IEEE NUCLEAR AND PLASMA SCIENCES SOCIETY ELECTION
FUSION TECHNOLOGY STANDING COMMITTEE ELECTION
For the Four-Year Term 1 January 2027 – 31 December 2030
(VOTE FOR NO MORE THAN FOUR)

CHRISTIAN DAY (M'26) I made my PhD in Chemical and Process Engineering in 1995, upon which I started in nuclear fusion and stayed there until now. I started in the Central Engineering Department of the Research Centre Karlsruhe, Germany, developing the physics baseline for divertor particle exhaust with cryogenic pumps, mainly for ITER. Between 2002 and 2006, I had a prominent role in concept development of the KATRIN tritium pumping systems, a fundamental physics experiment to find the neutrino mass. In 2006, I switched to the Institute of Technical Physics at the newly formed Karlsruhe Institute of Technology (KIT) taking over a teaching position for Vacuum Technology. I was leading the Vacuum Technology Group there, and from 2008 I headed the Fuel Cycle Task Force at KIT, with 20 staff. Since 2010 I was heavily engaged in the European Fusion Programme in various roles (Committee on Fuelling and Pumping, EU-JT-60SA Research Unit). In 2014 I started to manage the Tritium-Fuelling-Vacuum Work Package in the European DEMO programme, overseeing a pan-European team of more than 25 people. I was also actively contributing to the programmes of JT-60SA, W7-X, AUG and DTT. I held this position until 2024, when I decided to move to the private side of fusion development. I founded the European office of Kyoto Fusioneering in Karlsruhe, Germany. Next to my role as EU director, I am currently holding the position as global CTO for Plant Technology, managing 60 staff in R&D and project delivery. I am also having a Chief Technology position in Fusion Fuel Cycles Inc, the for-profit joint venture between Kyoto Fusioneering and Canadian Nuclear Laboratories.

Statement: My core expertise lies in all fuel cycle technologies: vacuum pumping, tritium processing, matter injection and particle exhaust as well as process modelling with both classical and modern, AI based tools.

I would very much like to join the IEEE FTC Committee, simply because I like the SOFE Conference, its style and its atmosphere very much. The one in 1997 in San Diego was one of my first fusion Conferences and I enjoyed participating on a regular basis since then. In particular, I like the focus that is given to technological aspects in a practical plasma physics context. It reflects my passion which is on technology and plasma physics integration.

Coming from my recent experience in a private industry which is part of the supply chain, I would like to see FTC taking an active role in supporting Public Private Partnerships, a framework that is utilized on global scale (US, UK, EU). I feel, given the current situation of fusion to become reality, FTC can take a unique role in connecting the best of both worlds, namely of structured Research at National Lab scale on one side, and well-informed accelerated realization of fusion on demonstrator and power plant scale.

Finally, being a European under the umbrella of a Japanese company, I am advocating open mindsets, realizing that we were never so close to really make fusion happen. I have a wide network to fusion developers and public researchers, that I can connect with.

It would be my great pleasure and honour to work in the FTC under the IEEE Nuclear and Plasma Sciences Society.

LORENZO GIANNINI (M'26) is a mechanical and magnet-system engineer working as System Design Lead – Magnet within the EUROfusion DEMO Central Teams, Plant System Design Division, in Garching, Germany. His work focuses on the conceptual design and integration of superconducting magnet systems for fusion devices, including cables, conductors, winding packs, coil structures, auxiliary supports, and magnet-system interfaces.

His expertise covers electromagnetic, structural, thermal and quench-protection analyses for large superconducting magnets, with specific experience on DEMO, DTT and Volumetric Neutron Source concepts. He has contributed to the development of sizing models and system-code methodologies for the optimization and integration of tokamak magnet systems, supporting trade-off studies on machine architecture, operating conditions, structural integrity and protection requirements. His work also includes coordination of external resources, industrial contributions and specialized design teams, as well as collaboration with CAD and integration offices for the implementation of magnet systems within complete plant models.

Previously, he worked as Structural Analyst of DEMO Magnets and Magneto-Structural Analyst for DTT magnet systems, developing numerical models for static and fatigue assessment of TF, PF and CS systems, support structures and bolted joints. His technical background combines superconducting magnet design, finite-element analysis, system engineering and fusion-plant integration, supported by a broad publication record on DEMO, DTT, HTS applications, VNS concepts and magnet-system optimization.

Statement: I would like to join the IEEE Fusion Technology Committee because my professional activity is directly aligned with the development, integration and qualification of fusion magnet technologies, with particular emphasis on superconducting magnets for DEMO-class and next-step fusion devices. The IEEE FTC represents an important forum where specialists in fusion engineering, superconducting technology, power systems, plasma-facing systems and plant integration can exchange technical knowledge and help guide the development of the field.

I believe I could contribute to the committee by bringing a strong system-level perspective on fusion magnet design. My experience spans conductor and winding-pack conceptual design, electromagnetic and structural assessment, quench-protection studies, fatigue and integrity evaluation, and the integration of magnet systems into complex tokamak architectures. I could support FTC activities related to technical reviews, conference organization, paper evaluation, special sessions, and the identification of emerging engineering challenges for future fusion devices.

In particular, I would be interested in contributing to discussions on DEMO and pilot-plant magnet technology, HTS and hybrid magnet concepts, structural design methodologies, system-code-based optimization, and interfaces between magnet systems and the broader fusion plant. I would also be glad to help strengthen the connection between the European fusion programme and the IEEE fusion-technology community by promoting technical exchange, collaborative discussions and dissemination of current engineering developments in superconducting magnet systems.

KENZO IBANO (M'26) Dr. Kenzo Ibano is Chief Technology Officer of Starlight Engine, Inc., where he leads the integrated design and technical development of FAST—Fusion by Advanced Superconducting Tokamak—a Japanese fusion pilot plant program aiming to demonstrate fusion power generation in the 2030s.

He has more than 15 years of experience in fusion engineering and plasma–material interaction research in collaboration with universities and research institutions in Japan and the United States. His work has covered plasma-facing components, divertor technology, high-heat-flux materials, magnetohydrodynamics, diagnostics, and fusion reactor integration.

He previously served as an Assistant Professor at Osaka University. He received his bachelor's degree from Keio University, an M.S. from the University of Illinois, and a Ph.D. from Kyoto University.

Statement: I would like to join the IEEE Fusion Technology Committee to contribute to the advancement of fusion engineering and to strengthen links among academia, industry, national laboratories, and private fusion companies.

As CTO of Starlight Engine and technical lead for FAST, I work on the integration of superconducting magnets, plasma-facing components, heating systems, fuel-cycle technologies, blankets, remote maintenance, diagnostics, controls, power-generation systems, as well as buildings, civil engineering, and electrical power distribution systems. I believe this systems-level and industry-oriented perspective would add value to the FTC.

I would particularly contribute to the IEEE Symposium on Fusion Engineering, industry engagement, codes and standards, workforce development, and broader participation from Japan and the Asia-Pacific region. I hope to help connect established fusion programs with emerging pilot-plant and commercialization activities.

JUAN KNASTER (M'25) I hold two university degrees: 1. Theoretical Physics by Universidad Complutense of Madrid, 2. Nuclear Engineer by the Universidad Politécnica de Madrid. I started my career in the 90s in CIEMAT during the times of design and construction of the TJ-II, the Spanish stellarator still running in Madrid. After a couple of years, I moved to CERN during the final times of LEP operation for the design and construction of the LHC. I was recruited as mechanical engineer in the Vacuum group of the LHC division where I was the Project Manager of the superconducting magnets beam vacuum interconnections of the 20 km LHC cold ring and their cold to warm transitions. I was also responsible of the Be beampipe of the LHCb experiment, which I used as my PhD in the Universidad Politécnica de Madrid defended in 2005 and obtaining the prize as best of the year in the university. In 2005, I resigned from my career in CERN to join the ITER International Team where I became Project manager of the TF coils and its Pre-compression Rings, whose design and specification was under my responsibility at the time of the Procurement Arrangements and contracts signature with European and Japanese DAs and industry. Since 2007, I was ITER Organization staff until 2012. From 2009 to 2017 I was member of the International Board of the International Cryogenics Materials Conference (ICMC). In 2012, I moved to Japan as F4E staff to take the role of Project leader of IFMIF-EVEDA until 2018, when I came back to ITER site as deputy Head of ITER-Project department of F4E. In 2022, I became EUDA Representative based in Cadarache and member of the Executive Project Board of ITER, roles that I continue developing today. I am presently member of the standing international board of ISFNT.

Statement: F4E, the European Commission joint undertaking for the development of fusion energy, is the industrial motor of fusion activities in Europe with their contributions to ITER, JT60SA and IFMIF-DONES. I trust that the NPSS Fusion Technology Committee (FTC) is to play a growing worldwide essential role in this new phase of the world fusion energy endeavour. The enthusiasm observed internationally with fusion energy is an opportunity, but it also holds risks since it can become a balloon that can explode damaging the credibility of the fusion energy as inexhaustible source of energy for humankind. The role of NPSS FTC is to become crucial. I trust that the fusion energy dream will materialize and we all are endeavoring in a fantastic adventure for the benefit of future generations. Europe is slightly delayed in the presence of private initiatives, but it is catching-up with solid initiatives already visible mainly in the UK, Germany and France. The role of F4E in the fusion landscape is essential in Europe with unique technical and commercial accumulated skills and it has been key in the present maturity of the European fusion supply chain. My presence as

F4E candidate for the IEEE NPSS FTC will allow its involvement in supporting its initiatives and involving as needed F4E resources and opening links with European industrial network. I have been SOFE 2025 Guest Editor, and I have realized of the growing relevance of SOFE worldwide and F4E is to support this. I will boost the presence of F4E and European colleagues in this conference, perceived by many as mainly US based. My career has allowed me to gain internationally respect in various domains like fusion, accelerators, superconducting magnets, materials at room and cold temperature and liquid metals with publications in these domains accumulating thousands of citations and building a sound network in fusion and accelerators domains. I trust that I will bring to the FTC wider visibility and relevance in the world fusion ecosystem and a stronger involvement of F4E in SOFE and FTC activities.

EVDOKIYA (EVA) KOSTADINOVA (M'19) Prof. Evdokiya (Eva) Kostadinova obtained a B.S. in Physics and a B.A. in Political Science from Furman University in 2014 and a Ph.D. in Physics from Baylor University in 2017. Based on her dissertation work, Kostadinova authored a Springer book on employing new math techniques in the study of transport problems in disordered systems. Kostadinova became an Assistant Professor in Auburn University's Department of Physics in 2021.

Kostadinova's research is highly interdisciplinary and focuses on the intersection of fundamental plasma physics and its various applications, including fusion energy, plasma-enabled technology, and aerospace engineering. Topics of interest include anomalous diffusion in complex plasma and strongly magnetized plasma from lab to space, self-organization and stability in strongly coupled systems with anisotropic interaction potentials, and plasma materials interactions in high heating conditions. Kostadinova's research group is promoting a broader application of fractional calculus, spectral theory, and nonextensive statistics to advance foundational models of non-equilibrium plasma. Kostadinova received an NSF CAREER award in 2024 to study energetic electrons transport in magnetized plasma with magnetic islands and stochasticity from lab to space.

Kostadinova has extensive experience with service to the plasma science and fusion energy communities. She is currently the chair of the Sherwood Fusion Theory Executive Committee, the chair of Coalition for Plasma Science (CPS), the Vice President for Plasma for the Fusion Power Associates (FPA), a member of the APS Division of Plasma Physics (DPP) Executive Committee, a member of the University Fusion Association (UFA) Executive Committee, a member of the IEEE Plasma Science and Applications Committee (PSAC) Executive Committee, and a member of the DIII-D User Board and Nominations Sub-Committee. Kostadinova has previously served as a member of the Department of Energy's Fusion Energy Science Advisory Committee (FESAC) and the Science Advisory Board for LaserNetUS.

Statement: As a member of the IEEE FTC ExCom, I plan to work on the following goals: (i) communication and coordination among FTC and the different fusion-relevant communities, (ii) improving and expanding education, workforce development, and public engagement activities within FTC, and (iii) establishing entrepreneurship activities for the FTC members.

As you can see from my short bio, I had the opportunity to serve on many committees that represent a broad range of communities: from low temperature and dusty, to astro-space, to laser-driven, to magnetically confined plasmas. In addition, I have experience with community planning processes and science advisory boards, which have allowed me to interact with congressional offices and different federal agencies. As a result, it quickly became clear to me that small improvements in communication across our professional societies, nonprofits, and advocacy groups, complimented by coordination of activities and delivering consistent messages to federal agencies and Congress, is a powerful driver of progress, both scientific and societal. As a member of FTC, I plan to serve as a liaison across these institutions and maximize the impact of our messages.

Another goal as a member of FTC is to expand activities related to education, workforce, and public engagement. As the co-Chair of the DPP Education and Outreach Committee and the co-founder of the Plasma Network for Engagement and Training (PNET), I have gained experience in organizing events for public engagement colleagues, developing K-12 classroom kits and lesson plans, managing training events for K-12 teachers, and organizing school visits. These experiences have been hugely positive and impactful for both the volunteers and the public. In addition, I plan to promote the proliferation of plasma science and fusion energy certification programs and apprenticeships throughout the US, as discussed in a recent white paper (Kostadinova, 2025).

Finally, I recently worked on Young Professionals events for IEEE PSAC, which took place at the 2026 ICOPS conference, including hosting an entrepreneurship workshop and establishing a career center that assist with employment. As a member of FTC, I plan to expand such activities at the SOFE conference to include a model where young entrepreneurs are connected to angel investors.

[1] Kostadinova, E., & Zwicker, A. (2025). Establishment of a Nationwide Plasma Science and Fusion Energy Certification and Apprenticeship Programs. Fusion Science and Technology, 1-7.

TOMOHIRO MORISAKI (M'26) Dr. Tomohiro Morisaki is Professor and head of the Research and Development Division at National Institute for Fusion Science (NIFS), Japan. He has more than 30 years of experience in fusion research and engineering.

Dr. Morisaki played a leading role in the Large Helical Device (LHD) project. He contributed to the first plasma operation, superconducting coil commissioning, magnetic flux surface mapping, divertor development, and experiments that established the ultra-high-density plasma mode. As Executive Director of the LHD Project, he led the preparation and execution of the world's first deuterium plasma campaign in a large stellarator.

His current research activities focus on long-pulse plasma operation and advanced plasma-facing component technologies for fusion reactors. In particular, he is leading R&D on tungsten-to-copper or tungsten-to Reduced Activation Ferritic/Martensitic (RAFM) Steel joining technique for divertor targets. These developments have resulted in several patents and have been applied to prototype components for JT-60SA and QUEST tokamaks.

Dr. Morisaki is actively involved in international fusion collaboration through joint experiments and coordination meetings in the ITER Council, the IEA Fusion Power Coordinating Committee (FPCC), and the IAEA.

Statement: I would like to join the IEEE Fusion Technology Committee because I believe that this is a crucial period for transforming fusion research into practical fusion energy systems. Throughout my career, I have worked at the interface of fusion science, engineering, and project leadership, ranging from experiments in LHD to the development of advanced divertor and vacuum technologies for next-generation fusion devices.

My current activities focus on long-duration plasma operation and the development of plasma-facing components for future fusion power plants. These experiences have given me a broad perspective on the technological challenges associated with steady-state operation, reliability, materials, heat removal, and reactor integration. I believe these challenges are closely aligned with the mission and priorities of the FTC.

As a member of the FTC, I would contribute by strengthening collaboration among major international fusion programs, including stellarator and tokamak communities, and by promoting exchanges between fusion researchers, engineers, industry partners, and young professionals. Drawing on my experience in international organizations, I would actively support FTC initiatives, workshops, conference activities, and strategic discussions on fusion technologies needed for DEMO and future commercial fusion power systems.

I am committed to helping the FTC advance innovation in fusion technology and to fostering the next generation of scientists and engineers who will bring fusion energy into practical realization.

MARTIN NIETO-PEREZ (AM'09-M'12-SM'14) Martin Nieto-Perez, PhD, was born in Mexico City in 1975. He received his BS in Chemical Engineering from the Universidad Autónoma Metropolitana in 1997. He did internships at the Electrical Research Institute and the National Institute on Nuclear Research in Mexico between 1996 and 1998. Thanks to a Fulbright scholarship, he pursued graduate studies in the United States and received his MS in Nuclear Engineering from the University of Illinois in 2001 and his PhD in the same discipline in 2004; for his doctoral thesis, he conducted groundbreaking experimental measurements of energetic helium-ion retention in flowing liquid lithium. He held a postdoctoral appointment at Argonne National Laboratory between 2004 and 2006, where he continued his work on interactions between ion beams and surfaces. In 2006, he returned to Mexico, where he worked as a professor-researcher at the Instituto Politécnico Nacional, a position he held for 14 years, during which he was a strong promoter of plasma science and technology in his home country. In the Fall of 2021, he joined the faculty at Pennsylvania State University, in the Department of Nuclear Engineering, as an Associate Teaching Professor. He continues to research the physics and chemistry of plasma-exposed surfaces in fusion devices, while supporting the fusion academic track within the department. He has authored more than 50 publications and has participated in multiple international conferences on plasmas and fusion. A long-time IEEE member, he also served as chair of the IEEE NPSS Fusion Technology Committee between 2020 and 2024. He has served as a guest editor for the IEEE Transactions on Plasma Sciences on multiple occasions. He is currently a member of the Organizing Committee for the IEEE SOFE 2027 conference.

Statement: My motivation to join the IEEE FTC stems from my previous leadership role in the committee, which I found highly rewarding. I am eager to bring my experience and dedication to advancing the committee's activities and fostering collaboration within the fusion community. These are exciting times to be involved in fusion science and technology. The emergence of private sector efforts is completely changing the landscape of the field, accelerating the transition from basic to applied science and technology. I consider this a golden opportunity for IEEE to establish a leadership role in fusion engineering, and I am willing to utilize my skills and experience to make it happen. I have had the privilege to lead the Fusion Technology Committee before, and it was a very satisfying and enriching experience for me. Having seen the evolution of the Committee over the past 10 years, I would be very excited to contribute to the consolidation of IEEE at the forefront of fusion technology.