

FORTH / IG
INSTITUTE
OF
GEOENERGY

13th
FORTH
RETREAT 2022



FORTH

FOUNDATION FOR RESEARCH AND TECHNOLOGY - HELLAS
INSTITUTE OF GEOENERGY

*2 years, 7 months and
.... 15 days* 😊



FORTH

FOUNDATION FOR RESEARCH AND TECHNOLOGY - HELLENIC
INSTITUTE OF GEOENERGY





About Us

- Established in 2019
- Located in the Campus of the Technical University of Crete (TUC) in Chania
- Currently hosted in 500m² space in the building of Mineral Resources Engineering School.

Economical & geopolitical significance of FORTH/IG

- **Intense growth of energy activities** in Greece and in Eastern Mediterranean.
- Challenges of the on-going process of **energy transition**.
- Greece is mostly **unexplored** for its hydrocarbons' potential. Specific challenges due to the complicated geology, the extreme sea depths etc. as well as for environment friendly exploitation of hydrocarbons reserves due to the highly developed tourism sector.
- The Institute is the first integrated scientific research body in hydrocarbons exploration and production for Greece and serves as **scientific advisor** for greek governmental bodies and as **coordinator** of the existing petroleum research groups in Greece.

Crete an energy hub

The Region of Crete is expected to be the main pole of natural gas and oil industry in Greece and in the Eastern Mediterranean due to the significant interest of major and domestic oil companies for hydrocarbons exploration in the awarded huge lease blocks of West Crete and South West Crete.



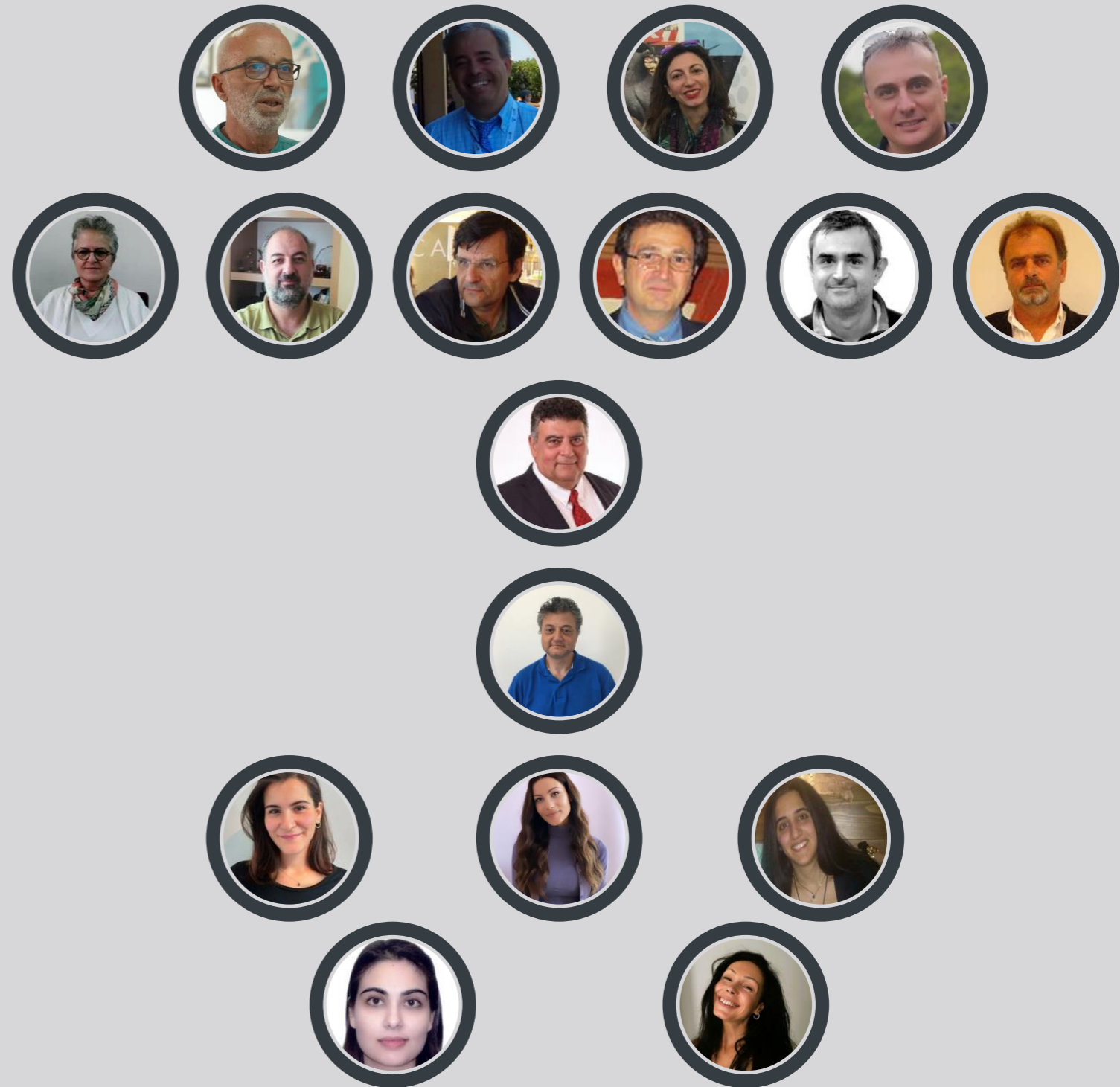


About Us

- Future premises of FORTH in Chania
- Funded by European Investment Bank & National Recovery & Resilience Plan

PERSONNEL

Researchers	4
Affiliated Faculty members	6
Affiliated researchers	1
Post-Doc Researchers	1
PhD students	3
Technical staff	2



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OUR TEAM

GeoEnergy scientists



DIRECTOR

Prof. Nikolaos Pasadakis



PRINCIPAL RESEARCHER

Dr. Spyridon Bellas



ASSISTANT RESEARCHER

Dr. Evina Gontikaki



ASSISTANT RESEARCHER

Dr. Emmanuel Stamatakis

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OUR TEAM

Affiliated Researchers



**Professor
NTUA**

Sofia Stamataki



**Emeritus Professor
TUC**

Nikolaos Kalogerakis



**Assistant Professor
NTUA**

Vassilios Gaganis



**Associate Professor
TUC**

Emmanouil Steiakakis



**Professor
TUC**

Ioannis Yentekakis



**ASSISTANT PROFESSOR
TUC**

Andreas Yiotis



**PROFESSOR
NTUA**

Dimitrios Karonis

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OUR TEAM

Laboratory – Administrative – Technical Staff & Associates



CHEMIST

Konstantina Selekou



SECRETARY

Marina Tsouchlaraki



PhD CANDIDATE

Chrysoula Tallarou



PhD CANDIDATE

Vagianna Makri



PhD CANDIDATE

Georgia Charalampous



RESEARCH ASSOCIATE

Anastasios Labropoulos

ISAC _ INTERNATIONAL SCIENTIFIC ADVISOR COMMITTEE

Hatzignatiou Dimitrios Georgios	Professor of Chemical Engineering	UNIVERISTY OF HOUSTON	USA
Kantzas Apostolos	Professor of Chemical Engineering	UNIVERSITY OF CALGARY	C A N A D A
Krinis Dimitrios	Senior Reservoir Engineering Consultant	SAUDI ARAMCO	SAUDI ARABIA
Vizika-Kavvadias Olga	Scientific Director in Geosciences	IFPEN	FRANCE
Vlassopoulos Anastasios	CEO	HELPE UPSTREAM	GREECE

FOSSIL FUELS & CARBON MANAGEMENT

Oriented to the research and development of methods and techniques for the exploration of geological formations, suitable for the generation and production of organogenic energy resources, the development of innovative methods for their production and transportation, the production of conventional fuels with minimal carbon footprint and the development of technologies for carbon dioxide capture and storage.



ENVIRONMENT & CIRCULAR ECONOMY

Oriented towards studying and developing innovative methods and techniques to address the environmental impact of the energy resources' exploitation. It also aims at the development of materials and energy reuse technologies and the elaboration and risk assessment in environmental studies.



GREEN ENERGY



Oriented towards the development of innovative technologies related to the reduction of the carbon footprint of the energy mixture using hydrogen, geothermal energy, green fuels (biogas, methanol, ethanol, ammonia) and the optimization of the structure and operation of energy systems.



FUNDS ATTRACTED IN THE FORM OF SUPPORT AND R&D

LEGAL BODY	AMOUNT EUR	DURATION
HORIZON EUROPE	750.000	2022-2025
HELLENIC PETROLEUM S.A.	500.000	2019-2023
HELLENIC FOUNDATION FOR RESEARCH AND INNOVATION	178.000	2022-2024
PREFECTURE OF CRETE	100.000	2022
MOTOR OIL HELLAS S.A.	100.000	2022
GREEN FUND	20.000	2021-2023
OFYPEKA	110.000	2022-2024
HELLENIC HYDROCARBONS RESOURCE MANAGEMENT	30.000	2022-
INTERGEO S.A.	30.000	2022-

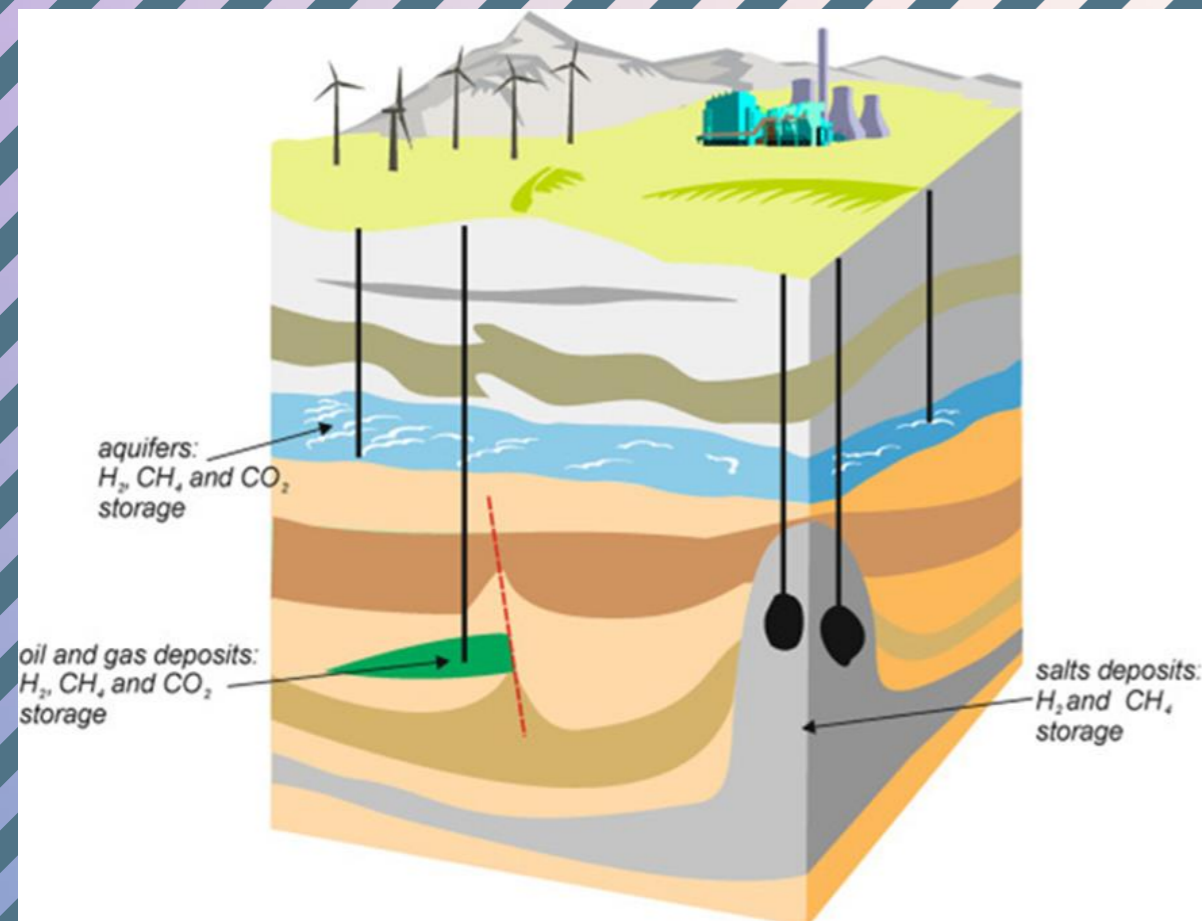
A significant collaboration in the heart of energy transition with two key-players in this area in Europe, IFPEN and UiS

TWINN2SET project

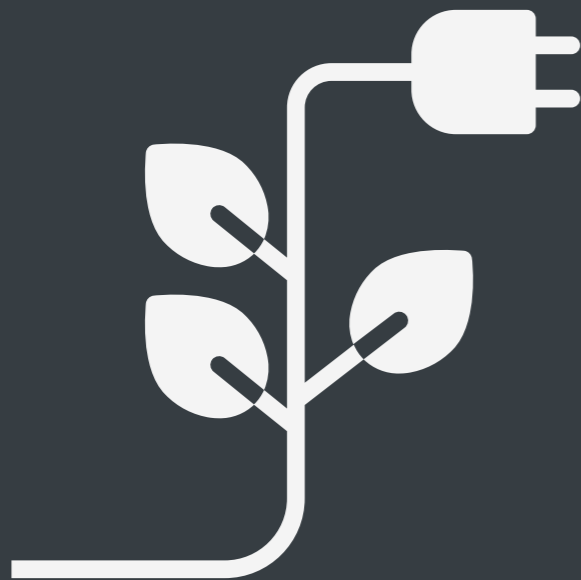
Hydrogen Storage in Geological Formations

The Research work focuses on the stability of geological hydrogen storage. The final objective is to develop an integrated geochemical/mineralogical, bio-geochemical & thermodynamic numerical simulation model that will be able to assess the performance of potential hydrogen storage geological sites for operators planning hydrogen storage facilities. The main outcomes of this tool will be the following :

- Identification of suitable geological sites for hydrogen storage & data acquisition requirements
- Assess cap rock integrity & seismic risk
- Reservoir description & characterization
- Assess subsurface distribution of injected fluids & long-term hydrogen-rock interactions
- Assess & mitigate subsurface risks of hydrogen operations



**Active scientific
collaboration with Greek
and International
Educational & Research
Institutions (MoUs)**



EAGME	2020
GeoMar GMC	2021
IFPEN	2021
HHRM	2021
ELMEPA	2021
MOTOR OIL HELLAS	2021
REGION OF WESTERN MACEDONIA	2021
GEOTECH GEORESOURCES	2022

Our Vision

High operating standards & research excellence

Credibility in the scientific community & in the energy industry

Reference point, as a geo-energy science center



We believe that scientific research directions crucial for a country, like the energy sector, deserve specific attention and support from the state.

We expect to see this support soon, especially for the development of the appropriate high-quality experimental infrastructure

Thank you