

**Marcelo Roldán Blanco**, MsC in industrial engineering and MsC in material science engineering from the Universidad de Navarra holds a PhD in Materials Science and Engineering from the Universidad Rey Juan Carlos, Spain, awarded in 2015 with CUM LAUDE distinction and the Spanish Nuclear Society Prize for the best doctoral thesis in "Nuclear Science and Technology." His research has focused on the development and characterization of advanced structural materials for nuclear fusion reactors, particularly investigating irradiation effects using state-of-the-art techniques such as STEM, FIB, and nanoindentation.

Dr. Roldán is highly skilled in transmission electron microscopy (TEM), with extensive experience in the preparation and characterization of samples subjected to ion irradiation. He has utilized advanced TEM techniques, including electron energy loss spectroscopy (EELS), scanning transmission electron microscopy (STEM), and convergent beam electron diffraction (CBED), to analyze microstructural and defect evolution in metallic materials for nuclear fusion applications. His expertise includes optimizing lamella preparation for TEM analysis using focused ion beam (FIB) technology and correlating mechanical properties with nanoscale microstructural changes.

Over more than a decade at CIEMAT's National Fusion Laboratory, he has contributed significantly to various European and national projects related to nuclear fusion technology, including EUROfusion and TECHNOFUSION. His work spans from the mechanical and microstructural characterization of irradiated materials to the development of new reduced-activation alloys for fusion reactors. He is the principal investigator in multiple projects, such as the development of 9-14% Cr ODS steels for first-wall components of fusion reactors.

Dr. Roldán is a prolific researcher with numerous publications in high-impact journals and has presented his findings at prestigious international conferences. He is also an experienced educator, serving as a lecturer and coordinator in engineering programs at various Spanish universities. His expertise extends to supervising master's and doctoral theses and evaluating national and international R&D projects.