



Bu proje Avrupa Birliđi ve Türkiye Cumhuriyeti tarafından finanse edilmektedir  
This project is co-funded by the European Union and the Republic of Türkiye

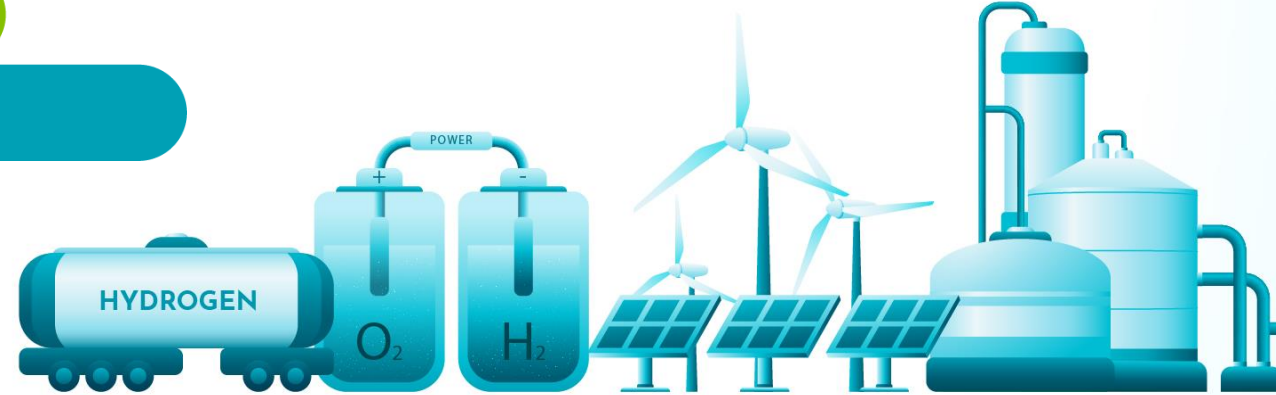


## International Brokerage Event on Clean Hydrogen Partnership 2024 Call

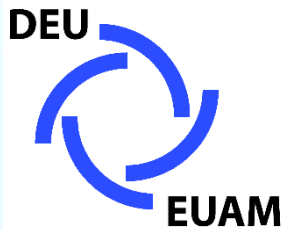


Online

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## Description of the Organization



Dokuz Eylül University (DEU) has a long and proud history of being a hub of research and education in Turkey, particularly in the Aegean Region since its foundation in 1982. It is one of the largest universities of Turkey with 63.617 students from all over Turkey and 1.860 foreign students from 102 countries study. Though its distinguished position in Turkish Higher Education area, Dokuz Eylül University intends to foster its global presence in education and research and to become a key player in the global knowledge network.



- Aerospace Engineering
- Civil Engineering
- Computer Engineering
- Electrical-Electronics Engineering
- Environmental Engineering
- Geological Engineering
- Geophysical Engineering
- Industrial Engineering
- Mechanical Engineering**
- Metallurgical and Materials Engineering
- Mining Engineering
- Textile Engineering

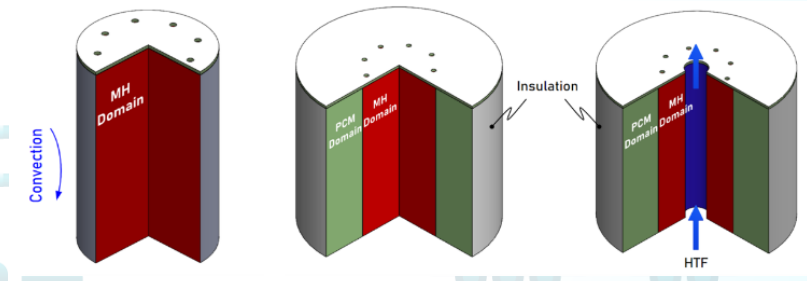
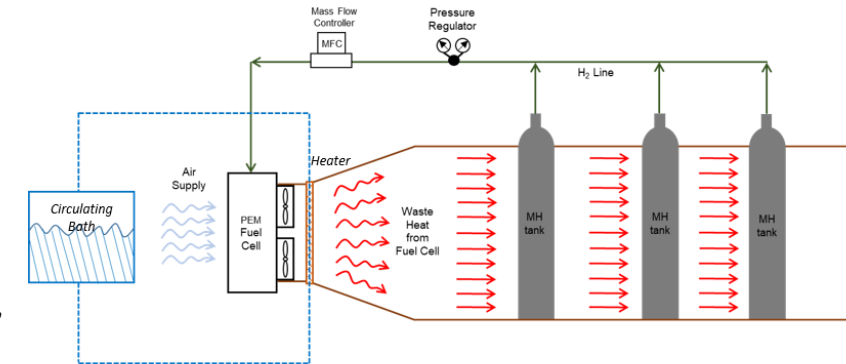
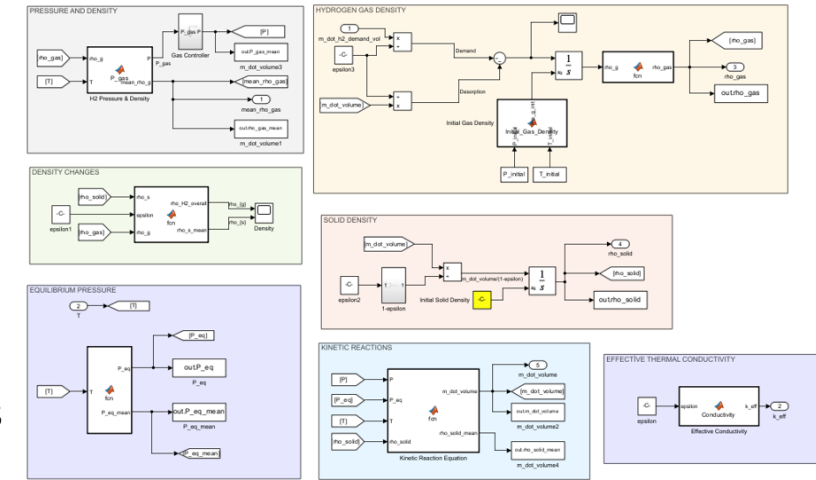


## Research activities

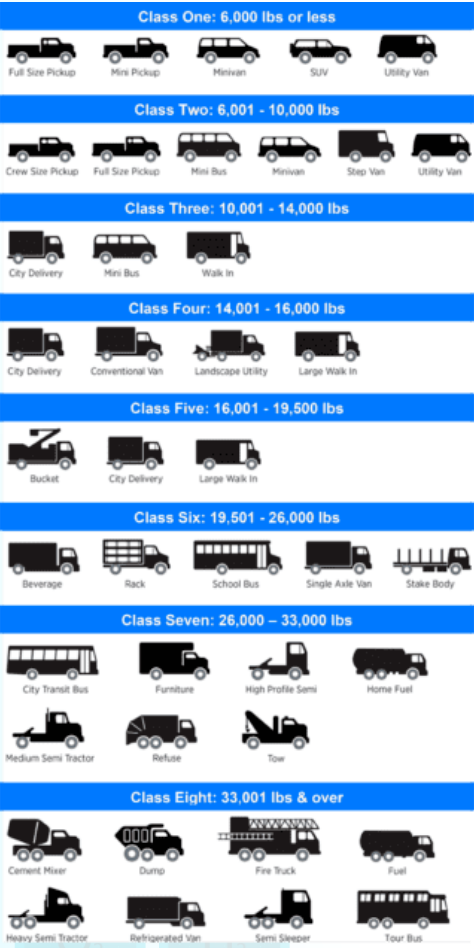
- Numerical modeling and simulation of fuel cell hybrid electric vehicle
- Finding solutions for component sizing, powertrain design and implementation to vehicle
- Drive cycle analysis, life cycle assessment and performance calculation of vehicular systems
- Thermal management of MH tanks and coupled modelling of MH tanks with Fuel-cell

## Our technical expertise

- Modeling and simulation of fuel cell hybrid electric vehicles
- Component-level modeling for thermal management strategies of MH H<sub>2</sub> storage tanks, fuel cell systems, and batteries in MATLAB / SIMULINK / COMSOL / ANSYS-FLUENT...
- Experimental studies on passive (phase change materials) and active (forced & natural convection) thermal management options of MH H<sub>2</sub> storage tanks and batteries
- Longitudinal vehicle dynamics
- Drive cycle simulation



The research interest can be defined as following:



Mobile Firepower		Protected Mobility	
Tracked	Wheeled	Tracked	Wheeled
<div>Heavy</div> <div>50-80 tonnes</div>			
	Main Battle Tank	Heavy Infantry Fighting Vehicle	
<div>Medium</div> <div>20-50 tonnes</div>			
	Mobile Protected Firepower	Mobile Gun System	Infantry Fighting Vehicle
<div>Light</div> <div>Under 20 tonnes</div>			
	Light Armoured Weapons Carrier	Light Reconnaissance Vehicle	Command & Liaison Vehicle

- Hybrid Vehicle Powertrains
- Electric Vehicle Powertrains
- Fuel Cell Vehicle Powertrains
- Design of Powertrain Components
- Optimisation of Powertrain Components
- Performance Analysis of Vehicles
- Drive Cycle Simulation of Vehicles
- Vehicle Integration of Fuel Cell Systems

For all types of vehicles and vehicle powertrain systems





# Consortium – required partners

## Project partnership for research with H2 Related Industry and University & Research Center on:

HORIZON-JTI-CLEANH2-2024-02-04: Demonstration of innovative solutions for highcapacity, reliable, flexible, and sustainable hydrogen compression technologies in commercial applications

HORIZON-JTI-CLEANH2-2024-02-05: Demonstration and deployment of multi-purpose Hydrogen Refuelling Stations combining road and airport, railway, and/or harbour applications

HORIZON-JTI-CLEANH2-2024-03-01: Balance of plant components, architectures and operation strategies for improved PEMFC system efficiency and lifetime

HORIZON-JTI-CLEANH2-2024-03-02: Scaling-up Balance of Plant components for efficient high power heavy duty applications

HORIZON-JTI-CLEANH2-2024-03-03: Next generation on-board storage solutions for hydrogen-powered maritime applications

- Electrolyzers and electrochemical hydrogen compressors
- Hydrogen Storage
- Low-cost hydrogen production
- High power range hydrogen & fuel cell applications
- Hydrogen compression in commercial applications
- Hydrogen Refuelling Stations applications
- High power fuel cell heavy duty applications
- Hydrogen-powered maritime applications
- Composite pressure vessel (COPV) for the storage and transportation of compressed hydrogen gas (CHG)
- PEMFC system efficiency and lifetime
- Hydrogen production, distribution and integrating Technologies
- H2 as an alternative energy source at the airports
- Fuel Cell Components Development
- Hydrogen and fuel cell modeling





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