Greenet

The network of Horizon Europe Cluster 5 National Contact Point.



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European Hydrogen Week

European Hydrogen Week 2024
GREENET Pitch session
TechForum, 19th November 2024

Clean Hydrogen Partnership

The GREENET project has received funding from the EU Horizon Europe programme under Grant Agreement No 101069604

Sabancı University

1996	1999-2000	1.317.581 m²	187.445 m²
Established	First academic year	Campus size	Covered area

- Non-profit Foundation University
- A Top-Ranked Research University
- All Programs in English
- Scholarships for all graduate students
- 2500+ undergraduate students,
  600+ graduate students,
  6500+ undergraduate alumni, 2000+ grad alumni

Faculty of Engineering & Natural Sciences

110 faculty members, 10 full time instructors,
3 researchers, 27 post-docs

4 Research Centers & 120 Laboratories

- *Center of Excellence on Nano Diagnostics (EFSUN)*
- *Center of Excellence in Data Analytics (VERİM)*
- *Integrated Manufacturing Research and Application Center (SU-IMC)*
- *Nanotechnology Research and Application Center (SUNUM)*

https://www.sabanciuniv.edu/en

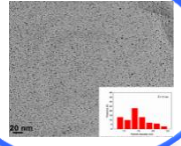
Greenet

Strong background & long term experience & a wide range of equipment/ facilities on hydrogen technologies (fuel cells & electrolysis & hydrogen storage)

Design & Synthesis & Fabrication

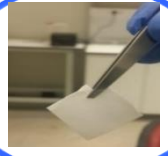
Ex-situ & In-situ Analysis & Electrochemical Testing

Catalyst



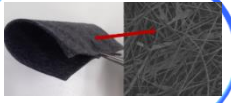
- *Hydro/solvothermal*
- *Photocatalytic*
- *Electrophoretic*
- *Sol-gel*

Membrane



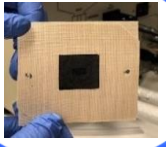
- *Radiation grafting*
- *Electrospinning*

Electrode

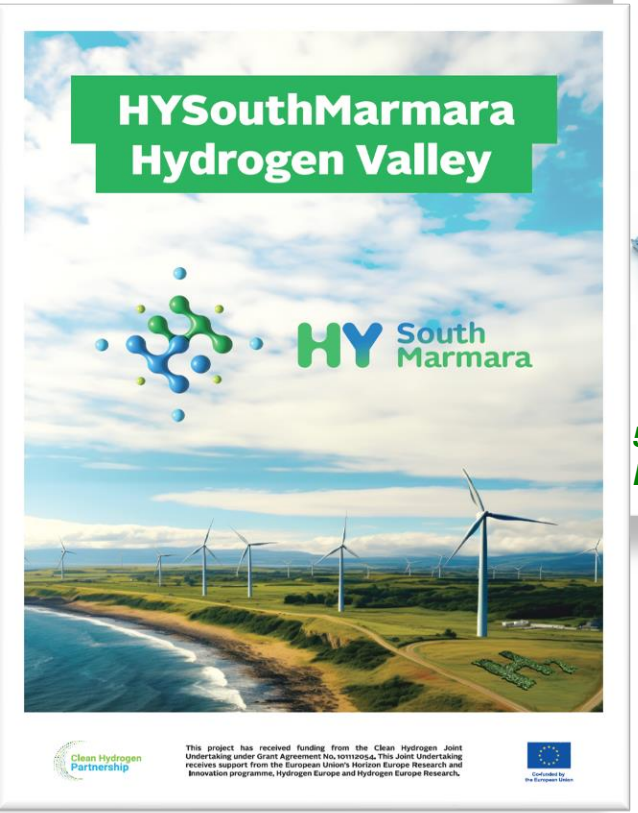


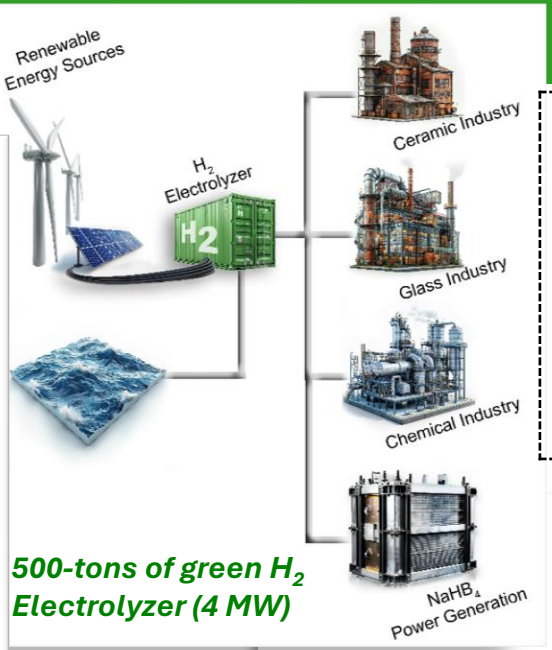
- *Ultrasonic spraying*
- *Screen printing*
- *Electrospinning*

MEA



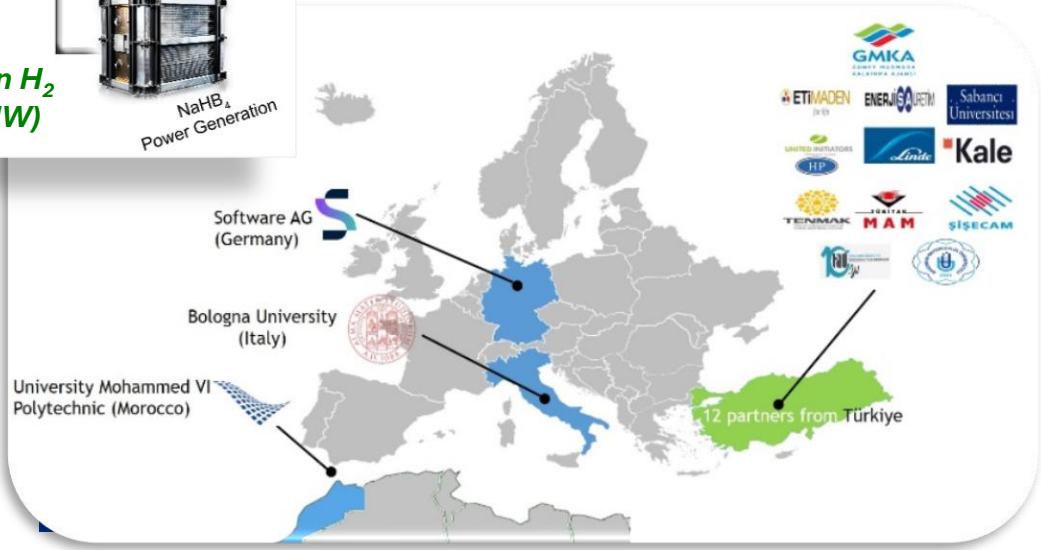
Selected Projects on Hydrogen Technologies





500-tons of green H_2 Electrolyzer (4 MW)

- ✓ Hydrogen Valley- South Marmara Hydrogen Shore (2023-2028) (Core partner)
- ✓ M-ERA.NET Project, Novel Asymmetric Anion-Exchange Membranes for Fuel Cells (2023-2026) (Coordinator)
- ✓ Graphene Flagship: Graphene-based Disruptive Technologies — GrapheneCore1 (2016-2018) (Task leader for fuel cells)
- ✓ Graphene Flagship: Graphene-Driven Revolutions in ICT and Beyond (2013-2023) (Task leader for fuel cells)



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Project idea & our contribution

Strategic Research and Innovation Agenda (SRIA)

Pillar 1: Renewable Hydrogen Production

Proton Exchange Membrane Electrolysis (PEMEL)

Anion Exchange Membrane Electrolysis (AEMEL)

Pillar 3: Hydrogen End Uses- Transport & Clean Heat and Power

Proton Exchange Membrane Fuel Cells (PEMFC)

Solid Oxide Fuel Cells (SOFC)

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- ✓ *Development of advanced **components** with **improved performance***
- ✓ *Reduction of **PGM content & recycling***
- ✓ *Development of **PGM-free catalysts***
- ✓ *Development of **innovative processes** for large scale **catalyst deposition***
- ✓ *Improvements to **electrocatalysts & electrodes** for **increased lifetime***
- ✓ *Development of **new/advanced membranes***
- ✓ *Development of methods to produce **optimized MEAs***
- ✓ *Integration of **recycled materials** (Pt, Ir, Ni, Co, Ce, etc.) into the components.*