

## Francesco Sette



### **Profile**

Francesco Sette's scientific interest and training is on the study of the fundamental properties of condensed matter and on their experimental determination. Aiming to relate material behaviour to the material atomic structure and dynamics, and to its chemical bonding, using synchrotron X-rays, he carried out experimental studies on materials as semiconductors, transition metal oxides and highly correlated systems, as well on states of matter as surfaces, interfaces, molecular systems, and liquids. These studies, measuring local electronic and magnetic properties with X-ray scattering and spectroscopy techniques, investigate the connection among local interatomic structures and macroscopic properties as magnetism, superconductivity, giant magneto-resistance, phase transformations, etc. To implement innovative research, Sette has engaged himself in the development of new and first-of-a-kind synchrotron-based X-ray techniques enabling new investigations. His principal scientific contributions are in the determination of the orbital and spin parts of magnetic moments of a specific atomic species in magnetic materials, and the measurement and identification of structural relaxation effects of hyper-sound propagation in disordered materials and liquids.

Since 2001, becoming Director of Research first and then Director General of the European Synchrotron Radiation Facility (ESRF), his interest and career activities progressively turned towards science programmes development, implementation and management.

F. Sette is considered a pioneer in synchrotron radiation research and technology, an area to which he has devoted the whole of his professional career. With an activity of more than 35 years in the field, he has distinguished himself as a:

- Experimental X-ray scientist (1980-2000), for his scientific contributions in condensed matter physics, and technical developments in synchrotron radiation instrumentation and techniques.
- Science director, manager and executive officer (2001-present), in leading the ESRF during the last decade, and conceiving and implementing its ambitious Upgrade

Programme which has totally renewed the facility after approximately 30 years from its initial conception and delivery. In line with the ESRF mission to serve the most demanding synchrotron user community from the ESRF Member Countries and all over the world, his leadership of the ESRF has strongly contributed to further strengthen the ESRF pioneer position and world reference in synchrotron science, and making the ESRF today the role model for every existing and planned synchrotron laboratory.

The inspiring principle of the activity of F. Sette as Director General of the ESRF is to foster scientific excellence, and on such base, to:

- Enable scientific research and technological innovation which is competitive, sustainable, accountable, attractive and transparent;
- Create exciting opportunities to attract, educate, train and motivate the best people in synchrotron science and technology and in science-programme administration;
- Strive for full integration at the ESRF among different genders, cultures, origins, and ages of ESRF staff and users;
- Outreach to the citizens to illustrate the power and value of scientific research, and highlighting its return to society;
- Create as much as possible opportunities for the industrial exploitation of ESRF-generated intellectual property with the purpose to increase industrial competitiveness and job creation in the ESRF partner countries;
- Favour as much as possible cooperation (both at the local level in the Grenoble area and with research organisations in the partner countries and beyond) with the objective to make the ESRF more visible, stronger and widely supported in its world-flagship role for the advancement of synchrotron science, technology and education.

F. Sette is author of more than 300 publications in scientific journals, among which more than 60 on high-impact journals (Physical Review Letters, Nature, Science). He has received several prestigious recognitions and awards for his work, and participated in many international science programme review committees and search and interview panels.