FRANCESCA BRERO

CURRICULUM VITAE

Francesca Brero currently holds the position of RTD-A at the Department of Physics, University of Pavia.

Her main research interests are (i) the analysis of medical images (MRI, CT) with advanced techniques (radiomics, AI), (ii) the study – by means of NMR, μSR, SQUID magnetometry techniques - of static and dynamic magnetic properties of nanomagnetic systems and the hyperthermic and relaxometric properties of superparamagnetic nanoparticles.

She completed her Ph.D. in Physics at the University of Pavia with a thesis titled "Multifunctional modalities of iron oxide magnetic nanoparticles: applications in diagnostics and magnetic fluid hyperthermia." She obtained her Master's Degree in Physics with a specialization in Biomedical Physics from the University of Pavia.

Her professional experience includes post-doctoral positions at the National Institute for Nuclear Physics (INFN) in Pavia and the Department of Physics at the University of Pavia.

She has also been involved in various teaching activities at the University of Pavia, including as a lecturer and contract teacher. Currently, she leads the course "Medical Diagnostic Techniques with Ionizing Radiations" for the Master's Degree program in Physical Sciences, Curriculum Biomedical Physics. This course equips students with essential knowledge and skills in utilizing ionizing radiations for medical diagnostic purposes.

She is serving as a referee for international peer-reviewed journals and participating in conferences as a speaker and organizer. She has also been involved in editorial activities for international peer-reviewed journals. Additionally, she has been actively engaged in research projects funded by the INFN, focusing on topics such as medical imaging, therapeutic techniques, nanomaterials and AI applied to medical images.