Descrption of Energy Applications of Hydrogen (LApEH) Laboratory

Name of laboratory	Energy Applications of Hydrogen (LApEH) للهيدروجين الطاقوية التطبيقات LApEH2003@gmail.com
Laboratory Director	Pr. BENSACIA Nabila
Number of Team	04
Number of Researchers	29
Presentation of Team 1	
Team Title	Extraction and separation processes
Team Leader	Dr. ABELBAKI Yousra
Scientific Description of the team's program	-Treatment and removal of various organic and inorganic pollutants, micropollutants, and emerging substances from contaminated water, -study of extraction and separation processes on polymeric supports; extraction of various organic substances using different extraction processes.
Keywords	Extraction - Solid/solid - Solid/liquid - Water treatment - Adsorbent - Organic pollutants.
Presentation of Team 2	
Team Title	Catalytic processes and materials
Team Leader	Dr. DADOU Salima
Scientific Description of the team's program	Hydrogen production processes from hydrocarbons, • Development of active and stable catalysts for heterogeneous processes at pilot scale, • Formulation of solid catalytic systems with meso- and nanostructured properties, • Application to the production of high-value-added molecules highly sought after in the petrochemical industry from biomass-derived raw materials, • Energy recovery from this biomass. • Exploitation of synthetic fuels and the development of bio-based supply chains.
Keywords	Catalytic Hydrogenation - Catalysts - Heterogeneous Processes - Hydrocarbons - Petrochemicals
Presentation of Team 3	
Team Title	Biomass and energy
Team Leader	Pr. LARIBI Hassiba
Scientific Description of the team's program	Transformation of biomass into materials and chemical molecules of interest. • Conventional physicochemical and thermal processes for biomass transformation (fractionation, functionalization, pyrolysis, etc.); • New industrial biotechnology processes: manufacturing, transformation, and/or degradation of molecules using biocatalytic (enzymes) or fermentation (microorganisms) processes for industrial purposes.

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Keywords	Biomass - Biocatalytic Processes - Enzymes - Fermentation – Microorganisms
Presentation of Team 4	
Team Title	Innovative processes related to water treatment
Team Leader	Pr. BENSACIA Nabila
Scientific Description of the team's program	-Treatment and removal of various organic and inorganic pollutants, micropollutants, and emerging substances from contaminated water using different organic and inorganic adsorbents; • Synthesis of the various materials used as adsorbents, namely: polymers, biopolymers, iron oxides, etc.; • Functionalization of the surface of these materials to obtain new chelated adsorbents selective for the pollutants mentioned above. • Physicochemical study and modeling; • Physicochemical characterization of the different materials used as adsorbents.
Keywords	Water treatment - Adsorption - Advanced oxidation processes - Emerging pharmaceutical pollutants – Modeling- Innovative processes.
Scientific Production 2020-2025	
Publication Number	25
National Communications	12
International Communications	27
Scientific Events Organized 2020-2025	
National Events	03
International Events	05
Project PRFU 2020-2025	
Project PRFU	03
International research projects 2021-2024	
Title of the project	Development of new materials and adsorbents for the removal of micropollutants and emerging pharmaceutical substances.
Leader of the project	Pr.BENSACIA Nabila
Foreign Partner	Tunisia
Startup project 2022-2023	
Title of the project	Production of the enzyme Glucose oxidase from Aspergillus niger: Industrial application
Name of the supervisor	Pr. LARIBI
List of PhD students supported 2020-2025	
ABDELBAKI Yousra supervised by Pr. ISSAADI Rachide	2021
SADOUNE Zineb supervised by Pr. LARIBI Hassiba	2022
AROUN Imene supervised by Pr. BENSACIA Nabila	2022