

Dimitris Marinakis

Curriculum Vitae



Contact Details

Department of Mineral Resources Engineering,
School of Engineering
University of Western Macedonia
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Education

Ph.D. in Reservoir Engineering, 2012

Technical University of Crete, Greece

School of Mineral Resources Engineering

Dissertation: Experimental and theoretical study of the formation and decomposition conditions for multicomponent natural gas hydrates hosted in subsea sediments of the bathypelagic zone: The case of the subsea mountain Anaximander

Supervisor: Prof. Nikos Varotsis

M.Sc. in Engineering - Economic Systems, 2003

National Technical University of Athens, Greece

Department of Electrical Engineering

(in cooperation with the School of Law Economics & Political Sciences, Faculty of Economics, University of Athens, Greece and the Department of Industrial Management, University of Piraeas, Greece)

Dissertation: Study of the environmental impact of a vertically integrated process of olives for oil

Supervisor: Prof. Fragiskos Batzias

B.Sc. in Chemical Engineering, 1997

National Technical University of Athens, Greece

Department of Chemical Engineering

GPA: 8.54 / 10

Dissertation: Formation of monomolecular cooper layer on silica-clay substrates for use as a selective adsorbent in the separation of gas hydrocarbon mixtures

Supervisor: Prof. Vassiliki Kaselouri-Rigopoulou

Professional experience

2022-present *Assistant Professor position in Petroleum Production Engineering at the Department of Mineral Resources Engineering of the University of Western Macedonia*

- Drilling Technology
- Hydrocarbons Reservoir Engineering
- Science and Technology of Geothermal Fields
- Oil & Natural Gas Engineering

2003-2022 *Laboratory Teaching Staff in the School of Mineral Resources Engineering, Technical University of Crete, Greece*

- PVT measurements and modeling for oil, gas and gas hydrates
- Core Analysis testing (permeability, porosimetry, water saturation)
- Rheological measurements on oil-water emulsions and drilling/cement slurries
- Upstream facilities teaching and simulation
- Flow assurance teaching
- Fluid mechanics teaching

2000-2002 *Fluid Catalytic Cracking Production Engineer, Motor Oil Hellas – Corinth Refinery, Corinth, Greece*

- Fluid catalytic cracking production engineer
- Surveillance during implementation and initial startup of new gasoline desulfurization and benzene removal units
- Participation in design and implementation of advance process control system for the FCC units (Honeywell Advanced Process Control)
- Participation in upgrading refinery's quality system to ISO 9000:2000

1997, 1999 *Independent Consultant / Researcher in Hydronomi and HYDRAM Consulting Enterprises, Athens, Greece*

Pioneer works on rehabilitation of water pipeline network & leakage control.

Application areas: Peristeri-Glyfada-Vouliagmeni

- Feasibility study for drying the wastewater sludge produced in the Athens wastewater treatment plant on Psyttalia
- Feasibility study for the rehabilitation of Galatsi - Menidi - Kiourka Water
- Designing of existing water pipeline network in AutoCAD and conversion to GIS
- Network assimilation on the computer and water flow calculation in the pipelines

1996-1997 *Research assistant in Department of Civil Engineering, National Technical University of Athens, Greece*

- Research on the characteristics and disposal potentialities of wastewater sludge, produced during the 1st and 2nd construction phase in the Athens Wastewater treatment plant on Psyttalia island
- Wastewater flow measurement, comparison with the SCADA (computer records). Data correlation and error analysis
- Installation and operation of PH-meter, conductivity-meter and data logger in the Athens wastewater treatment plant on Psyttalia island

Research interests

Reservoir fluid phase behavior and PVT experimental & simulation

Multiphase equilibria modelling (including cubic EoS models)

Core analysis

Multicomponent gas hydrates phase behavior (experimental studies & simulation)

Gas hydrates host formation properties (permeability, porosity, compressibility)

Water-in-oil and oil-in-water emulsion stability and flow properties for the oil upstream and midstream sectors

Rheology of bentonite suspensions, oil well cements

Research highlights

- Establishment of experimental systems for gas and liquid permeability studies in cores
- Establishment of experimental systems for PVT and EOR equilibria studies
- Establishment of a core flooding system for studying formation damage by drilling fluids under HPHT conditions and mitigation of formation damage via novel drilling fluid additives
- Establishment of a unique experimental system for gas hydrate phase equilibria studies
- Development of software for performing vapor-liquid equilibrium calculations for teaching purposes - EoS models
- Development of software for multiphase equilibrium calculations with gas hydrates at saturated and unsaturated conditions

Publications

Journal papers

1. Vamvuka D., Esser K., **Marinakis D.**, “Characterization of Pyrolysis Products of Forest Residues and Refuse-Derived Fuel and Evaluation of Their Suitability as Bioenergy Sources”, *Applied Sciences*, vol. 13(3):1482, 2023, <https://doi.org/10.3390/app13031482>
2. Ismail I., Gaganis V., **Marinakis D.**, Mousavi R., Tohidi B., “Accuracy of different thermodynamic software packages in predicting hydrate dissociation conditions ”, *Chemical Thermodynamics and Thermal Analysis*, vol.9, 100103, ISSN 2667-3126, 2023, <https://doi.org/10.1016/j.ctta.2022.100103>
(<https://www.sciencedirect.com/science/article/pii/S2667312622000694>)
3. Antoniou, E., Fragkou, E., Charalampous, G., **Marinakis, D.**, Kalogerakis, N., Gontikaki, E., “Emulating Deep-Sea Bioremediation: Oil Plume Degradation by Undisturbed Deep-Sea Microbial Communities Using a High-Pressure Sampling and Experimentation System”, *Energies*, vol.15(Issue13),4525, 2022. <https://doi.org/10.3390/en15134525>
4. Gaganis V., **Marinakis D.**, Samnioti A., “A soft computing method for rapid phase behavior calculations in fluid flow simulations”, *Journal of Petroleum Science and Engineering*, vol. 205, 108796, 2021. <https://doi.org/10.1016/j.petrol.2021.108796>
(5-Year Impact Factor: 3.770, source: Journal’s home page, June 2021)
5. **Marinakis D.**, Varotsis N., Perissoratis C., “Gas hydrate dissociation affecting the permeability and consolidation behaviour of deep sea host sediment”, *Journal of Natural Gas Science and Engineering*, vol. 23, p.p. 55-62, 2015.
6. **Marinakis, D.**, Varotsis, N., “Solubility measurements of methane + ethane + propane mixtures in aqueous phase with gas hydrates at vapor unsaturated conditions”, *The Journal of Chemical Thermodynamics*, vol. 65, p.p. 100-105, 2013
7. Gaganis V., **Marinakis, D.**, Varotsis N., “A general framework of model functions for rapid and robust solution of Rachford-Rice type of equations”, *Fluid phase equilibria*, vol. 322-323, pp. 9-18, 2012.

Peer-reviewed papers in conference proceedings

8. Aslanidis Panagiotis, **Marinakis Dimitris**, Puntervold Tina, Gaganis Vasilis, and Nikolaos Varotsis, “Density Changes at Supercritical and Near-Critical Conditions by Increasing CO₂ Content in Synthetic Hydrocarbon Mixtures – A Comparison Between Experiments and Simulation Predictions.” Paper presented at the SPE EuroPEC - Europe Energy Conference featured at the 83rd EAGE Annual Conference & Exhibition, Madrid, Spain, June 2022. doi: <https://doi.org/10.2118/209663-MS>
9. **Marinakis D.**, Aslanidis P., Gaganis V., “Πειραματικός προσδιορισμός της μεταβολής της πυκνότητας και της διόγκωσης μειγμάτων υδρογονανθράκων με προσθήκη CO₂ σε υψηλές θερμοκρασίες και πιέσεις ”, 1^ο Διαδικτυακό Συνέδριο Νέων Επιστημόνων «Ορυκτοί Πόροι-Περιβάλλον-Χημική Μηχανική», Kozani, Greece, Feb 2021 (Online).
10. Tallarou Chr., Varotsis V., Yiotis A, **Marinakis D.**, “Εργαστηριακή μελέτη της επίδρασης του βαθμού διαβροχής στις καμπύλες σχετικής διαπερατότητας νερού-πετρελαίου σε πυρήνες ταμειυτήρων υδρογονανθράκων”, 1^ο Διαδικτυακό Συνέδριο Νέων Επιστημόνων «Ορυκτοί Πόροι-Περιβάλλον-Χημική Μηχανική», Kozani, Greece, Feb 2021 (Online).

11. **Marinakis D.**, Varotsis N., “Experimental Evidence of Gas Hydrates Dissociation Kinetics by Shifting their Equilibrium Conditions”, The 11th International Conference on Chemistry and Chemical Engineering – ICCCE2020, Warsaw, Poland, July 2020 (Online).
(Paper published at: Journal of Physics: Conference Series, vol. 1681, 012020)
12. **Marinakis D.**, Varotsis N., “Helmholtz energy stability criterion combined with a dual stage phase split for robust multiphase equilibria simulation”, 15th Joint European Thermodynamics Conference - JETC, Barcelona, Spain, May 2019.
13. **Marinakis D.**, Varotsis N., “Experimental study of the gas hydrates dissociation effect on the properties of the host marine sediment”, 4th World Multidisciplinary Earth Sciences Symposium - WMESS, Prague, Czech Republic, September 2018.
14. Lytra S., Christidis G.E., **Marinakis D.**, “Rheological properties of bentonite suspensions after dynamic aging at high temperatures”, 16th International Clay Conference, Granada, Spain, July 2017.
15. Biotaki A., **Marinakis D.**, Kompitsaki M., Mavrigiannakis St., Kelessidis V., “The Effect of Mud Contamination on the Properties of a G-Type Cement Slurry”, to be presented in the Annual European Rheology Conference, Copenhagen, Denmark, April 2017
16. Biotaki A., **Marinakis D.**, Zografou M., Kompitsaki M., Kelessidis V., “Rheological and filtration properties of newly developed class G-type cement slurries; Investigations for field use and comparison with performance of cement slurries using standard oil-well G-type cements”, 11th HSTAM International Congress on Mechanics, Athens, Greece, May 2016.
17. **Marinakis D.**, Varotsis N., Perissoratis C., “Key sediment properties affected by the presence of gas hydrates in the ‘Anaximander’ deep sea mud volcanoes.”, 9th International Conference on Gas in Marine Sediments, Bremen, Germany, Sep. 15-19, 2008.
18. Varotsis N., **Marinakis D.**, Karantzi K., Manoutsoglu E., E.Christidis G., Perdicatsis V., Kotsakis G., Perissoratis C., Ioakim Ch. “Sedimentary and sediment stability studies on the Mud Volcanoes (MVs) of the ‘Anaximander’ Mountains, Eastern Mediterranean.” 3rd Annual meeting of Hotspot Ecosystem Research on the Margins of European Seas (HERMES), Carvoeiro, Portugal, March 2008.
19. **Marinakis D.**, Varotsis N., “Dissociation of multi-component gas hydrates in clays and their impact on the mechanical properties of the host sediment”, Conference Abstract p.69, 3rd International Conference on Submarine Mass Movements and their consequences, Santorini, Greece, October 2007.
20. **Marinakis D.**, Varotsis N., Lazaridis M., “Effect of gas hydrate stability on climatic change. The case of ‘Anaximander’ mud volcanoes”, Conference Abstract p.122, 10th International Conference on environmental science and technology, Kos Island, Greece, September 2007.
21. Kelesidis V., **Marinakis D.**, Tsamantaki C., “Laboratory assessment of drilling fluid formation damage in sandstone cores and mitigation with lignite additives for high temperature fields”, paper SPE-107762-MS, SPE European Formation Damage Conference, Scheveningen, The Netherlands, May 2007.
22. **Marinakis D.**, Varotsis N., “Natural gas hydrates in deep sea sediments: The effect of the host formation on pore pressure and on hydrate characteristics.” Geophysical Research Abstracts, Vol. 9, 10268, 2007.
23. **Marinakis D.**, Varotsis N., “Hydrates formed from dissolved natural gas in deep marine sediments”, 5th International Workshop on Methane Hydrate Research & Development, Edinburgh, UK, October 2006.

24. **Marinakis D.**, Varotsis N., Kostakis G., Christidis G, et.al. "Gas hydrate research overview in Greece", 5th International Workshop on Methane Hydrate Research & Development, Edinburgh, UK, October 2006.
25. **Marinakis D.**, Varotsis N., Kostakis G., Christidis G, "How much gas hydrates can sediment host? Characteristics affecting sediment's store capacity", 2nd International Conference in Mineral Resources Management and Environmental Geotechnology, Chania, Greece, September 2006.
26. **Marinakis D.**, Varotsis N., Pasadakis N., Yang J., Tohidi B., Perissoratis C., "Thermodynamic study of undersaturated Hydrates formed from a Gas Mixture in Marine Sediments", VIII International Conference on Gas in Marine Sediments, Vigo, Spain, September 2005.
27. Yang J., Llamedo M., **Marinakis D.**, Tohidi B., Varotsis N. "Successful Applications of a versatile ultrasonic system for gas hydrates in unconsolidated sediments", Proceedings vol. 1 *Kinetics and Transport Phenomena*, 5th International Conference on Gas Hydrates, Trondheim, Norway, June 13-16, 2005. (ISBN 82-519-2065-5)
28. **Marinakis D.**, Varotsis N., Jinhai Y., Tohidi B. "The effect on the stability of the deep sea sediment caused by the dissociation of the contained gas hydrate: The case of the 'Anaximander' mud volcano sea bed", 32nd International Geological Congress, Florence, Italy, August 2004.
29. **Marinakis D.**, Varotsis N., Yang J., Tohidi B., Perissoratis C. "Gas Hydrates in the Eastern Mediterranean seabed: Energy potential and technological challenge", Advances in Mineral Resources Management and Environmental Geotechnology Conference, Chania, Greece, June 2004.
30. Perissoratis C., Ioakim Chr., Zacharaki P., Lykousis V., Sakellariou D., Kormas K., Woodside J., Amann H., Maggiuli M., Daehlmann A., De Lange G., Casas D., Ercilla G., Meyn V., Varotsis N., **Marinakis D.** "Exploration and Evaluation of the Eastern Mediterranean Gas hydrates and the Associated Deep Biosphere", EUROCEAN 2004, Galway, Ireland, May 2004.
31. Yang J., **Marinakis D.**, Tohidi B., Varotsis N. "Sediment geomechanical response to hydrate dissociation by depressurization: An experimental study", Geophysical Research Abstracts, vol. 6, 07022, 2004.
32. Batzias F. A., Sidiras D. K., **Marinakis D.** "A GIS - Based Mapping of Pollution Caused by an Olive Pomace Oil Mill Operating in a NATURA 2000 Protected Area", 2nd International Conference on Ecological Protection of the Planet Earth, Sofia, Bulgaria, June 2003.

Chapters in academic books and textbook for oil professionals

33. Yiotis A., **Marinakis D.** "Hydrocarbon Reservoir engineering", Hellenic Academic Ebooks – Kallipos project, 2022. <http://dx.doi.org/10.57713/kallipos-258>
34. Varotsis N., **Marinakis D.** "Hydrocarbon production process and reservoir behavior", in *Coursebook on Oil and Gas Exploration, Production and Refining*, Technical Chamber of Greece, February, 2014.
35. **Marinakis D.**, Varotsis N., "Basic hydrocarbon treatment processes in refineries", in *Coursebook on Oil and Gas Exploration, Production and Refining*, Technical Chamber of Greece, February, 2014.

Research projects

HEALMED: Self-healing capabilities of the Eastern Mediterranean Sea from accidental deep-sea oil releases

The major aim of this project is to determine the self-healing capabilities of the E. Mediterranean from accidental deep sea oil releases. To achieve this goal, we will simulate a deep sea oil spill in a bioreactor system under in situ environmental conditions and study the fate of oil in the hydrocarbon plume that is expected to be formed in a deep sea release. Oil degradation accomplished with and without the application of biostimulation agents will be monitored and the development, and succession of the hydrocarbon-degrading microbial community will be assessed and associated with the progress of oil degradation over time and distance.

Scientific Coordinator for the Institute of GeoEnergy (IG) of the Foundation for Research and Technology – Hellas: Dr. Evina Gontikaki

X-PRESS - eXtreme environments: High PRESSure Sampling and experimentation system for deep sea hydrocarbon releases.

The primary aim of the X-PRESS project is to develop technologically advanced instrumentation for high-pressure (HP) sampling and ex situ experimentation without decompression at any stage of the process. The hydrocarbon degradation capabilities of deep-sea microbial communities in the Eastern Mediterranean Sea will be studied without disrupting in situ conditions, with a focus on in situ hydrocarbon biodegradation (i.e., natural attenuation) at great depths. Furthermore, in the HP incubation unit we will investigate the efficacy of “surface oil spill” dispersants as well as develop and test new ones applicable for deep-sea application and for releases of live crude oil (i.e., oil containing all light components) as opposed to surface oil spills of dead crude oil from tankers.

Scientific Coordinator for the Institute of GeoEnergy (IG) of the Foundation for Research and Technology – Hellas: Prof. N. Kalogerakis

*Funded by: The Hellenic Foundation for Research and Innovation.
Budget: 200,000 €*

Duration: Apr.2022 – Mar. 2025

Hydrocarbon Reservoir Engineering, open access e-book, Kallipos+ project.

The aim of the book is to serve as a textbook for the Oil/Gas courses in BSc and MSc Programs of the Greek Universities.

Scientific Coordinator for the Technical University of Crete: Assist.Prof. A. Yiotis

Duration: Joul.2021 – Dec.2022

Study of geochemical and petrophysical characteristics of reservoir oil and rock samples from “Katakolo” and “Ionnina” areas in Greece.

Scientific Coordinator for the Technical University of Crete: Prof. N. Pasadakis

Duration: Sep.2017

Development of novel self-healing oil-well cements for use in oil-gas-geothermal drilling.

The aim of the study was to determine the synthesis of the cement slurry with the different additives that delivers optimal rheological and fluid-loss performance. A Greek G-cement was tested in comparison with a commercial cement, for rheological and filtration properties. In order to develop cements with improved elastic and self-healing properties, the effect of an elastomer additive (rubber) was also examined on the rheological and filtration behavior of the cement slurries.

Scientific Coordinator for the Technical University of Crete: Prof. V. Kelessidis

Funded by: TITAN cement S.A., GEOTECH Georesource Technology S.A., ENDITECH S.A.

Budget: 67,000 €

Duration: Apr.2015 – Jun. 2015

Coursebook on Oil and Gas Exploration, Production and Refining. A text book was written for a training course on processes of oil-gas exploration, production and refinery – basic theory and technology. The project also included the compilation of an evaluation questionnaire for the trainees.

Scientific Coordinator for the Technical University of Crete: Prof. N. Varotsis

Funded by: Technical Chamber of Greece

Budget: 20,000 €

Duration: Jan.2014 – Jun. 2014

Core Analysis - acidizing study in core plugs and grain size distribution – for a Greek Oil Company. Core plugs were treated with hydrochloric acid 15% in order to study the changes in permeability. One of the plugs has undergone a second stage of acidization, in order to assess the effect of excess treatment on the properties of the formation. Grain size distribution study was conducted in the core plugs before and after acidization.

Scientific Coordinator for the Technical University of Crete: Prof. N. Varotsis

Funded by: Kavala Oil S.A.

Budget: 5,000 €

Duration: Nov.2009 – Jan. 2010

Experimental study and modeling of gas hydrate formation conditions and migration mechanisms in marine sediments and the associated release of the enclathrated gas in marine environment. The project tried to indulge into the drive mechanism and host formation characteristics that are responsible for the formation and migration of gas hydrates from dissolved gas in marine sediments, i.e. in absence of any free gas phase. The research involved testing of artificially made gas hydrates in natural marine sediment in laboratory, together with sedimentological analysis and modeling of the gas hydrate formation and migration processes.

Scientific Coordinator for the Technical University of Crete: Prof. N. Varotsis

Funded by: European Social Fund & National Resources EPEAEK II _ PYTHAGORAS.II

Budget: 90,000 €

Duration: 2005 – 2007

Experimental study for minimization of the reduction of core permeability from drilling fluids in oil-wells with the addition of Greek lignite. The work aimed to determine the properties of drilling fluids that are responsible for the reduction of core permeability, at high temperatures, and develop proper additives with Greek lignite.

Scientific Coordinator for the Technical University of Crete: Prof. V. Kelessidis

Funded by: European Social Fund & National Resources EPEAEK II _ PYTHAGORAS.II

Budget: 50,000 €

Duration: 2005 – 2006

Development of a novel process for seawater desalination and condensation of water solutions and waste water effluents by using gas hydrates.

The project was in collaboration with TEI Kavalas. A gas azeotrope of Xe and HFC-134a was used to formulate gas hydrates at pressure and temperature conditions near the ambient ones. Subsequently the process of gas hydrate formation and dissociation would be used in a fluidized bed reactor for the extraction of pure water from seawater and waste water effluents.

Scientific Coordinator for the Technical University of Crete: Prof. N. Varotsis

Funded by: European Social Fund & National Resources EPEAEK II _ ARCHIMIDIS II.

Budget: 75,000 €

Duration: 2005 – 2007

Study of the influence of mineralogy and overburden pressure on the phase behavior and formation kinetics of structure II gas hydrates contained in marine sediments.

The project was in collaboration with the Centre for gas hydrate research, Heriot Watt University, Edinburgh UK.

Scientific Coordinator for the Technical University of Crete: Prof. N. Varotsis

Funded by: EU Research Access to the European infrastructure for energy reserve optimization, EIERO.

Duration Oct. 2003 – Dec.2003

Exploration and Evaluation of the Eastern Mediterranean Sea Gas hydrates and the Associated Deep Biosphere.

The project was a collaboration between 8 Universities and Research Institutes, targeted to explore and evaluate the Eastern Mediterranean Sea gas hydrates and the associated deep biosphere. The selected area for conducting the gas hydrate study was the Anaximander sea-mountains in the Eastern Mediterranean (av. water depth 2000m, bottom water temp. 12-14oC). The project involved in vitro study of gas hydrate characteristics, as well as study of retrieved pristine samples from the subsea area containing gas hydrates.

Scientific Coordinator for the Technical University of Crete: Prof. N. Varotsis

Funded by: EU Framework Energy, Environment and Sustainable Development, EC CONTRACT EVK3-CT-2002-00068.

Total Budget: 2,642,100€.

Duration: 2002 – 2005

Teaching experience

Undergraduate courses, School of Mineral Resources Engineering, Technical University of Crete

- 2016-2022 *Fluid mechanics, 6th semester. (Co-Teaching with Prof. D. Vamvouka)*
- Machinery (pumps, turbines)
 - Basic examples / problems wrt flow equations, equipment dimensioning, pressure-flow calculations

Laboratory teaching and exercises in undergraduate courses, School of Mineral Resources Engineering, Technical University of Crete

- 2013-2022 *Fluid Mechanics, 6th semester.*
- Fluid rheology
 - Pressure drop of water in an annulus flow system
 - Settling velocities of solids in Newtonian fluids
- 2004-2022 *Reservoir fluids phase behavior, 7th semester.*
- Constant mass
 - Two-phase flash
- 2004-2022 *Reservoir Engineering, 8th semester.*
- Helium porosimeter
 - Mercury porosimetry
 - Permeability, Klinkenberg correction.
 - Connate water saturation

Laboratory supervisor in undergraduate theses, School of Mineral Resources Engineering, Technical University of Crete

- 2022 Tuning of Equations of State for the simulation of hydrocarbon phase behavior at reservoir conditions, Mrs. Elena Sdoukou, supervisor Prof. A. Yiotis (pending)
- 2022 *Modeling the Compositional Variation of Undersaturated Reservoir Fluids along the Hydrocarbon Column – Application in a Hydrocarbon Field located in the Mediterranean Sea*, Mr. Tryfonas Kiaitsis, supervisor Prof. A. Yiotis
- 2021 *Experimental study of the Effect of Rock Wettability on Water-Oil Relative Permeability Curves in Hydrocarbon Reservoir Cores*, Tallarou Chrysoula, supervisor Prof. A. Yiotis
- 2021 *Lumping – Delumping techniques and heavy end characterization methods for improved simulation of oil phase behavior at reservoir conditions*, Mr. Ioannis Antoniadis, supervisor Prof. N. Varotsis
- 2019 *Methodology and measurements of water-oil relative permeability in reservoir rock samples*, Mr. George Nikolaou, supervisor Prof. N. Varotsis

- 2019 *Sensitivity analysis and quality control of differential vaporization measurements of reservoir oil samples*, Mr. Dimitrios Psarras, supervisor Prof. N. Varotsis
- 2019 *Density measurements of hydrocarbon mixtures at high temperatures and pressures and comparison with estimations from volume correction methods used in cubic equations of state*, Mr. Fotis Atsaros, supervisor Prof. N. Varotsis
- 2017 *Effect of salinity on the solubility of hydrate forming hydrocarbon gases in the aqueous phase*, Mr. Ermis Proestakis, supervisor Prof. N. Varotsis
- 2016 *Experimental determination of the volume changes induced to hydrocarbon mixtures due to CO₂ solution at high pressures and temperatures*, Mr. Panagiotis Aslanidis, supervisor Prof. N. Varotsis
- 2015 *Experimental determination of vapor-liquid density and isothermal compressibility for hydrocarbon mixtures at two-phase equilibrium conditions*, Mrs. Melina Michailidi, supervisor Prof. N. Varotsis
- 2011 *Experimental study of the compressibility factor (z) for liquid hydrocarbon mixtures with methane*, Mrs. Stavroula Zervopoulou, supervisor Prof. N. Varotsis
- 2009 *Experimental study of the compressibility factor (z) for rich CO₂ and N₂ hydrocarbon gas mixtures*, Mr. Rami Mahmoud, supervisor Prof. N. Varotsis

Laboratory assistant in undergraduate theses, School of Mineral Resources Engineering, Technical University of Crete

- 2019 *Rheological properties of bentonite and palygorskite drilling slurries subjected to thermal aging at high temperatures*, Mr. George Vlachos, supervisor Prof. G. Christidis
- 2019 *Rheological properties of magnesium bentonites and sepiolites at high temperature conditions*, Mr. Nikos Athanasakis, supervisor Prof. G. Christidis
- 2017 *Development of experimental methodologies for the formation and characterization of petroleum emulsions*, Mrs. Theodora Dalakou, supervisor Prof. N. Pasadakis
- 2016 *Rheological properties of bentonite drilling slurries subjected to thermal aging at high temperatures*, Mrs. Sofia Lytra, supervisor Prof. G. Christidis

MSc courses in Petroleum Engineering, School of Mineral Resources Engineering, Technical University of Crete

- 2020-2021 *Reservoir Engineering, 1st semester. (Co-Teaching with Prof. A. Yiotis)*

- 2018-2021 *Data Analysis, 1st semester. (Co-Teaching with Dr. Ef. Paris and Prof. N. Pasadakis)*
- Density and compressibility calculations in Excel using cubic EOS
 - Optimization of surface separation system for oil, using Wilson K-factor correlation and Standing method for oil density
- 2016-2021 *PVT simulation examples in CMG's WinProp software, 2nd semester. (Instructor Prof. N. Varotsis)*
- 2015-2021 *Production Engineering, 2nd semester. (Co-Teaching with Prof. V. Gaganis)*
- Upstream facilities for oil and gas production
 - Flow assurance

Scientific supervisor in MSc theses in Petroleum Engineering, School of Mineral Resources Engineering, Technical University of Crete, Greece

- 2021 Artificial intelligence for downhole tools, Mr. 1. El-Khoury Joe
- 2021 In line measurements of oil/gas production fluids, Mr. Lianos Dimitris
- 2020 LNG transport and storage: Techniques and standards, Mr. Konstantinos Georgantas
- 2020 Gas hydrate formation in oil/gas pipelines: Simulation, prevention and technological challenges, Mrs Niki Dimou
- 2020 Gas hydrate reservoirs: Detection, simulation and production technologies, Mrs. Vanja Krsmanovic
- 2019 *Basic Design of Gas Process Train in Upstream Facilities*, Mr. Nikos Xynopoulos
- 2019 *Basic Design and simulation of gas production pipelines*, Mr. Suleiman Yusuf
- 2019 *LNG production technologies and process simulation*, Mrs. Paraskevi Fragou
- 2018 *Basic Design of Oil Process Train in Upstream Facilities*, Mr. Ali Mohsin
- 2018 *Basic Design and Simulation of Oil Production Pipelines*, Mr. Clement-Gyasi Siaw
- 2017 *Heavy and Extra Heavy Oil: Midstream processes and transportation*, Mrs. Christina Argyropoulou
- 2017 *Pressure maintenance in oil production pipelines: Equipment and simulation*, Mrs. Dimitra Dalamanga
- 2017 *Oil-in-Water emulsions: Techniques and processes for maximizing the oil recovery in high water cut oil wells*, Mr. Vassilis Papakostas
- 2017 *Water-in-Oil emulsion treatment of Crude Oil effluent: Techniques, additives and simulation*, Mrs. Despoina Savvidou

- 2016 *Basic Design of Oil Process Train in Upstream Facilities*, Mr. Andreas Klothakis

Laboratory supervisor in MSc theses

- 2018 *Treatment of water produced from the oil wells: Processes and simulation*, Mrs. Danai-Evgenia Vallianou-Setta, supervisor Prof. N. Varotsis, M.Sc. in Geotechnology and the Environment, School of Mineral Resources Engineering, Technical University of Crete, Greece
- 2016 *Solubility of gas hydrate forming hydrocarbon gases in aqueous mixtures at subsea marine sediments conditions*, Mrs. Georgia G. Bekiari, supervisor Prof. N. Varotsis, M.Sc. in Petroleum Engineering Technology, Department of Petroleum & Natural Gas Technology, School of Engineering Technology, Eastern Macedonia and Thrace Institute of Technology, Greece
- 2013 *Development of an experimental setup for measuring the compressibility factor (z) of petroleum fluids at high pressures and temperatures. Comparison of test results with EoS simulations*, Mr. Rami Mahmoud, supervisor Prof. N. Varotsis, M.Sc. in Geotechnology and the Environment, School of Mineral Resources Engineering, Technical University of Crete, Greece

Laboratory supervisor in PhD study (Erasmus student exchange program)

- Aug. 2018 - *Study of petrophysical parameters of carbonate rocks*,
Oct. 2018 PhD candidate Mr. Vitalij Kulynycz.

The study was conducted on reservoir core samples from the Lublin area (Poland) and included the following measurements:

- Helium effective porosity
- Gas permeability
- Mercury injection capillary pressure
- Amott wettability test

Specific surface area

Service

External reviewer for Journals

Journal of Natural Gas Science & Engineering

Energy and Fuels

Applied Sciences

Research Impact

Google Scholar link: <https://scholar.google.com/citations?user=Jd2X6iIAAAAJ&hl=en>

Citations: 97, (as of Mar. 2023)

h-index: 5, (as of Mar. 2023)

i-index: 3, (as of Mar. 2023)

Scopus link: <https://www.scopus.com/authid/detail.uri?authorId=57194539429>

No of Documents: 10, (as of Mar. 2023)

Total citations: 51, (as of Mar. 2023)

h-index: 4, (as of Mar. 2023)

Languages

Greek (mother tongue)

English (C2)

German (C1)