

FLORIAN MARTI

R&D Scientist | Polymer Chemistry & Solid-State Batteries Lyon, France | (+33) 06 75 61 46 52 | florian-marti@orange.fr [[linkedin.com/in/florian-marti](https://www.linkedin.com/in/florian-marti)]

PROFESSIONAL PROFILE

PhD candidate in polymer chemistry (expected graduation Dec 2026) with over 3 years of intensive R&D experience in the development of all-solid-state lithium-ion batteries (ASSLIBs). Specialised in designing polymer architectures via anionic and RAFT polymerisation, formulating solid polymer electrolytes, and fabricating coin cells for electrochemical validation. Co-inventor on a US patent for hybrid solid polymer electrolytes. Experienced in cross-functional collaboration within an industrial joint-laboratory (Arkema) and adept at translating fundamental science into scalable processes.

RESEARCH INTERESTS

Development of (co)polymers applied as solid electrolytes for all-solid-state battery design. Design of novel ion-conductive hybrids combining inorganic fillers (halides, sulfides) with polymeric matrices (PEO/PEG-based systems) for the next-generation solid-state batteries. Ion transport in polymers and polymer/inorganic composites, interface engineering, and scalable processing of solid electrolytes.

TECHNICAL SKILLS

Polymer Synthesis Pathways and Processes: Anionic, Free-radical, RAFT, Homogeneous media, Suspension, Emulsion, RAFT-PISA, Bulk.

Polymers for Battery Development: Design of Gel/Solid Polymer Electrolytes (GPE/SPE), Hybrid electrolyte systems, Coin-cell fabrication.

Electrochemical Characterisation: EIS, Cyclic Voltammetry, Pulse Voltammetry, Chronoamperometry, Galvanostatic cycling.

Material Characterisation: DSC, TGA, DMA, Rheology, XRD, XPS, SEM-EDX, TEM, AFM, Contact Angle, NMR (^1H , ^7Li , and ^{13}C), FTIR, Mass Spectrometry (MALDI-TOF and ESI).

Chromatography: SEC, GC, HPLC, HPIC.

IP & Strategy: Patent filing (US), Prior-art analysis, Freedom-to-operate assessment.

PROFESSIONAL EXPERIENCE

Joint-Laboratory CP2M & Arkema | Lyon, France PhD Candidate (R&D Scientist) | Oct 2023 – Present

Leading the design and synthesis of novel polymer architectures via RAFT polymerisation applied to all-solid-state lithium-ion batteries. Research work focused on improving PEO-based (co)polymer(s) ionic conductivity at room temperature, and electrochemical stability window. Formulating solid polymer electrolyte systems and fabricating coin cells; conducting comprehensive electrochemical characterisation (EIS, Staircase voltammetry, galvanostatic cycling). Collaborating across academic and industrial teams to translate fundamental polymer science into manufacturable electrolyte solutions.

Key accomplishment: Awarded the Elsevier Poster Prize at the Bordeaux Polymer Congress 2026 (BPC 2026).

Université de Sherbrooke | Sherbrooke, Canada R&D Intern (Materials Chemistry) | Jan 2023 – Aug 2023

Synthesised new hybrid solid polymer electrolytes for solid-state lithium-ion batteries, targeting improved room-temperature ionic conductivity and mechanical stability. Processed polymers into coin cells and performed rigorous electrochemical testing (cycle life, safety evaluation). Utilised advanced characterisation (NMR, SEC, DSC) to correlate polymer architecture with electrochemical performance.

Key accomplishments: Co-authored and filed a US Patent regarding hybrid solid polymer electrolytes, demonstrating capability in IP strategy and protecting novel innovations.

Resicare (Affiliate of Michelin) | Clermont-Ferrand, France R&D Intern (Adhesives & Polymers) | Apr 2022 – Aug 2022

Designed and executed experimental protocols for decay testing on rubber–adhesive interfaces, to evaluate failure mechanisms caused by ozone exposure. Performed multi-modal characterisation (FTIR, tensile strength, SEM-EDX) to identify failure modes and propose mitigation strategies.

EDUCATION

PhD in Polymer Chemistry (Expected Dec 2026)

SPLiT Joint-Laboratory (CP2M & Arkema), Université Claude Bernard Lyon 1, Lyon, France

Master's Degree in Nanomaterials Chemistry & Characterisation

Université de Sherbrooke, Quebec, Canada | 2022 – 2023

"Ingénieur" Degree in Chemistry (French Equivalent to MSc)

ECPM, Université de Strasbourg, France | 2020 – 2023

Bachelor's Degree in Chemistry

Université Paris-Saclay, Orsay, France | 2018 – 2020

LANGUAGES

French: Native

English: Professional Proficiency (TOEIC 925/990 – C1)

DIVERSITY & EQUAL OPPORTUNITY AWARENESS

Active member of Engineers Without Borders (May 2021 – May 2022). Managed a tutoring program for high school students from underrepresented backgrounds, mentoring them in STEM subjects and fostering interest in scientific careers. Committed to promoting gender equality and inclusivity in academic and research environments.

REFERENCES

Franck D'Agosto, CNRS research director, CNRS, franck.dagosto@univ-lyon1.fr, PhD supervisor

Marchal Laureline, Engineer R&D Battery expert, Arkema, laureline.marchal@arkema.com, PhD scientific advisor

Jerome Claverie, Professor, Université de Sherbrooke, Jerome.Claverie@USherbrooke.ca, Master internship supervisor