



Laboratoire d'Electrochimie et de Physico-chimie des Matériaux et des Interfaces (LEPMI)

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Keywords : energy storage and conversion, electrochemistry, functional polymers, salts

Principal Investigators: *ELSA team*



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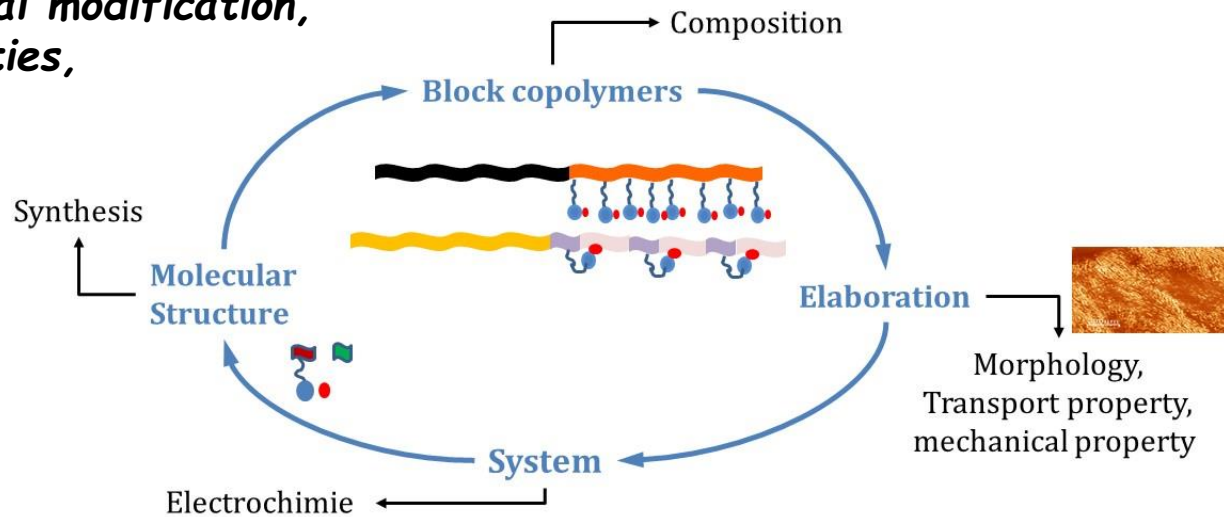
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Ionomers and Membranes for PEMFC and lithium batterie

Aims: High performance polymer electrolyte for Fuel cell and lithium batteries

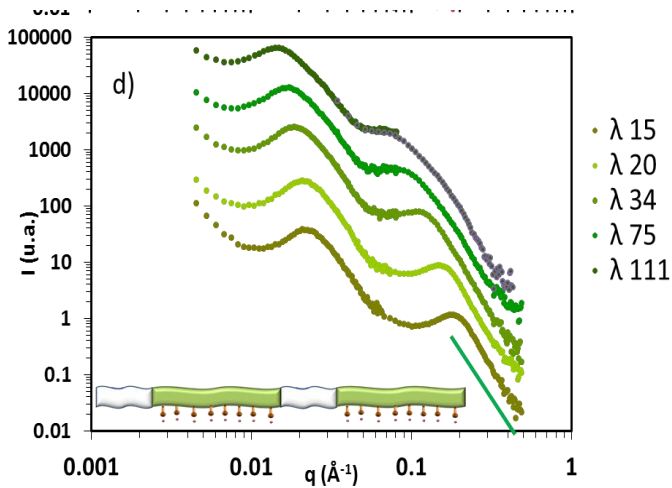
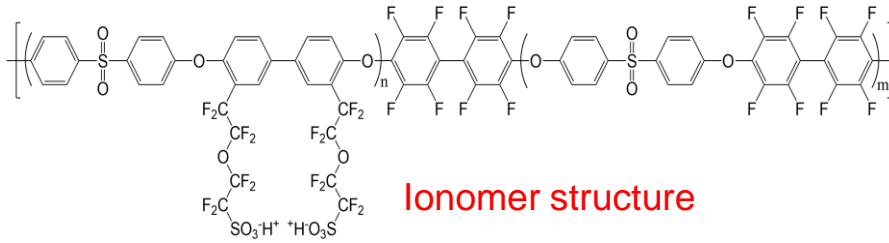
- ❑ *Synthesis of new partially fluorinated ionomers*
- ❑ *Synthesis of new lithium salts, monomers and ionic liquids*
- ❑ *Properties of fluorinated solvents and functional fluorinated salts*
- ❑ *Nanostructured polymer membranes*
- ❑ *Relation structure/property (electrochemical, mechanical)*

Method: fluorinated organic chemistry, polymerization, polymer chemical modification, thermal and mechanical properties, electrochemical investigations, Pulse Field NMR

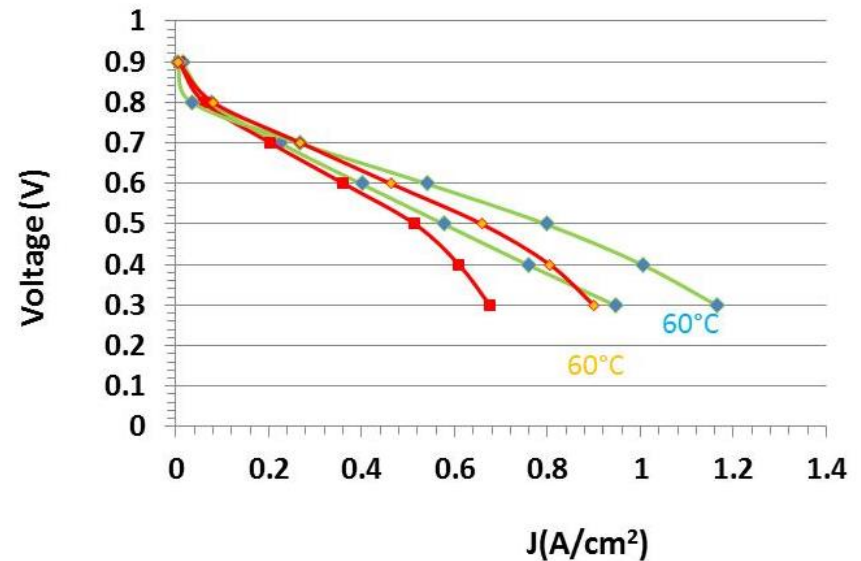
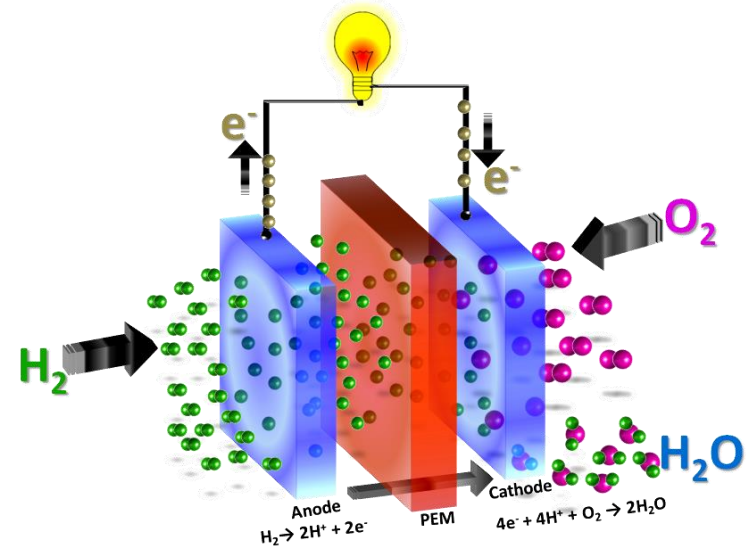
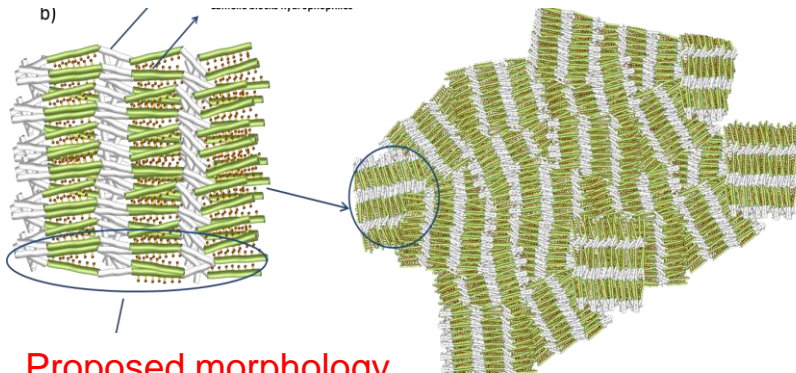


Collaborations: *Solvay, SPrAM-INAC-CEA, LLB CEA, IMN Lyon, ICR, LPMC, Padova University, Simon Fraser University in Canada, Blue Solution, Solvay, RECUPYL, CEA LITEN, ICGM, ICMCB, LPC, LPS*

From synthesis to PEMFC system: nano-structured membranes



Small angle neutrons scattering spectra

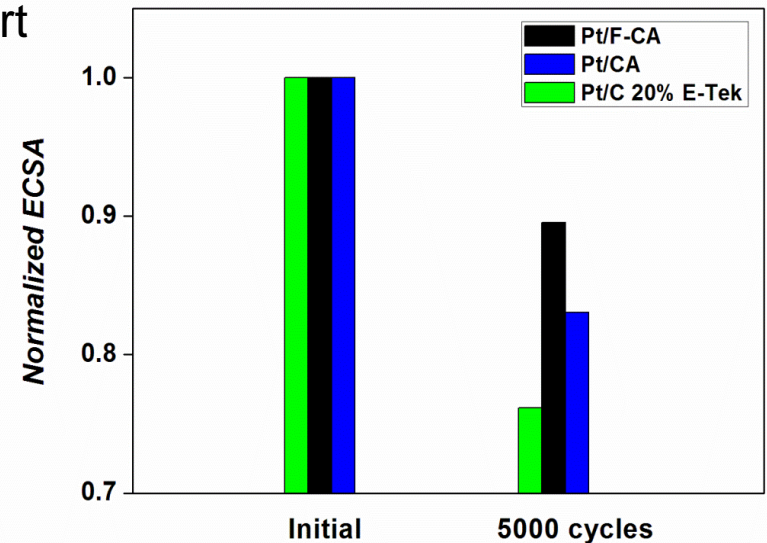


Fuel cell tests

Electrocatalyst for PEMFC

The team « Electrochimie Interfaciale » of LEPMI is involved in the characterization of the electrocatalyst activity of Pt nanoparticles deposited on fluorinated carbon support.

- same catalytic activity / non-fluorinated support
- durability improvement



Collaborations for this scientific action: ARMINES, ICCF