

Annie LE GAL LA SALLE

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Head of the "Fuel cells and electrolysers" team of the "Electrochemical Energy Storage and Conversion" (ST2E) group at the Institut des Matériaux de Nantes Jean Rouxel (IMN).
Board member of the "French Research Network on Hydrogen" (FRH2) research federation n°2044 from CNRS.

Education

July 1988: Engineering degree - Ecole Supérieure de Physique et de Chimie Industrielles de Paris (ESPCI).

July 1988: Master in Analytical Chemistry - Paris VI University.

October 1991: PhD - Paris VI University (Analytical Chemistry and Corrosion).

July 2000: HdR ("Habilitation à Diriger les Recherches") from Nantes Université.

Professional background and thematic research activities

October 1990 - October 1994: Laboratoire d'Electrochimie Organique (Clermont-Ferrand): Organic electrochemistry, Electroanalysis, Immunological titrations.

Since 1994: Institut des Matériaux de Nantes Jean Rouxel - "Storage and Electrochemical Transformation of Energy (ST2E)" Group: Fuel Cells and High Temperature Electrolysers (since 2006) and Solid Chemistry and Electrochemistry for lithium batteries (1994-2006).

Collaborative projects

- **Lithium batteries:** Participation in several international collaborative projects (1994-2000) with Canada (Hydro Québec), India, Australia, and the French companies Bolloré, EDF, BATSCAP, ERAS Labo and Rhodia and French academic partners LEPMI and SERCOF.

- Hydrogen:

- Participation:

- in the ANR projects EVERESTE (Electrolysis of water vapor carried out on symmetrical cells operating at high temperature) (2008-2009) and CONDOR (Proton-conductive ceramic battery: Development, Optimization and Realization of a PCFC stack operating at intermediate temperatures) (2008-2011),

- in the European project EFFIPRO (Efficient and Robust fuel cell with novel ceramic proton conduction electrolyte) (2009-2012).

- Responsibility for tasks:

- in the ANR project INNOSOFC (Integration of innovating electrolyte materials in an IT-SOFC cell) (2010-2012),

- in the European Eurostars project ROXSOLIDCELL (Production of novel redox resistant anode supported SOFC cells and their integration into industrial fuel cell systems) (2012-2015),

- in the Franco-German ANR program ARCADE (Robust and innovative metal-supported electrolysis cell based on a protonic conductive ceramic for a decarbonized energetic system) (2019-2022),

- in the European project Eurostars MODTESTER (Modular large cell stack TESTER) (2020-2023),

- in the France 2030 OPHARM project (Offshore production of hydrogen analysis and roadmap) (2021-2023),

- in the H2020 European project NOUVEAU (Novel electrode coatings and interconnects for sustainable and safe SOEC).

- Coordination:

- of the TITEC ADEME project VALORPAC (Integration of a Fuel Cell into a waste valorization chain) (2012-2016),

- of the Regional project DEBHAT, (Electrochemical decontamination at high temperature of gaseous mixtures issued from biomass) (2019-2023),

- of the National (PEPR Hydrogène) project FLEXISOC (FLEXibility of SOC towards fuels) (2022-2026).

Consulting activities:

- Expertise for the french companies SNECMA (Vernon) (2013-2014), BREAL (June 2017) and BIORET-AGRI (2021-2022).

- Reviewer of Research PhD grants for the French Pole Metropolitain de Côte d'Opale in June 2020 and June 2021.

Scientific production :

81 publications (including 2 book chapters), 175 oral or poster presentations, 3 patents, reviewer in several journals (15 - 20 articles per year), and numerous vulgarization communications and videos.

Supervision and teaching :

- Since 1993, 15 PhD directions or co-directions, 7 supervision or co-supervision of technicians or post-doctoral researchers, 32 supervisions of internships (IUT, University masters, engineering schools).

- Teaching (master level) at Nantes University and engineering schools (Ecole Centrale de Nantes, Polytech Nantes and ICAM).

Other responsibilities:

- Responsibility for IMN's relations with the WEAMEC network (West Atlantic Marine Energy Community) gathering the ecosystem of renewable marine energies in the Pays de la Loire,

- Responsibility for IMN of visits towards various audiences: middle and high school students, associations, ...

