Gabriella Saibene

Short Curriculum Vitae

I have worked in Nuclear Fusion R&D for more than 30 years, leading experiments and people, as well as designing and constructing complex high-tech systems.

I completed my University studies with a thesis on Fusion Technology (materials) and graduated in plasma physics with full marks and honours at Milano University (1986).

In 1986-1987 I worked at numerical modelling of Tritium Extraction systems, for prediction of Tritium extraction efficiency from Tritium Blanket Modules mock-ups in the Petten reactor.

In 1998 I joined JET in the UK where I worked for 12 years full time. I started my career in JET working on first wall materials and on deuterium and tritium retention in plasma exposed surfaces in the JET tokamak. As part of this project, I designed, procured, and supervised the installation of a tritium-compatible high-vacuum system for the sampling of tritiated gas exhausts from the Tokamak. At the time I also worked on the characterisation of Beryllium as first wall components and in particular his interaction with Tritium. As part of this work, I was responsible for running a Beryllium test bed for studying the interaction between evaporated Beryllium and gases.

I moved to the JET Plasma Operations group in 1991, and I was the first woman ever to become Session Leader, and later Expert Session Leader. Besides plasma Operations, in this period I also oversaw the design of the tile shaping of the new JET inner wall, as well as collaborating to the design of the new JET divertor. I worked in Plasma Operations for 9 years, and I was responsible of planning, preparing, executing and in some cases analysing many JET experiments. In this role, I learnt how to assemble the team required for the preparation of experiments, both from the engineering side and the physics side and coordinate it in the different phases. In 1999 I was deputy Task Force Leader for the ELMy H-mode studies (baseline scenario).

In 2000 I was transferred to Garching, to the European Home team of ITER (later called EFDA Garching team). For the next 8 years I continued to work on the JET experiments (both remotely and during long missions): I became Task Force Leader in the EFDA system for two + years (Baseline scenario), expert session leader and experiment leader for the Toroidal Field Ripple experiments in JET. In Garching, l as working directly with the ITER team, located just across the road from my office. In 2004 I was nominated RO for the European contribution to ITER for the Upper Launchers and I have led the European contribution to the ITER Electron cyclotron design and integration in ITER until 2020. I created and managed a team of experts from European labs for the development of the launcher for ITER that still exist today.

I applied and got hired in F4E in 2008. I was appointed Head of Unit of the Antennas and Plasma Engineering in 2011, and I have exercised the role of HoU and of programme manager since. In addition to the leading role that I had been playing in the development of heating systems for ITER and in plasma engineering, the nomination gave me financial delegations to directly manage the programme implementation and the execution of the projects.

In F4E I worked in collaboration with my IO counterpart to restart the work on the EC launcher. The PDR was completed in 2011. In the period from 2010 to 2013, we established the technical foundations (specifications, prototype programme, simulations...) for final design. All the design and prototype work in principle under the IO responsibility was outsourced to F4E. The EC launcher and

EW projects are very complex systems directly interfacing with the Tokamak and the plasma, and their design and fabrication has to be steered and controlled to take into account the unique combination of requirements coming from the ITER Tokamak environment, plasma performance requirements and multiple technological challenges, with the cost/quality/schedule parameters of any project.

In 2021 I became the Head of Plasma Engineering and Operation Unit in F4E. The scope of the Unit is wide, including the preparation 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).

Finally, I have written or contributed to hundreds of scientific and technical publications. A reduced list of publication (295 items) is attached. Some of those have been seminal for the design of the ITER Tokamak and included in the Physics Basis of the ITER Tokamak. My publications cover tokamak physics, material physics, vacuum technology and of course EC engineering and performance analysis for ITER. If all publications are counted (including team publications) I have about 700 papers to my name.