic Studies on Nuclear Energy Development and the Fuel Cycle (NDC).

I returned to Russia in 2016, assuming the position of Head of the Project Office at the State Atomic Energy Corporation Rosatom. As a member of the Steering Committee for Nuclear Energy, I was in charge of scientific and technical co-operation with the NEA, co-ordinating with national institutions and supervising the work of Russian experts, as well as participating in a broad range of NEA activities and joint undertakings.

As the new Technical Secretary of the GIF Senior Industry Advisory Panel (SIAP), I will be involved in fostering collaboration with industry, supporting policy analysis, advising on long-term strategic issues and providing industry views on next generation nuclear energy systems.

**Vladislav Sozoniuk,**  
SIAP TS



## New GIF Members

- **Policy Group (PG):** [Dr Hyeonjun Kwon](#) (Korea), Director General, Space, Nuclear and Big Science Policy Bureau, MSIT (replacing Mr Chang-Yune Lee).
- **Policy Group Support (PG Support):** [Dr Ramesh Sadhankar](#), (Canada), Senior Advisor, Nuclear Energy Division, NRCAN.
- **Expert Group (EG):** [Dr Rosaura Ham-Su](#) (Canada), Head, Directorate of Advanced Reactors, CNL (replacing Dr. Sadhankar).
- **VHTR Computational Methods Validation & Benchmarks (VHTR CMV):** [Mr Rui Hu](#) (US), Group Manager, Plant System Analysis, ANL.



**FOCUS ON:** [Dr Rosaura Ham-Su](#) is Head of the Directorate for Advanced Reactors and Acting Head of the Directorate for Reactor Fleet Sustainability at Canadian Nuclear Laboratories. She has a wide breadth of experience in many aspects of the nuclear industry, having worked for more than 25 years in science and technology. She also has a great deal of technical experience related to reactor technologies after having spent many years doing research in materials, nuclear fuel and fuel cycles as a R&D scientist with Defence Research and Development Canada and then with Atomic Energy of Canada Limited and Canadian Nuclear Laboratories (AECL/CNL). Within AECL/CNL, she has had many management and leadership roles, including Section Head of the Fuel Assembly S&T Section, Manager of the Fuel Development Branch, Advanced Fuel and Fuel Cycles Centre of Excellence Lead, Acting Director of the Fuels, Materials and Design Division, and most recently the Acting Head of Directorate for the Reactor Fleet Sustainability Directorate.

[Dr Ham-Su](#) was the CANDU Owners Group Fuel Normal Operations Working Group Chair/Co-Chair for almost a decade, and she has actively represented CNL and Canada in multiple international working groups. She received her Bachelor of Engineering in engineering physics from Ibero-American University in Mexico and a PhD in Materials Science from McMaster University in Canada. [Dr Ham-Su has been a strong advocate for women in science and the nuclear industry, presenting at many conferences and invited venues as a technical expert, and interviewed as a guest of the Titans of Nuclear podcast.](#)