h2team® Hydrogen engineering

Pour l'accompagnement de vos projets de mobilité hydrogène terre-air-mer !

TRAINING

Three training levels

Awareness

This module starts by introducing the hydrogen molecule supply-chain (production, storage, transport, distribution, stationary and onboard uses...). The aim is to develop or maintain an appropriate level of knowledge around hydrogen technologies as well as to address any concerns and doubts and to answer questions about the presence of hydrogen and fuel cell systems in the workplace.

Target : shop-floor staff, cable fitters, welders, drivers, building and maintenance workshop staff, new arrivals...

Intermediate

The aim of this module is to deepen teams' knowledge of the design of hydrogen solutions and study how systems work including the main risks associated with working with hydrogen.

Target : industrial designers, R&D technicians, experimental technicians, production engineers, assembly technicians, installation technicians and managers, QSE technicians, maintenance managers, business managers, aftersales managers...

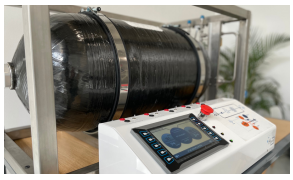
Expert

This module goes into detail on the role and function of each individual component of the hydrogen circuit for onboard applications : typical failures, up-to-date regulations, security and dependability, preventive and remedial maintenance operations .

Target : H2 project leaders, R&D engineers, installation engineers, industrial pipe-fitters, experimental engineers, risk analysts, maintenance operators, aftersales technicians ...

Our facilities and training materials

- Albi racetrack and airport
- Hydrogen refuelling station
- Hydrogen vehicle
- Model range extender H2
- Model to teach H2 maintenance operations
- And more...



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Main thematics

THE TECHNOLOGY

Introduction to hydrogen
Sources, power capacity, uses, electricity on demand
Production processes

Hydrogen storage
Different forms of hydrogen storage

Hydrogen fuel cell
Fuel-cell architecture
Different kinds of fuel cell (onboard and stationary)

Hydrogen transport and distribution
Hydrogen transport, up-to-date safety-regulation standards
Hydrogen distribution
Different kinds of fueling station (on-site or off-site production)

THE VEHICLE

Mobility and hydrogen
Why do we use hydrogen in mobility ?
Overview of hydrogen mobility applications in industry and their consumption
Architectures and hybridizations between a fuel cell and a battery
Overview of hydrogen equipment and components (high, medium and low pressure)
Homologation / approval processes in Europe

Practical work on hydrogen vehicule
Identification of hydrogen and electrical circuits in a vehicle
Identification of the working parts of a hydrogen fueling-station (production, compression, storage, distribution)
Fueling a hydrogen vehicle
Main maintenance operations for a hydrogen vehicle (visual checks, flush, component replacement, pressure relief, leak detection, etc.)

THE HYDROGEN RISK

ATEX risks
Explosive range of the hydrogen, ignition sources, ATEX zones, fire triangle
Up-to-date regulations

Safety
Concepts of safety : risk analysis, functional and dysfunctional safety concepts, scenarios to avoid, test plan, leak-detection strategies

Building upgrades
Up-to-date regulations
ATEX zoning
Hydrogen leaks: avoidance, ventilation, detection
Compliance of the building with ATEX zoning

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