

ILV

Institut Lavoisier de Versailles

PEPR, NATIONAL RESEARCH AGENCY (ANR) AND CNRS CONTRACTS

PEPR TASE - Technologies avancées des systèmes énergétiques

The ILV (EPI) has received funding for the recruitment of a post-doctoral fellow and a doctoral student.

ILV is currently involved in several ANRs either as coordinator or as partner:

Call for proposals 2024

- **HARI** (SORG coordinator, JCJC)
"HeteroAromatic Rings Interchange"

- **POTENTIAL** (SORG coordinator, PRC)
"New PhOTo- and Electrochemical - and -fuNcTIonalizations of EnALs"

- **ELOPOM-H2** (MIM partner, PRCE)
"Engineering ChalcoPOM-based composites as Hydrogen evolution catalysts in PEM electrolysis cells"

Call for proposals 2023

- **DisTCOvery** (EPI partner, PRC)
"Discovery and tuning of new TCOs based perovskites"

- **ALSATIAN** (EPI partner, PRCI avec l'Allemagne)
"Advancing Halide Perovskite Solar Cell by Functional Interlayers"

- **PolyBact** (MIM coordinator, PRC)
"Polyoxometalate-based hybrid molecular materials for antibacterial photodynamic therapy in the visible region"

- **POMEROL** (MIM coordinator, JCJC)
"Super-reduced polyoxometalates: structural elucidation, solution behavior and coordination properties"

Call for proposals 2022

- **ADECS** (EPI partner, JCJC), 2022-2026
"Aging in Different Environments of Cu(InxGa1-x)Se2 Surfaces"

- **Radpolimer** (SORG partner, PRC), 2022-2026
"a Radical Approach to new Organic Light-Harvesting Materials"

- **Surf-ORGALEP** (SORG partner, PRC), 2022-2026
" Surface-Organized Lewis Pairs for Asymmetric Multicatalysis"

- **Cycada** (SORG partner, PRC), 2022-2026
" New Reagents for Complementary Approaches to Catalytic Asymmetric Cycloadditions of Aza-dipoles"

- **Quinoa** (SORG coordinator, PRC), 2022-2026
" Axially Chiral Aryl-Quinolones: Atroposelective Construction and Applications in Catalysis"

- **CLUSPOM-H2** (MIM coordinator, PRC), 2022-2026
" Push-pull tandems based on metal Clusters and Polyoxometalates for solar production of H2"

- **DOMINO** (MIM coordinator, PRC), 2022-2026
" Design of Chiral Porous Bio-hybrid Materials based on Rigid and Functionalized Oligopeptides as Asymmetric Catalysts for CO2 Conversion"

- **CHAOPOM** (MIM coordinator, PRCI), 2022-2026
"Chaotropic Polyoxometalates: from Fundamentals to Applications"

Call for proposals 2021

- **D-FACTO** (EPI partner), 2021-2024
"Diamond-based Active Antireflective Optical Windows with Omniphobic Properties"

- **LESOMMETA** (SORG coordinator), 2021-2025
"Light-Emissive Self-Organized Molecular METAmaterials"

- **PMCOCAT** (MIM coordinator), 2022-2025
"POM@MOFs Composites for the Photocatalytic Reduction of CO2"

- **MOTIC** (MIM partner), 2021-2024
"Metal Organic Thiolate Coordination Polymers as Innovative Thermoelectric Materials"

Call for proposals 2020

- **RemotAld** (SORG coordinator), 2020-2024
"Selective remote functionalizations of conjugated aldehydes"

-**DANthe** (MIM coordinator), 2020-2024
"POM decorated Au nanostars"

- **COCONUT** (EPI partner), 2020-2023
"Development of a CVD plasma assisted process for the synthesis of spherical boron doped diamond core-shells and advanced characterizations"

- **THIOMOFS** (MIM partner), 2020-2024
"Multi-redox porous crystalline hybrid chalcogenides"

Call for proposals 2019

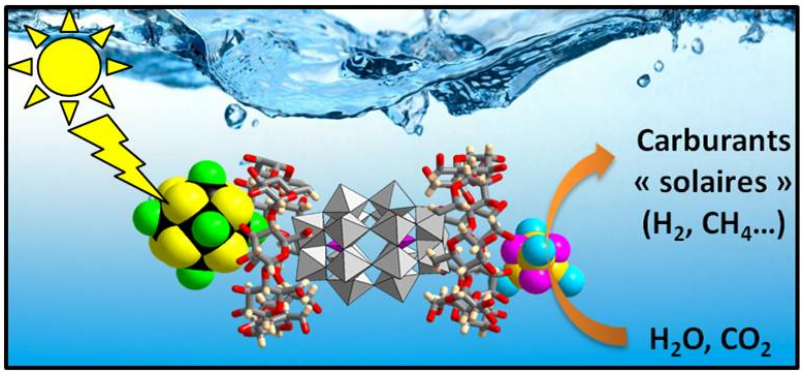
- **Serial-X Energy** (MIM partner), 2019-2023
"Developing Serial X-ray Crystallography Methods for Hybrid Energy Systems"

- **EMERGE** (MIM coordinator), 2019-2023
"Design of bio-hybrid materials based on biological entities and Metal-Organic Frameworks for environmental applications"

- EMERGENCE@INC2023: **Unraveling the secrets of the super-reduction of polyoxometelates to make the most of them in redox-flow batteries** (coordinator: Clément Falaise, MIM group)

- EMERGENCE@INC2020: **MATUMBA project** (Ultrathon Materials under Argon Bombardment) (coordinator: Damien Aureau, EPIgroup)
The MATUMBA project concerns a fine physico-chemical study of two-dimensional (2D) materials such as graphene or transition metal dichalcogenides. The main objective is the use of ion bombardment sources using ultravacuum argon ion beams to modify and characterize ultra-thin systems. Thanks to a precise control of the parameters of the gun and the understanding of the induced surface reactivity, the ultimate physico-chemical characterization as well as the eventual functionalization of these nano-objects (sheets, single layers) are hoped.

- CNRS-Momentum "***Hierarchical assembly based on inorganic building blocks: a bio-inspired photo-catalytic platform***" (MIM; coordinator: C. Falaise), 2019-2021



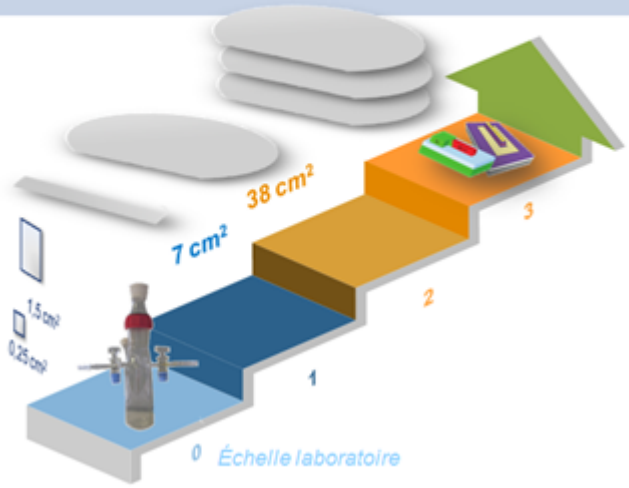
The project consists in combining inorganic functional clusters (photo-sensitizer, redox mediator, catalytic unit) with supramolecular connectors such as natural macrocyclic sugars. In his project, Clément proposes to study the fundamental mechanisms that govern the processes of interaction and association in an aqueous medium that take place between organic and inorganic components. The ultimate goal is to develop original photo-catalytic systems that allow either the production of hydrogen or the conversion of CO2 into solar fuels.

Preemergence project: "***Development of a preindustrial reactor for the passivation of III Vs semiconductors in liquid ammonia***"; (coordinator: Anne-Marie Goncalves (EPI), C2N partner, period 2019-2021). This 18-month project targets the development of a liquid ammonia reactor allowing the passivation of 1 to 3 InP wafers as well as optoelectronic devices designed by C2N.

Objectifs du programme de prématuration

Porteur : A-M. Gonçalves
(ILV, UMR 8180)

Développement d'un réacteur dans NH_3 Liq.



- Réacteurs / Wafer ∅ → 5,08 cm
- Compatible ∀ process
- Sécurité / $V_{NH_3}^{min.}$
- Eco-compatible « green chemistry »
- Suivi passivation : reprise de contact