

Biographies

Editorial Board

Gianfranco Federici, Project Lead, EUROfusion



Gianfranco Federici is the Programme Manager of EUROfusion since 2025. Formerly, he led on assignment from Fusion for Energy the Fusion Technology Department and the DEMO Central Team in the EUROfusion Consortium, where he was responsible during the last 15 years for the coordination and technical oversight of the Design and R&D efforts in Europe aimed to the conceptual design of a DEMOnstration Fusion Power Plant (DEMO). He has worked in the ITER Project from 1990 till 2006.

He received his Ph.D. (1989), M.Sc. (1988) in Nuclear Engineering from UCLA and his B.Sc. in Nuclear Engineering from the Polytechnic of Milan in 1985. He has an extensive (> 35 yrs) professional experience in fusion reactor design and fusion enabling technology developments. He has a strong record of resource management (human and financial) and technical oversight responsibilities in complex, cross-functional projects and technology development environments.

He is well-known for his strong scientific track record and for spearheading research in key fusion research topics and contributing to important publications in peer-refereed scientific journals, some of which have truly impacted the field and constitute a body of work of recognised value.

He is a recipient of a variety of several awards, including the Fusion Power Associates (FPA) Leadership Award (2019); the Outstanding Technical Accomplishment Award- ANS Fusion Energy Division (2002); the David J. Rose Award for Excellence in Fusion Engineering- FPA (2000). Since 2008, he's also Fellow of the American Nuclear Society.

Alexander Alekseev, ITER Organization



Alexander Alekseev received the MS degree with honor of Mechanical Engineer-Researcher in the field of dynamics and strength of machine from the St.-Petersburg State Polytechnical University, St.-Petersburg, Russia, in 1986. He received the degree of Candidate of Physico-Mathematical Science (Ph.D.) and degree of Doctor of Engineering Science from Efremov Institute, St.-Petersburg, Russia, in 2003 and 2010, respectively. Both works are devoted to the engineering problems of the tokamak superconducting magnet system.

He started his career in Efremov Institute working on engineering of Russian tokamaks and from the very beginning was involved in ITER project activities. At the ITER EDA he coordinated the Efremov Design Office (1995 – 2002) providing engineering support to the Naka JWS.

From 2001 to 2003 he was the Responsible Officer for design and analysis for KSTAR project in frame of the agreement between KBSI and Efremov Institute. Within the collaboration with IPP (Greifswald) he led supporting design and analysis works for the W7-X magnet system. He is author and co-author of more than 50 publications related to engineering aspects of fusion installations, including Fundamentals of Magnetic Thermonuclear Reactor Design. Since 2011 he has worked in the ITER Organization in top management positions as the Director of Tokamak Directorate, DDG, Head of Tokamak Engineering Department, and others.

Federico Casci, Retired (Fusion for Energy)



A mechanical engineer from the Politecnico di Milan (Italy), he was initially involved in plasma physics (i.e. resistive plasmas, plasma equilibria, burn control) moving later to the engineering aspects of fusion. He joined the NET (Next European Torus) project in 1985 to work on the system integration of the machine and on the design of basic machine components. He contributed to the ITER Conceptual Design.

In 1993 until 2000 he moved to ITER EDA with responsibilities for the design integration of the machine internal components. He then joined EFDA (European Fusion Development Agreement) as Head of the Project Control taking care of the interface to ITER and of the European public information activities on fusion. In 2005 he moved to the EFDA office in Barcelona, Spain, focusing on the preparation of the ITER site in Cadarache.

In 2008 he joined Fusion for Energy in Barcelona as Head of the Project Office with responsibilities of planning/scheduling, costing, system engineering and quality assurance. In 2016 he was appointed Deputy Head of the F4E Project Management Department. He retired in 2020. He is author and co-author of publications and contributions to international conferences on plasma physics, engineering applied to fusion devices and project management.

Stefano Chiocchio, Retired (ITER Organization)



Stefano Chiocchio is a retired professional with background in Nuclear Fusion and Fission Power Plant design and construction. Soon after his B.Sc. in Nuclear Engineering from the University of Bologna in 1983 he worked in the development of Nuclear Fissions research plants and in the design and construction of Nuclear Fission Power Plants in Italy and in France.

Stefano has worked for almost 30 years in the ITER Project, having taken part to the early explorative and conceptual design work, then as a member of the divertor design team, and finally having been in charge of the control of the integration, control of the design and configuration management during the construction phase. He is currently working as consultant to EUROfusion DEMO Central Team to support the assessment of the design and technology readiness, the establishment of the plans for the critical project gates and developing the design control procedures.

Richard Hawryluk, Retired (Princeton Plasma Physics Laboratory)

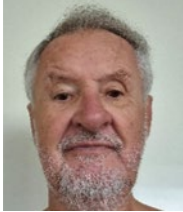


Dr. Richard (Rich) Hawryluk retired from the Department of Energy Office of Science after retiring from his position as Associate Director for Fusion at the Princeton Plasma Physics Laboratory. Among other responsibilities, he was Interim Deputy Director for Operations from October 2018 to January 2019 and Interim Director of the Princeton Plasma Physics Laboratory from August 2017 to July 2018. Hawryluk came to the Lab in 1974 after receiving a Ph.D. in physics from MIT. He headed the Tokamak Fusion Test Reactor at PPPL, then the largest magnetic confinement fusion facility in the United States, from 1991 to 1997 and led the deuterium-tritium experiments.

Hawryluk oversaw all research and technical operations as Deputy Director of the Laboratory for 11 years from 1997 to 2008. He then spent several years working on research and management topics associated with ITER, as head of the ITER and Tokamaks Department from 2009 to 2011 and from 2013 to 2016, and as Deputy Director General for the Administration Department of ITER from 2011 to 2013.

He has received numerous awards during his career including an American Physical Society Prize for Excellence in Plasma Physics, U.S. Department of Energy Distinguished Associate Award, a Kaul Foundation Prize for Excellence in Plasma Physics Research and Technology, and a Fusion Power Associates Leadership Award. He is fellow of the American Association for the Advancement of Science since 2008 and of the American Physical Society since 1986. He has chaired or participated in many national and international reviews and advisory panels and most recently the National Academy of Science, Engineering and Medicine Committee on the Key Goals and Innovations Needed for a U.S. Fusion Pilot Plant.

John How, Retired (ITER Organization)



John How obtained his PhD in 1975 from Flinders University, South Australia with a study of millimetre microwave plasma diagnostics. Thereafter followed by a career in Fusion Energy on many of the world's major experiments: TFR-Paris, W7 Garching, LT4-Canberra, Petula Tokamak Grenoble, Tore-Supra Cadarache. In 1986 he joined the Operations team at JET, often taking shift as Engineer-in-Charge, eventually appointed as head of JET Machine Operations until 1998. During this time, he was awarded the honour of "Outstanding Alumni" from his home university, Flinders, Australia.

John joined ITER in 2003 working in the Project Office and Configuration Management at until 2011. Before retirement he joined the ITER Strategy Unit in the European Commissioning for two years. From 2013 to 2016 John worked part time for ITER management, organising high-level technical meetings and Task Forces. He fully retired in 2016 but has continued to participate on occasional fusion committees.

Juan Knaster, Fusion for Energy



Juan Knaster has shared his professional life between Accelerators and Fusion energy worlds. With a degree in Theoretical Physics from the Universidad Complutense de Madrid and a Master of Engineering in Industrial Engineering (specialising in Energy Technologies) from the Universidad Politécnica de Madrid, he started his career in the mid-90s at CIEMAT in the last phases of the construction of the TJ-II Stellarator, the Spanish Fusion energy device. Following two years in the private nuclear industry, he returned to science, joining CERN in the late 90s to work on the design, construction and installation of the LHC particle collider. While in CERN, he also accomplished his PhD on nuclear materials related with the LHCb experiment, which was awarded as best of the year in his engineering home university.

In 2005, he left CERN to follow his professional passion, fusion, joining the Magnet Division of the ITER International Team. In 2007, he joined the ITER Organization in Cadarache, as technical responsible of the TF coils of ITER until 2012. Juan then moved to Fusion for Energy to become Project Leader of IFMIF/EVEDA in Japan for six years before returning to Cadarache as F4E's deputy Head of ITER Project department. Presently, he is the EUDA Representative in ITER Organization. Juan has authored over 50 scientific articles in a wide variety of technological fields of Accelerators, Nuclear Fusion worlds and materials science co-authoring above 100.

Akko Maas, ITER Organization



Akko started his work on Plasma Physics in 1990 in the Netherlands before moving to the JET Joint Undertaking in the UK in 1991. He obtained his PhD in Plasma Physics in 1995. In 1999 he moved to France to start work on the Tore Supra tokamak at CEA Cadarache.

In 2000 he started to work on the European proposal to host ITER in Cadarache or Vandellós and started working with the ITER Joint Central Team and with the different partners involved in the negotiations on the ITER Agreement.

Following the site decision in 2005, Akko was asked to start the ITER Joint Work Site in Cadarache as of January 2006. He has had many different roles in the project over the years. Akko is currently Deputy Head of the Office of the Director-General at the ITER Organization and was ITER Council Secretary ad-interim for part of 2025.

Masanori Onozuka, Former ITER Organization



Dr. Masanori Onozuka is a former member of ITER Organization, who served as Head of Central Integration Office between 2015 and 2019. Prior to joining ITER, he had worked more than thirty years in the nuclear industry with Mitsubishi Heavy Industries, Ltd. (MHI) in Japan, a leading engineering and manufacturing company. He has extensive domestic and international activities in the nuclear industry including his secondment to the ITER-EDA at Garching Joint Work Site between 1996 and 2001, and licensing and engineering project management for new nuclear power plants in the U.S. at MHI's affiliate between 2007 and 2014.

After his time with ITER Organization, he served as Head of ICT Solution Headquarters of MHI and currently is Senior Executive Vice President of Mitsubishi Heavy Industries America, Inc. in the U.S.

In addition to his nuclear fission engineering knowledges and experiences, he possesses strong technical knowledge of tokamak devices through long-term research and management of various fusion projects, including JT-60, JT-60U, and the design and R&D for ITER and DEMO. He is an alumnus of MIT, with a degree in the nuclear engineering. He is a member of the Sigma Xi, Scientific Research Society, as well as a member of the American Nuclear Society and the Atomic Energy Society of Japan.

René Raffray, Retired (ITER Organization)



René Raffray has contributed to the ITER effort at different times including as part of the CDA in the late 1980's, the EDA from 1993 to 1998, and more recently the construction phase in Cadarache from 2009 to the end of 2021 when he retired after serving there as Blanket Integrated Product Team Leader and as Blanket Section Leader. He led the effort on the design and procurement of associated Blanket systems including setting up the overall work

organisation, interfacing with ITER Domestic Agencies responsible for procurement and their industries, overseeing all technical aspects including finalization of the design, analysis of all Blanket components and performance of required supporting R&D, developing detailed implementation plans for all work, and monitoring and controlling costs and schedules for all Section activities.

Prior to that he was a Research Scientist and Lecturer at the University of California, San Diego where his responsibilities were mostly split between two multi-institution programs: the ARIES advanced design studies of fusion power plants for which he was the Engineering Leader, and the High Average Power Laser program for which he was the Chamber Task Coordinator.

He received his doctoral degree in Mechanical Engineering (1985) and both his master's degrees in mechanical engineering and administration (1983) from the University of California, Davis, and his bachelor's degree in mechanical engineering (1979) from Loughborough University of Technology in England.

He has a strong publication record with more than 170 peer-reviewed publications and more than 60 articles in conference proceedings (as author or co-author) covering a range of fusion technology topics. These include some seminal work which are still being referred to such as on the tritium behavior in ceramic breeders, the dynamics of IFE dry wall and liquid wall chambers, the first wall behavior under high energy transients, the use of SiCf/SiC in fusion blankets, and the critical heat flux behavior of water-cooled plasma facing components.

He is a Fellow of the American Nuclear Society (ANS) and a ITER Emeritus Fellow, and is recipient of a number of awards, including Outstanding Technical Achievement Award of the Fusion Engineering Division of ANS in 2004 and the IEEE Nuclear & Plasma Sciences Society Fusion Technology Award in 2009, as well as several ITER Awards for Extraordinary Service.

Gabriella Saibene, Retired (Fusion for Energy)



Gabriella is a retired expert, having worked in Nuclear Fusion R&D for more than 30 years, leading experiments and people, designing and constructing high-tech systems and managing Projects in the Fusion field. Following the completion of her studies in plasma physics in Milano with a thesis on Fusion Technology (structural materials), she joined the JET project in 1987, working on first wall materials and deuterium and tritium retention in plasma exposed surfaces.

She moved to the JET Plasma Operations group in 1991, becoming the first female Session Leader, and later Expert Session Leader. Alongside plasma operations, she also worked on in-vessel component design as well as in the JET experiments.

In 2000, Gabriella moved to the European Home team of ITER (later called EFDA Garching team). For the next 8 years she continued to work on the JET experiments. In EFDA she became responsible for the conceptual design of the ITER Electron Cyclotron (EC) Upper Launchers, leading the European contribution to the ITER Electron cyclotron design and integration in ITER.

She moved to F4E in 2008, when she was selected as Task Force Leader for EFDA JET and lead experimental studies of the baseline scenarios for ITER as well as specific studies of the effects of toroidal field magnetic ripple on plasma performance.

She was appointed Head of Unit of the Antennas and Plasma Engineering in 2011, managing a team for the development and fabrication of the EC and IC (Ion Cyclotron) heating antennas for ITER. In addition, she managed plasma engineering activities for ITER. In 2021 she became the Head of Plasma Engineering and Operation Unit in F4E, preparing for ITER exploitation (internal and in collaboration with EUROfusion, and with ITER Members), and specific plasma engineering activities (scenarios, control, and other plasma-related simulations).

Gabriella has written or contributed to hundreds of scientific and technical publications throughout her career, some of which have been seminal for the design of the ITER Tokamak and included in the Physics Basis of the ITER Tokamak. She has been a member and/or chair of scientific boards for international conferences and workshops, Scientific Advisory boards, and boards of Editors (PPCF).

Bill Spears, Retired (Fusion for Energy)



A nuclear engineer, who started at the UKAEA's Culham Laboratory in 1976, working on magnet design and undertaking system studies for future fusion power reactors. He joined the NET project in 1983 in Garching, Germany, where he was responsible for costing, and undertook system studies of NET and first-of-a-kind power reactors. In 1988 he worked on the ITER conceptual design, providing the first ITER cost estimate.

In 1991 he moved into NET technical administration, helping to organise the European Fusion Technology R&D programme. In 1994 he joined the ITER engineering design as assistant to the Head of the Garching Joint Work Site and was responsible for design integration documentation for the Garching Site, ITER Public Information, and managing the local Garching infrastructure.

In 2006 he moved the Garching Joint Work Site to its construction location in Cadarache, France, and took responsibility for ITER document management. In 2007 he returned to Garching to work on Broader Approach (BA) Activities, on preparations for construction of the JT-60SA tokamak. He was responsible for BA document management, as well as specification and development of technical interfaces, credit, tracking and financial management systems, updating of the JT-60SA Plant Integration Document, and public information for the BA projects. In May 2015 he retired, to devote more time to his family, and to write.

Coordination Team

John Holden, EUROfusion



John is the Strategic Coordinator for the EUROfusion Programme Management Unit. He has been with EUROfusion for eight years, managing the coordination of fusion technology work packages and programmatic strategy.

Before joining EUROfusion, John completed a master's in civil engineering at the University of Warwick before starting his career in non-fusion sectors. He brings a wealth of stakeholder engagement, deliverables management and project coordination experience to the Handbook team. John is managing the delivery of all chapters and coordination of the full project team.

Jesus Izquierdo, ITER Organization



Jesus Izquierdo is serving ITER Organization as Deputy Head of the Central Integration Division, leading the integration of various technical aspects within the ITER project. Before joining ITER, Jesus worked at Fusion for Energy, where he held significant roles including Associate to the Chief Engineer.

His responsibilities included the implementation of robust system engineering processes (technical integration, configuration control, requirements management) but also management of analysis in several domains like safety, neutronics or RAMI. He began his career at IDOM Consulting, Engineering, Architecture, where he was involved in the design activities, and the safety and licensing of nuclear facilities around Spain. He also worked as a Doctoral Researcher at the Universitat Politècnica de Catalunya, contributing to national and international fusion-related projects and stages in Ciemat, CCFE and ENEA.

His academic background includes a PhD in Nuclear Engineering and a Master of Engineering in Industrial Engineering from the Universitat Politècnica de Catalunya. Jesus has also contributed to the academic community through several publications and teaching of lectures.

Esmeralda Moscatelli, ITER Organization



Esmeralda Moscatelli has been with ITER since 2019, leading the organization's Library and Knowledge Management activities. She brings extensive experience from universities and research centres, with a strong track record in research data management, scientific publishing, and complex technical workflows. She supports the publication of the ITER Engineering Basis Handbook by providing layout and technical editorial support.