

DE LA RECHERCHE À L'INDUSTRIE



CEA LITEN

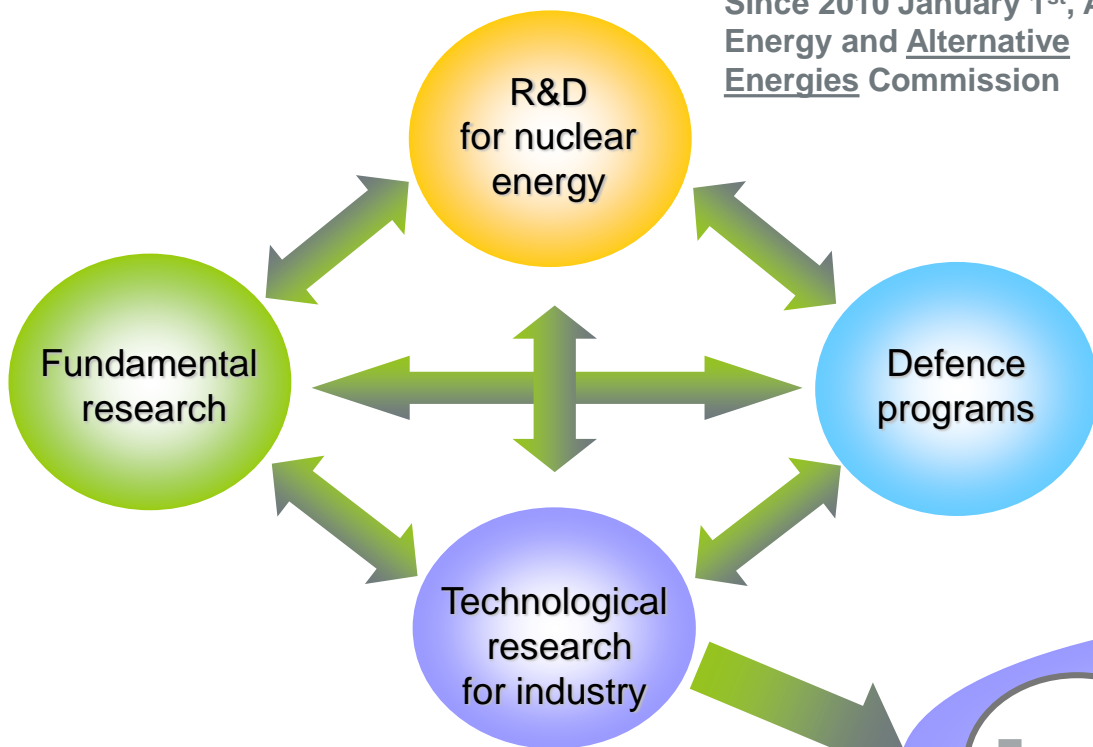
NEW TECHNOLOGIES FOR ENERGIES

FOCUS ON FUEL CELLS ACTIVITIES

DOLPHIN WORKSHOP 18/06/2021

CEA overview

Four missions of CEA
Since 2010 January 1st, Atomic Energy and Alternative Energies Commission

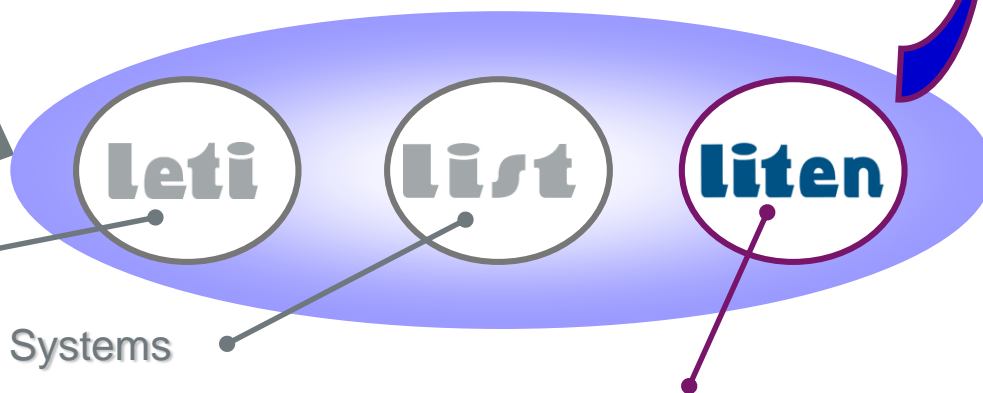


Laboratory for Micro-NanoTechnologies for Information and Communication

Laboratory for Software Systems

Laboratory for Innovation for New Energy Technologies and Nanomaterials

10 research centres in 7 regions
~ 15,000 manpower



CEA-LITEN: from energie sources to their use

Renewable Energy Sources

Electrical Solar, thermal solar, biomass, storage, RES couplings, Smart Grid

Thermal Systems



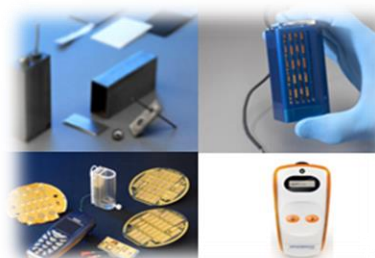
Exchangers
Heat pumps
Heat pipes
ECS
Air conditioners
Heat storage
Cogeneration

On board Systems



Batteries
BMS
Recharging
Electrical Mobility
Fuel Cells
Storage H₂
Thermoelectricity

Nomad Objects



Organic PV
Soft Batteries
Micro batteries
Micro Fuel Cells
Soft Electronics

Hydrogen Technologies



Electrolysis
Reforming
Fuel Cells
Power generators
Storage and transport H₂
Network Coupling

Materials and Advanced Engineering

Nanomaterials, powder metallurgy, advanced processes, Innovative assembling, nanofluidics, magnets, recycling

PEMFC development and characterization

Ink formulation, electrochemical characterizations



Electrode Manufacturing, MEA assembling, stack and system integration



Single cell, stack and system performance & durability test

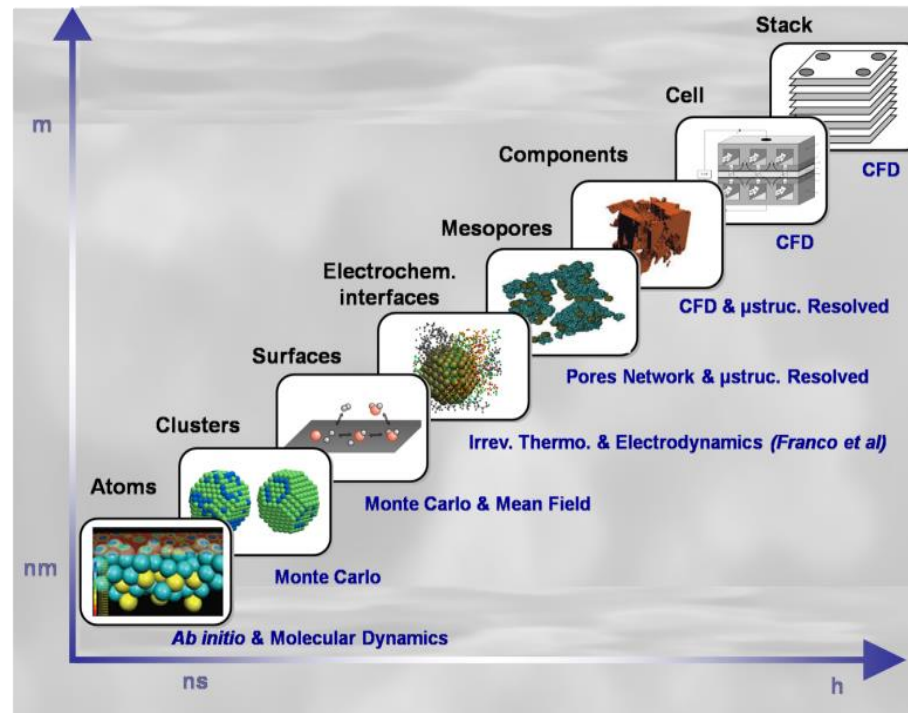


PEMFC development and characterization

Nano-characterization platform



Modeling platform



- **Contribution to specification of components, cells, stack**
- **Modeling of performance and influence of materials**
- **Printing of flow-fields, treatments of carbon substrates, electrodes with different materials**
- **Contribution to components characterization**
- **Differential cell performance tests of the components developed by the partners**
- **Contribution to large single cell and stack assembly and tests**
- **Cost analysis assessment for the different technological routes**
- **Contribution to dissemination and communication activity**
- **Coordination**

Thank you for your attention

