

Frédéric CHRISTIEN

51 years old – Professor

Mines de Saint-Etienne – Institut Mines Telecom

Laboratoire Georges Friedel (UMR CNRS 5307)

158 Cours Fauriel - CS 62362 - 42023 Saint-Etienne cedex 2 – France

+33 7 71 44 04 14 - frederic.christien@emse.fr



Education

- 2013 Habilitation (HDR), University of Nantes, France, *Grain Boundary Segregation in Metals. New Quantification Methods applied to Sulphur Segregation in Nickel.*
- 2001 PhD in Metallurgy, University of Nantes, France, *Grain Boundary Embrittlement of 17-4PH Martensitic Stainless Steel during Low Temperature Ageing.*
- 1997 MEng in Materials (diplôme d'ingénieur), INSA de Rennes (Institut National des Sciences Appliquées), France.

Professional Experience

- 2025-2029 Holder of the “SIRA” Industrial Chair on *Intergranular segregation and fracture properties of low-alloy steels*
- 2016-2024 Head of the “Mécanique Physique et Interfaces” group (~25 people), Mines Saint-Etienne, France.
- Since Dec. 2015 Professor in Materials, Mines de Saint-Etienne, Laboratoire Georges Friedel (CNRS – UMR-5307).
- 2004-2015 Associate Professor (Maître de conférences), University of Nantes, Institut des Matériaux Jean Rouxel (CNRS – UMR-6502).
- 2010-2011 Visiting Researcher, Department of Materials, University of Oxford, *NanoSIMS Quantification of Grain Boundary Segregation.*
- 2002-2004 Post-doc, CEA (Physical Metallurgy Group, Saclay), *Cluster Dynamics Modelling of Precipitation and Point Defect Clustering in Irradiated Materials.*
- 2001-2002 Assistant Professor (1 year contract), Ecole Polytechnique de l'Université de Nantes.

Community Service

- 2011-2015 Elected Member of the French National University Council (CNU) in Materials Chemistry

Main Teaching Activities

At the University of Nantes (2004-2015):

General Metallurgy, Physical Metallurgy, Microscopy and MicroAnalysis

At Mines Saint-Etienne:

Heading the Materials Science and Engineering master program since 2022

Master courses (taught in English): Metallurgy, Crystal Defects, Solid State Diffusion

Research Interests: Surface and Interface Segregation, Hydrogen Embrittlement, Physical Metallurgy, Materials Degradation and Ageing, Durability, Solid State Diffusion, Microstructures, New Methods of MicroAnalysis using Ion and Electron Beams, Phase Transformations, Neutron Diffraction

PhD supervision: 12 PhD theses (defended) + 6 PhD theses in progress

Participation in 30 **thesis or habilitation juries.**

Publications: 64 papers in peer-reviewed international journals, co-author of 2 books, 60 talks (including 17 invited), 10 invited seminars.

Reviewer for the following journals: *Metallurgical and Materials Transactions, Scripta Materialia, Surface Science, Surface and Interface Analysis, Applied Surface Science, Materials Characterisation, Journal of Surface Analysis, Computational Materials Science, Journal of Alloys and Compounds, Electrochemistry Communications, Materials Science and Engineering A, Materialia, Philosophical Magazine Letters, Journal of Materials Science.*