Curriculum Vitae Augusto Marcelli
#ORCID 0000-0002-8138-7547

16/6/1959	: Born in Roma (Italy) - Italian citizenship.
June/1984	: Physics degree - University of Roma *La Sapienza* (110/110)
1985	: Research Contract (Art. 26 - D.P.R. 382/80) - *Camerino* University
1985	: Associated to the scientific activities of the INFN - LNF (5th Committee).
1990-1996	: Professor (Contract Art. 100) - *Camerino* University.
12/1985-present	: Employed by INFN at the LNF laboratory as scientist (since 03/2000 as *Primo Ricercatore*)
04/2013	: Associated to the scientific activities of the *Rome International Center for MAterials Science* (RICMASS – Superstripes)
20/01/2017	: Associated to the scientific activities of the *Istituto Struttura della Materia del Consiglio Nazionale delle Ricerche* (ISM-CNR)
01/2019-07/2022	: Appointed as scientific advisor on bilateral policies and activities for the internationalization of scientific and technological research at the Italian Ministry of Foreign Affairs (DGSP-Uff.IX)
2019- 2022	: Italian representative in the Council of the UNESCO SESAME project
09/2023	: Scientific Attache' at the Italian Embassy in Stockholm

Augusto Marcelli was involved in synchrotron radiation research since his degree in Physics in 1984 and since then he proposed and run in cooperation with national and international teams several experiments approved by the Scientific Panels of many synchrotron radiation facilities operational in the world such as BESSY, BSRF, Diamond, NSRL, KEK, LURE, SSRL, SRS, UVSOR and ESRF.
He was appointed to a permanent position as staff scientist of the INFN to work to synchrotron radiation researches. In the 90's was leader of one of the first European teams working in the Japanese synchrotron radiation facilities of Tristan (6 GeV) and Photon Factory (2.5 GeV) where he realized experiments of magnetism with circularly polarized X-rays. In particular, he realized the first experiment showing the dynamics of a magnetic transition using the circular dichroism method in the x-ray region. This is the first study of a magnetic phenomenon studied and characterized on a single atomic site quoted by Lovesey and Collins in a book already in 1996. (Europhys. Lett. 28, 1994, 135-141).
In the field of high-temperature critical superconductors, thanks to the knowledge acquired in the study of highly correlated materials and the analytical tools developed, he interpreted the absorption spectra at the Cu L_3 edge. His work demonstrated that the presence of the superconducting metallic phase in the cuprate superconductors is associated with the presence of "holes" induced by doping in the oxygen valence band, directly correlated with the critical temperature. (Solid State Comm. 63, 1987, 1009-1013) This research has shown - for the first time - the existence of $3d^9L$ states, i.e., the states induced by doping, a research mentioned by Alex Muller in his speech at the ceremony of the Nobel prize. More recently in 2012 he published on PNAS a research showing that in ceramic superconductors the competition among "fractal networks of nanoscopic defects" improves the high temperature superconductivity (Proc. Nat. Acad. Sci. 109, 2012, 15685-15690). This scenario opens prospects for the engineering of new materials of technological interest.
He proposed and built the first Italian Infrared synchrotron radiation beamline in the DAΦNE-Light laboratory and was the scientist responsible for its operation until june 2006. From 2005 to 2006 he was also responsible of the UV beamline in the same SR facility.
Since 1986, in collaboration with Prof. Mottana he started to apply synchrotron radiation techniques to materials of mineralogical, geophysical and environmental interest. In particular, he opened new frontiers in mineralogical/environmental analysis of extremely small amount of dust, gathering unique information by applying synchrotron-radiation spectroscopic methods such as Total-Reflection X-Ray Fluorescence (TXRF) and X-ray Absorption Near Edge Structure (XANES) techniques, complementary to classical mineralogy. He demonstrated that the characterization of airborne particle components trapped inside deep ice cores, precious proxy for assessing environmental and atmospheric circulation variability and regional-to-global climate change at different time scales, is possible also at extremely low concentration (down to the *ppb* range).
He has proven organizational and management abilities witnessed, in particular by the capability in the chairmanship of several conferences and workshops and the coordination of national and international projects. For the INFN he was responsible of projects approved by the 5th National Committee and within the framework of the X Protocol of Scientific and Technological Cooperation between Italy and China, Coordinator of a project devoted to synchrotron radiation applications.
During the Y2K he has been responsible of the Computing and Network Data System of the LNF laboratory of the INFN and Member of the INFN Board for New Data Technologies.
From 1990 to 1996 he was a Contract Professor of Physics at Camerino University, but during his career lectured in the Universities of Roma I, Roma III, Chieti, Salerno and Sassari.

In the framework of International Cooperation Agreements of the Foreign Minister he was coordinator of a bilateral program between Italy and Argentina for biomedical researches (*Non conventional analysis with synchrotron radiation of biological samples for biomedical applications* - 2006-08), coordinator of the project *Imaging and spectromicroscopy with synchrotron radiation* within the framework of the XII Protocol of Scientific and Technological Cooperation between Italy and China (2007-09), and coordinator of the project of Great Relevance *Investigation of local structure and magnetism of Co nano-structures* in the framework of the bilateral agreement between Italy and India of the MAECI (2012-2015). He was also coordinator of the project *3-Dimensional Graphene: Applications in Catalysis, Photoacoustics and Plasmonics* within the framework of the Italian-Chinese Collaborative Research Projects under the MoU between the MAECI and the National Natural Science Foundation of China (2018-2020).
From 2001 he is consultant of the IHEP (Institute of High Energy Physics - China) for synchrotron radiation activities and in 2011 has been the first Italian Visiting Physics Professor of the Chinese Academy of Science. At present he is one of the High-end Foreign Experts of the State Administration of Foreign Experts Affairs (SAFEA) of the P.R. of China.
In the European framework he has been the principal investigator for INFN of two networks and coordinators of the DASIM (Diagnostic Applications of Synchrotron Infrared Micro-spectroscopy) initiative involving all European SR IR microscopy facilities. In particular, within this project he has been coordinator of a node of this Specific Support Action. This node included physicists and chemists in an established research partnerships that involved all synchrotron infrared microscopy facilities operational or under construction in Europe: ANKA, BESSY, DAFNE, ELETTRA, ESRF, LURE, SLS, SOLEIL, SRS, DIAMOND and MAXLAB.
In the research area of accelerators he was one of the main proponents of the IKNO facility in Sardinia (Italy): a storage ring dedicated to the emission of coherent synchrotron radiation in the THz domain. At present in the framework of the European project EUPRAXIA devoted to an ultra stable light source generated by plasma acceleration, he coordinates the scientific case of the LNF *User Facility*. He is also member of the Compact Light Source project and regarding the R&D of RF devices and materials for accelerators he has been coordinator of the INFN experiments NORCIA (2013-15), DEMETRA (2015-2018) and NUCLEAAR (2018-2020). The last R&D project is devoted to new technologies and materials to manufacture devices with superior mechanical and electrical properties for the next X and W band RF devices.
For his scientific career and international expertise in January 2019 has been appointed as scientific expert on bilateral policies and activities for the internationalization of S&T research at the Directorate General for Cultural and Economic Promotion and Innovation of the Italian Ministry of Foreign Affairs and International Cooperations (MAECI- DGSP).
His research areas include: correlation phenomena in x-ray absorption spectroscopy, multiple scattering theory applied to core level x-ray absorption spectra of solid and liquid systems, circular magnetic x-ray dichroism in intermetallic rare earth compounds, soft x-ray absorption of light elements of geophysical interest and under extreme conditions, FTIR micro-spectroscopy and IR imaging applied to proteins, cells and tissues, time resolved experiments in the IR domain and synchrotron radiation instrumentation, in particular IR and x-ray optics, fast infrared detectors and RF accelerator components.
With a H-index = 47 and >9100 citations, since 2013 Marcelli is present in the list of the Top Italian Scientists (TIS) of the Via-academy.org (http://www.topitalianscientists.org). In 2013 he earned the National Habilitation to Full Professor for Sector 02/B1 [*Experimental Condensed Matter Physics*].

Granted patents

1997-2007 - Pseudo-spherical stepped diffractor constructed under constant step width conditions (Multi stepped monochromator)
Patent Europe Nr. 97830282.6-2208 deposed from INFN on 11/06/97 and published on 16/12/98;
Patent USA Nr. 09/063482 deposed from INFN on 20/04/98;
Patent Japan Nr. 339424/97 deposed from INFN on 25/11/97.

Institutional responsibilities

01/1992 - 11/1998	: Head of the Users Committee of the Computing Center of the LNF/INFN;
25/03/1999	: Member of the Safety Systems Committee of the Radioprotection service of the LNF;
02/1999-2000	: Head of the LNF Computing and Network service of the INFN;
04/1999-2000	: LNF deputy in the Committee for the new Computing Technologies;
24/07/2000	: Appointed by the Director of the LNF as Delegate in absence (*Delegato di Direzione*);
05/2000	: Member of the working group nominated by the Director of the LNF to prepare and manage the European contracts, appointment confirmed in 2002 for the TARI program
2002–6/2006	: Beamline responsible of the SINBAD infrared synchrotron radiation station at DAΦNE;
2002-6/2006	: Beamline responsible of the UV (DXR-2) beamline at DAΦNE;
8/01/2004	: Member of the working group to study future LNF development strategies;
2018/2020	: Member of the Committee nominated for the evaluation of all selections for Research Grants (*Assegni di Ricerca)* of the LNF/INFN.
2019 – 2022	: Italian representative in the Council of the multilateral UNESCO SESAME project.