Università
Ca'Foscari
Venezia

Awarding of Ca' Foscari Honorary Fellowship to **Lucio Braicovich**

Politecnico di Milano and ESRF
Emeritus of the European Synchrotron Radiation Facility

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Showing the invisible: highlights from x-ray physics

X-rays were discovered by Roentgen about 130 years ago, and they still play a major role in science and society. In fact, the steady improvement of x-ray sources has opened up entirely new research fields, and has led to extraordinary scientific results. This trend will likely continue in the coming years, since new x-ray sources of ever increasing brightness are becoming available. Historically, the major breakthrough in the field of x-ray sources has been the appearance of synchrotron radiation and its implementation in a variety of fields traditionally considered to have nothing in common. This effort has boosted interdisciplinary researches and has made visible properties of materials which were long thought to be invisible. I will present the current state of the art, together with some historical milestones, with examples taken from medicine and with major emphasis from fundamental physics. The aim of the presentation is to discuss some basic concepts in a way understandable also by people without a background in physics. On the other hand, the presentation will keep as much as possible the rigor of scientific communication. This ambitious goal requires a language and a style very different from those used currently in the media.

Lucio Braicovich
Lucio Braicovich started his scientific activity on condensed matter physics at the Politecnico di Milano around 1968. He has been a pioneer in two wide fields: the one of photoemission spectroscopy, and the one of x-ray scattering. He introduced the photoemission technique in Italy and developed a long-term collaboration with Stanford University, using one of the very first synchrotron facilities worldwide, available on that campus. At the end of the '80s, he moved from Stanford University to the European Radiation Facility in Grenoble, where he was the project leader of the RIXS (Resonant Inelastic X-ray Scattering) activities on correlated systems. Together with Giacomo Ghiringhelli, he received in 2018 the Condensed Matter Division Price of the European Physical Society for having "introduced and scientifically explored the high resolution RIXS". Another major interest of Lucio Braicovich during his career has been teaching. He took advantage from the several international research collaborations set up over the years, to develop a strong synergy between research and teaching. In this spirit, Lucio Braicovich has been teaching for 40 years a course on Quantum Mechanics for the Engineering students at the Politecnico di Milano. Moreover, he contributed substantially to the creation of the Degree program in Engineering Physics. This activity paved the way to analogous initiatives in other universities.