Institut de Recherche Dupuy de Lôme
UMR CNRS 6027

EFFECTIFS

303 membres dont :
► 106 chercheurs (53 UBS)
► 113 doctorants (88 UBS)

CONTACT UBS

Université Bretagne Sud
Director:
Pierre-Yves MANACH
contact@irdl.fr
IRDL Assistant-Director:
Sylvain CALLOCH
sylvain-calloch@ensta-bretagne.fr

http://www.irdl.fr/

TUTELLES

UMR 6027
DUPUY DE LÔME
RESEARCH INSTITUTE
IRDL

IRDL brings together research activities in the domain of Sciences for the Engineer in Brittany, mainly in the area of renewable marine energy and shipbuilding. Through its numerous collaborations with industrial partners in the maritime domain, IRDL links pure research, engineering, and technology.

IRDL is structured into four Thematic Research Hubs (PTR):

► PTR 1/ Composites, nanocomposites, biocomposites.
► PTR 2/ Multi-material assemblies
► PTR 3/ Structures, fluids, and interactions.
► PTR 4/ Energy systems.
► PTR 5/ Sustainability of heterogeneous materials.

SCIENTIFIC DOMAINS

Chemistry, Mechanics of Materials, Energy.

APPLICATION SECTORS

Aeronautics / Aerospace / Agriculture / Automotive / Building sector / Civil engineering / Energy / Marine renewable energies / Environment / Eco-activities / Marine sector / Healthcare.

EXPERTISE

Thematic Research Hub 1 (PTR1)
Composites, nanocomposites, biocomposites: Identification and characterization of polymer, fibrillar, or mineral meso-structures with dynamic structuring in the presence of interfaces or in confined conditions.
Research strands:
• Design of new eco-composites;
• Design of stimulable nanocomposite systems;
• Rheology and modeling of composite environment flows;
• Polymers and composites for automated implementation;
• Characterization of composites under dynamic loading.

Thematic Research Hub 2 (PTR2)
Multi-material assemblies: Development, characterization, and modeling of techniques enabling the assembly of materials of different kinds for long service life in severe environments.
Research strands:
• Study and optimization of assembly processes;
• Characterization of the long-term performance of assemblies;
• Development of hybrid assembly techniques for hybrid/composite structures.

Thematic Research Hub 3 (PTR3)
Structures, fluids and interactions: Materials and structures behavior in interaction with their environment and/or the manufacturing processes.
Research strands:
• Structures, fluids, and interactions;
• From shaping to dynamic behaviors.

Thematic Research Hub 4 (PTR4)
Energy systems: Design, characterization and optimization of operations in use.
Research strands:
• Thermal and energy;
• Energy and electromechanical systems.

Thematic Research Hub 5 (PTR5)
Sustainability of heterogeneous materials: Modeling and forecast of materials and structures health.
Research strands:
• Non-linear behavior of heterogeneous materials;
• Material and structural fatigue and sustainability.

SPECIFIC EQUIPMENT

IRDL uses a first-class test and measures center at both national and international levels. This means IRDL needs to acquire considerable means for testing and measurement and observations at a large range of scales, from microstructure to ministructure. These means involve generic themes:
• Characterization and observation at nano and microscopic levels;
• Characterization at macroscopic level;
• Pilot development, prototyping, and design;
• Software programs and scientific computing.

SCIENTIFIC COLLABORATION

IRDL demonstrates strong capacity to find funding for the projects ANR (14), FUI (25) or European projects such as H2020 and Interreg (4).

TECHNOLOGICAL PLATFORMS

- ComposiTIC: Technological platform specializing in the automated manufacturing sector for materials and additive manufacturing;
- PRODIABIO: Technological platform specializing in the agrifood sector.

KEYWORDS

Thermodynamics / Energy efficiency / Isolation / Energy Storage and conversion / Ecomaterials.

Photo : Hervé Glard / 1000 Maisons