

**Brief Curriculum Vitae of**  
**Dr. Nikolaos Varotsis**  
**Professor Emeritus**  
**OF THE TECHNICAL UNIVERSITY OF CRETE, GREECE**



- **Founder & Former Director of the PVT & Core Analysis Laboratory**
- **Former Head of the PVT & FLUID ANALYSIS, Research & Development group of SCHLUMBERGER plc, Paris, France**
- **Former Vice Rector for Finance Planning and Development of the Technical University of Crete, Greece**
- **Former Chairman of the Research Committee of the Technical University of Crete, Greece**
- **Former Chairman of the Mineral Resources Engineering Department of the Technical University of Crete, Greece**

## Personal Details

NAME : **NIKOLAOS VAROTSI**

DATE OF BIRTH : 13 March 1953

PLACE OF BIRTH : Corfu, Greece

ADDRESS : Kondylaki POBOX 917, Kounoupidiana, Chania, Crete, Greece, 73100

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MARITAL STATUS : Married, with 4 children

## Studies

- **PhD** in Petroleum Engineering, Heriot-Watt University, Scotland, 1984
- **MEng** in Petroleum Engineering, Heriot-Watt University, Scotland, 1977
- **Diploma** in Chemical Engineering, National Technical University of Athens, 1976

## Current Assignments

- **Chairman** of the Research and Innovation Committee of the Region of the Ionian Islands, Greece 2020-
- **Director** of the Engineering course of the MSc in Oil & Gas of the International Hellenic University, 2012-
- **Chairman** of the Technical Council of the Ionian University 2012-

## Previous Academic Assignments

- **Professor** of Reservoir Engineering, School of Mineral Resources Engineering, Technical University of Crete, 1990-

Main tasks include to prepare the curriculum and teach undergraduate and postgraduate courses related to Petroleum Engineering and Geothermal Engineering. Supervise graduation theses, postgraduate dissertations and Doctorate theses and conduct research

- **Director** of the PVT & Core Analysis Laboratory, School of Mineral Resources Engineering, Technical University of Crete, 1991-

Founded and directed a new PVT & Core Analysis laboratory, which apart from its role in providing training to undergraduate and postgraduate students also supports research projects and attract funding from both the European Union Research Directorate and from the oil industry. The duties also include the recruitment and training of the technical staff of the laboratory

- **Member** of the Engineering Sectorial Council of the National Council for Research and Innovation (NCRI), 2018-2020

## Industrial & Research Appointments

- **Head** for PVT and Fluid Analysis, Research and Development, for Schlumberger in Paris, France, 1984-1990

Main tasks included writing and promoting proposals for the development of novel software and hardware tools to be introduced and marketed in the field. Project management and coordination, recruiting and guidance to the development group, support for the reservoir fluid sampling and analysis related activities of the companies of the Schlumberger group, training of personnel, contact with the clients and the scientific support and promotion of the developed products

- **Head** of the Phase Behaviour Research Group at Heriot-Watt University, Scotland, 1980-1984

Main tasks included setting up a new high pressure research laboratory for the study of the phase behaviour of petroleum fluids, the running of the “Miscible Displacement of North Sea Oil Fields” research project that was funded by the UK Department of Energy and collaborating with the other British establishments that were involved in Enhanced Oil Recovery projects within the same framework

## Administrative Positions

- **Vice Rector for Finance Planning and Development** of the Technical University of Crete, 2005-2010 (elected for two consecutive terms)

Responsible for organizing the finances of the University, negotiating with the Ministry of Education for the available funds each year, running the annual budget, attracting funds for research from the private sector and from the EU, the construction of new buildings and extension of the premises and for planning the future development of the University.

- **Chairman of the Research Committee** of the Technical University of Crete, 2005-2010 (elected for two consecutive terms)

Main duties were to attract funds for research from the private sector and from the EU, the organization of the procedures according to which the research funds were administrated, of setting-up internal auditing protocols of the balance sheets, the recruitment and the training of the Research Committee's personnel, etc

- **Chairman of the Mineral Resources Engineering Department** of the Technical University of Crete, 1999-2003 (elected for two consecutive terms)

Main duties were the organisation, the coordination and the quality assurance of the academic work of the Department, the introduction of accreditation methods and the recruitment of personnel

- **Director** of the Company for the administration of the Technical University of Crete property (2008-2010)

Main tasks were to raise additional income for the University by efficiently exploiting its property while complying with the strict Greek public sector legislation

## Current Professional Activities

- **Acting Consultant** since 1990 on Phase Behaviour and Fluid Analysis topics for Schumberger Research & Development, Oilphase plc and Schlumberger Oilfield Services, North Aegean Petroleum Corporation plc, for NAPC, Energean and for Kavala Oil
- **Co-founder and co-owner** of Smartoil pc (Development of industrial software for Machine Learning Tools, proxy models and regression models for describing reservoir fluids' phase behaviour) which has clients companies such as Petroleum Experts (Petex) and KAPPA

## Papers-Publications

He has authored over than 80 technical papers for international journals, for SPE and for other international scientific conferences

## Research Projects

He had the overall responsibility, he co-ordinated and participated in dozens of Research Projects funded by the European Union and the international Oil Industry among which :

- "MOREOIL, Evaluation of the Miscible Gas Injection In Oil Reservoirs by Monitoring the Asphaltenes Concentration", Funded by: European Union (EU) Research Directorate
- "ANAXIMANDER, Exploration and Evaluation of the Eastern Mediterranean Sea Gas hydrates and the Associated Deep Biosphere". Funded by : EU Research Directorate
- "Hydrate Autoclave Coring Equipment System" Funded by: EU, Sustainable Marine Ecosystems MAST3 (EVK3-2000-00549).
- "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.” Funded by: EU Research Access to the European infrastructure for energy reserve optimization, EIERO

- “Increase of the domestic capacity recycling used mineral oils” Funded by the Greek General Secretary of Research and Technology
- “Physical bioremediation of organic pollutants in the subsoil and in water reservoirs” Funded by the Greek General Secretary of Research and Technology
- “Explicit modeling of phase behavior calculations for use in reservoir and production modeling”, 2013-2017. Petroleum Experts, Edinburgh, UK.
- “Development of a set of ANN models for phase behavior calculations acceleration during reservoir simulation”, 2011. Kappa Exploration & Production Software Training and Consulting, Sophia-Antipolis, France.
- “Development of a fully automated GC-processing software for reservoir fluids”, 2011. Oilphase division of Schlumberger, Aberdeen, UK.
- “Development of a method to estimate the shrinkage factor range for recovered reservoir fluid samples”, 2011. Oilphase division of Schlumberger, Aberdeen, UK.
- “Feasibility study on the development of a fully automated gas chromatography data processing software”, 2008. Schlumberger Oilfield UK plc, Aberdeen, UK.
- “Gas chromatography round robin project results evaluation”, 2008. Schlumberger Oilfield UK plc, Aberdeen, UK.
- “Development of an ANN based algorithm for the prediction of fluid PVT properties at modified line conditions used in conjunction with the Active Sampling Device (ASD)”, 2007. Schlumberger Oilfield UK plc, Aberdeen, UK. The method was successfully industrialized and is still available to the oil industry worldwide
- “Development of neural network-based algorithms for the downhole prediction of reservoir fluids GOR”, 2006-2008. Schlumberger Wireline & Testing, Sugarland, TX, USA. The method was successfully industrialized and is still available to the oil industry worldwide
- “Use of pattern recognition methods for speeding up phase behavior calculations in reservoir simulation”, 2005. Schlumberger SiS, Abingdon, UK.
- “Feasibility study for the development of an EoS emulation tool by using function-learning models to rapidly provide direct PVT values during reservoir simulation”, 2005. Schlumberger Oilfield UK plc, Aberdeen, UK.
- “Development of ANN based PVT correlations covering robustly and with enhanced accuracy the MPFM applications for oils and gas condensates at a very wide line conditions range”, 2004-2006. Schlumberger Oilfield UK plc, Aberdeen, UK. The method was successfully industrialized and is still available to the oil industry worldwide
- “Sensitivity analysis of measurements uncertainty for the Vx flowmeter”, 2003. Oilphase division of Schlumberger, Aberdeen, UK.
- “Development of an ANN model to predict the PVT properties of the MDT/OFA downhole samples”. 2002-2004, Funded by Schlumberger. The method was successfully industrialized and is still available to the oil industry worldwide

- “Development of a hybrid ANNs set of models for PVT Expert”, 2000-2002. Division of SEPS (UK) Ltd, Aberdeen, UK. The method was successfully industrialized and is still available to the oil industry worldwide
- “Retraining of the PVT Expert tool. Development of the quality assurance tools APE-IN and APE-OUT”, 2001. Oilphase, Division of SEPS (UK) Ltd, Aberdeen, UK.
- “Development of the APE-OUT (Accuracy of Prediction Estimator) system and connection to the APE-IN. Retraining of the PVT Expert”, 2000. Oilphase division of Schlumberger, Aberdeen, UK.
- “Development of a confidence estimator for oils for the PVT Expert tool, compatible to the WFAS system”, 1999. Oilphase division of Schlumberger, Aberdeen, UK.
- “Feasibility study for the determination of the mud filtrate contamination of reservoir fluid samples”, 1999. Oilphase division of Schlumberger, Aberdeen, UK.
- “Development of pattern recognition-based tools for the on-site prediction of the properties of a full PVT report with the PVT Express service”, 1996-2000. Schlumberger Wireline & Testing, Clamart, France.
- “Development of an all purpose neural network model for the determination of PVT properties of hydrocarbon fluids” Funded by: Schlumberger
- “Development of a software for the automatic calculation of Black Oil Tables from a PVT Report” Funded by: Schlumberger
- “Experimental measurements and testing of core plugs recovered by the Epsilon-1 well”. Funded by Energean Oil & Gas plc.
- “SARA Analysis of solid deposits and crude oil from the Prinos field well PA-35”. Funded by Energean Oil & Gas plc
- “Feasibility study for the determination of the mud filtrate contamination of reservoir fluid samples” Funded by: Oilphase Schlumberger
- “Experimental study of the fluid properties of the exploratory well Epsilon-1”, Funded by: KAVALA OIL
- Geochemical study of the oil produced in exploratory well PN-2 in North Prinos reservoir”. Funded by: Wintershall AG, Kassel
- “Experimental study of the rock properties of the exploratory well PN-2 in North Prinos reservoir”, Funded by: North Aegean Petroleum Corporation (NAPC)
- “Experimental study of the fluid properties of the exploratory well PN-2 in North Prinos reservoir”, Funded by: North Aegean Petroleum Corporation (NAPC)
- Evaluation of the fluid of the production well PN-2 in North Prinos reservoir”, Funded by: North Aegean Petroleum Corporation (NAPC)
- “Experimental study of asphaltenes composition and development conditions for the oil produced in North Prinos reservoir”, Funded by: North Aegean Petroleum Corporation (NAPC)
- Evaluation of all the PVT reports issued for the Prinos Reservoir”. Funded by North Aegean Petroleum Corporation (NAPC)
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## Patents

- United States Patent No. 7,966,273 B2, Jun. 21, 2011 with the title «Predicting Formation fluid Property through Downhole fluid Analysis using Neural Networks» by Peter Hegeman, Chengli Dong, Charles Woodburn, Graham Birkett, Nikos Varotsis, Vassilis Gaganis
- United States Patent No 4,864,843 title “Method and Apparatus for Chromatographic Analysis in Particular of Petroleum Liquids by Paul Guieze and Nikos Varotsis
- He also holds 2 European Patents

## Distinctions

- He was elected Chairman of the Research and Innovation Committee of the Region of the Ionian Islands, Greece, 2020
- He was nominated by the Ministry of Research member of the Engineering Sectorial Council of the National Council for Research and Innovation (NCRI), 2018
- He received the 2018 Fluid Phase Equilibria Journal Outstanding Contribution Distinction in Reviewing
- He received the 2018 Fluid Phase Equilibria Outstanding Contribution in Reviewing
- He received the 2017 SPE Journal Outstanding Technical Editor Distinction
- Rated in the top 5% of Schlumberger’s personnel with respect to his performance (1989)
- Technical Editor of the SPE Reservoir Evaluation & Engineering Journal and of the SPE Journal published by the Society of Petroleum Engineers as well as the Journal of Canadian Petroleum Technology.
- Reviewer for several international scientific journals such as Fluid Phase Equilibria, Journal of Natural Gas Science & Technology, Fuel, Computers & Geosciences, Journal of Petroleum Science & Engineering, Chemical Engineering Science, etc
- His novel method “Explicit modeling of phase behavior calculations for use in reservoir and production simulations, that he presented for the first time together with Dr. Gaganis, is now considered as a significant breakthrough in reservoir simulation as demonstrated by recent publications by the development teams of some of the major Reservoir Simulation software providers. This method, without sacrificing accuracy, reduces by at least an order of magnitude the very long time required to execute a full scale reservoir simulation run
- He also edits manuscripts for several other international scientific journals such as Fluid Phase Equilibria, Fuel, Computers & Geosciences, Journal of Petroleum Science & Engineering, Chemical Engineering Science, Journal of Natural Gas Science & Engineering, etc

- Selected by the Society of Petroleum Engineers as Moderator for the PetroWiki, the knowledge capture and transfer wiki that has been launched by SPE
- Invited Speaker by several Society of Petroleum Engineers (SPE) Chapters around the world

## Other Professional Activities

- Delivered series of seminars, lectures and technical presentations in Europe (U.K, France, Norway, Italy, Greece), the Middle East (Egypt, Pakistan, Dubai, Abu-Dhabi, Qatar, Yemen, in the South East Asia (Indonesia, Malaysia, Brunei) in Africa (Gabon, Gabinda), etc to petroleum engineers of several oil companies and government officials on Reservoir Fluid Sampling, PVT and Phase Behavior and Fluid Characterization related subjects
- Taught Petroleum Engineering, Phase Behaviour and Fluid Characterisation related topics in the Schools for Professional Development for Schlumberger's Field Engineers in Paris
- Delivered an intensive PVT Training course for Woodside, Australia, November 1999 in Perth, Australia
- Invited Speaker to the 1990 SPE Forum-Advances in the Field of Fluid Flow and Phase Behaviour" to deliver a lecture with subject "EOS Approach in Compositional Simulation", Austria, 1990
- Invited Speaker to the Middle East Section of the Society of Petroleum Engineers, Dubai, November 30, 1988 where he gave a presentation with subject " New Developments in Simulating the Phase Behavior of Reservoir Fluids" Invited Speaker to the West Africa Section of the Society of Petroleum Engineers, Port Gentil, Gabon, October 2, 1989 where he delivered a talk with subject "Methods for determining the Properties of Reservoir Fluids"
- Invited Speaker to the Far East Section of the Society of Petroleum Engineers, Jakarta, Indonesia, February 2, 1990 where he gave a lecture with subject " State of the art in PVT Analysis"
- Invited Speaker to the "Fluid Sampling and Analysis" Conference organized by Phillips 66, Hagensund, Norway, September 29-30, 1989
- Invited Speaker to the "Sampling and PVT Meeting" organized by the U.K Section of the Society of Petroleum Engineers, London, April 24, 1991

## Selected Published Papers in Peer Reviewed Journals/Conferences

- Mawlod A., Memon A., Varotsis N, Gaganis V., Anastasiadou V., Nighswander J., Al Shuaibi M. "Reducing Composition Characterization Uncertainties Through Advanced Machine Learning (ML) Techniques – Data Clustering", SPE-211378-MS, ADIPEC-2022, Abu Dhabi, October 2022
- Aslanidis P., Marinakis D., Puntervold T., Gaganis V., Varotsis N. "Density Changes at Supercritical and Near-Critical Conditions by Increasing Co2 content in Synthetic Hydrocarbon Mixtures-A Comparison Between Experiments and Simulation Predictions, SPE-209663-MS, 83rd EAGE Annual Conference & Exhibition. Madrid, 6-9 June 2022
- Marinakis D, Varotsis N. "Experimental study of the gas hydrates dissociation effect on the properties of the host marine sediment", accepted for oral presentation at the

World Multidisciplinary Earth Sciences Symposium – WMESS, Prague, Czech Republic, September 3-7, 2018

- Gaganis V., Varotsis N. “Rapid and thermodynamically consistent phase behaviour calculations in process simulation” paper admitted for oral presentation at the 29th European Symposium on Applied Thermodynamics, ESAT 2018, Prague, Czech Republic, June 10-13, 2018
- Gaganis V., Varotsis N. “Is using rigorous thermodynamics for fully compositional simulation worth the effort?” presented at the 17th International Multidisciplinary Scientific Geoconference SGEM 2017, Vienna, 26-30 November 2017, Conference Proceedings Vol.17, Issue 15, pp.273-280
- Gaganis V., Kourlianski E., Varotsis N. “An accurate method to generate composite PVT data for black oil simulation”, Journal of Petroleum Science and Engineering, 157 (2017) 1-13
- Gaganis V., Varotsis N., “A simplified thermodynamic approach for reservoir fluid phase behavior mapping with depth” presented at the 29th European Symposium on Applied Thermodynamics, ESAT 2017, Bucharest, Romania, May 18-21, 2017
- Gaganis V., Varotsis N., “Thermodynamic properties of fluids in the upstream petroleum engineering: from rigorous thermodynamics to soft computing” presented at the 29th European Symposium on Applied Thermodynamics, ESAT 2017, Bucharest, Romania, May 18-21, 2017
- Gaganis V., Varotsis N., “Identification of the compositional path followed during Reservoir Simulation improves the accuracy and accelerates the phase behavior calculations”, SPE-180124-MS, presented at the 78th EAGE Conference and Exhibition, Vienna, Austria, 30 May-2 June 2016
- Marinakis D, Varotsis N., “Gas hydrate dissociation affecting the permeability and consolidation behavior of deep sea host sediment”, accepted for publication, Journal of Natural Gas Science & Engineering, 2015
- Gaganis V., Varotsis N., "An integrated approach for rapid phase behavior calculations in compositional modelling", accepted for publication, Journal of Petroleum Science & Engineering, March 23rd, 2014
- 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, 65 (2013) 100-105
- Gaganis V., Varotsis N., “An improved BIP matrix decomposition method for reduced flash calculations”, Fluid Phase Equilibria, 340 (2013) 63-76
- Gaganis V., Marinakis D., Varotsis N., “ A general framework of model functions for fast and robust solution of Rachford-Rice type of equations”, Fluid Phase Equilibria, 322-323 (2012) 9-18
- Gaganis V., Varotsis N., “A new transformation for the rapid solution of the Rachford-Rice equation in phase split calculations”, SPE 150932-PP, Proceedings of the North Africa Technical Conference and Exhibition held in Cairo, Egypt, 20–22 February 2012
- Gaganis V., Varotsis N., “Non-iterative phase stability calculations for process simulation using discriminating functions”, Fluid Phase Equilibria, 314(2012), p.69-77

- Hegeman Peter, Dong Chengli, Varotsis Nikos, Gaganis Vassilis, “Application of Artificial Neural Networks to Downhole Fluid Analysis”, SPE Reservoir Evaluation & Engineering, February 2009, pp 8-13
- 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, Mar.31– Apr.4, 2008.
- 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.
- Marinakis D., Varotsis N., “Hydrates formed from dissolved natural gas in deep marine sediments”, 5th International Workshop on Methane Hydrate Research & Development, October 2006, Edinburgh, UK.
- Gaganis V., Varotsis N., Birkett Gr., ”Sensitivity controlled Neural Networks for the prediction of PVT Properties exhibit Equation of State like behavior”, Proceedings of the 22nd European Symposium on Applied Thermodynamics 28 June-1 July 2006, Elsinore, Denmark
- Marinakis D., Varotsis N., Kostakis G., Christidis G, et. al. "Gas hydrate research overview in Greece", 5th International Workshop on Methane Hydrate Research & Development, October 2006, Edinburgh, UK.
- V. Gaganis, N. Varotsis, J. Nighswander, G. Birkett, “Monitoring PVT Properties Derivatives ensures physically sound tuned EOS behaviour over the entire operating conditions range”, SPE 94211, Proceedings of the 14th Europec Biennial Conference, Madrid, Spain, 13-16 June 2005
- J. Yang, M. Llamedo, D. Marinakis, B. Tohidi, N. Varotsis “Successful Applications of a versatile ultrasonic system for gas hydrates in unconsolidated sediments”, Proceedings of the 5th International Conference on Gas Hydrates, Vol 1: Kinetics and Transport Phenomena, June 13-16, 2005, Trondheim, Norway, ISBN 82-519-2065-5
- A.K Stubos, T. Ayrdal, H.P. Hjermstandt, J.A. Stensen, N. Varotsis, P. Adler, J. Muller, O.P. Bjorlykke, S. Puskas “MOREOIL : Evaluation of Miscible Gas Injection in Oil Reservoirs by Monitoring the Asphaltenes Concentration”, Proceedings of the 13th European Symposium on Improved Oil Recovery, Budapest, Hungary 25-27 April, 2005
- Marinakis, D., Varotsis, N., Yang, J., Tohidi, “The effect on the stability of the deep sea sediment, caused by the dissociation of the contained gas hydrate: The case of “Anaximander” mud volcano seabed.” 32nd International Geological Congress, August 2004, Firenze, Italy. Conf. Proceedings Part 2, 282-18, p. 1250
- J. Yang, D. Marinakis, B. Tohidi, N. Varotsis, “Sediment Geomechanical Response to Hydrate Dissociation by Depressurisation: An Experimental Study”, Geophysical Research Abstracts, Vol.6, 07022,2004, European Geosciences Union
- Perissoratis, Ioakim, Zacharaki, Lykousis, Sakellariou, Kormas, Woodside, Amann, Maggiuli, Daehlmann, De Lange, Casas, Gemma, Meyn, Varotsis, Marinakis, “Exploration and Evaluation of the Eastern Mediterranean Gas hydrates and the Associated Deep Biosphere”, EUROCEAN 2004, Galway, Ireland, May 10-13th, 2004, Conference Abstracts. p. 139-140
- D. Marinakis, N. Varotsis, J. Yang, B. Tohidi, C. Perissoratis, “Gas Hydrates in the Eastern Mediterranean seabed : energy potential and technological challenge”,

Proceedings of the Advances in Mineral Resources Management and Environmental Geotechnology Conference, Chania, June 2004

- S. Smuk, P. Ross, J. Nighswander, N. Varotsis, "Quantification of oil based mud filtrate in contaminated reservoir fluid samples", Proceedings of the 5th International Conference on Petroleum Phase Behaviour & Fouling, Banff, Alberta, Canada, June 13-17, 2004
- N. Varotsis, V. Gaganis, J. Nighswander, "Quality Assurance Tool for PVT Simulator Predictions", SPE Reservoir Evaluation and Engineering Journal, December 2002, pp 499-506
- N. Varotsis, V. Gaganis, J. Nighswander, "Quality assurance tool for PVT simulator predictions" SPE 68235, SPE Middle East Oil Show, Bahrain, 17-20 March 2001
- T. J. Broad, N. Varotsis, N. Pasadakis, "The compositional characterisation of gas condensate fluids-A review featuring the impact of the analysis data quality on the accuracy of equation of state based PVT predictions". SPE Middle East Oil Show, Bahrain, 17-20 March 2001
- N. Pasadakis, C. Yiokari, N. Varotsis, C. Vayenas, "Characterization of hydrotreating catalysts using the principal components analysis", Applied Catalysis A: General 207 (2001), 333-341
- N. Pasadakis, N. Varotsis, N. Kalithrakas, "The influence of pressure on the asphaltenes content and composition in oils", Petroleum Science and Technology, 19 (9&10), 1219-1227 (2001)
- N. Pasadakis, V. Gaganis, N. Varotsis, "Accurate determination of aromatic groups in heavy petroleum fractions using HPLC-UV-DAD", Fuel 80(2001), 147-153
- N. Pasadakis, N. Varotsis, "A novel approach for the quantitation of the hydrocarbon groups in heavy petroleum fractions using HPLC-RI analysis", Energy and Fuels, 14-6(2000), 1184-1187
- N. Pasadakis, N. Varotsis, "Optimization of the HPLC separation of aromatic groups in petroleum fractions" Fuel (79), 2000 1455-1459.
- Varotsis, N., Gaganis, V, Nighswander, J., Guieze, P., " Novel Non-Iterative Method for Predicting the PVT Behavior of Reservoir Fluids", SPE 56745, presented at the 1999 SPE Annual Technical Conference, Oct 3-6, 1999, Houston, USA
- N. Pasadakis, E. Chamilaki, N. Varotsis, "Rapid and accurate determination of the volumetric cuts of Commingled Reservoirs and Pipelines", Oil & Gas Journal, January 3,1999, pp 46-47
- N. Varotsis, N. Pasadakis, V. Gaganis, "A Novel Approach for the Characterization of Aromatics in Petroleum Fractions Using HPLC-UV-DAD and Evolving Factor Analysis", Fuel, 3032, vol 77, pp 1495-1502, (1998)
- N. Varotsis, N. Pasadakis, "Determination of Commingled Crude Oil Streams by HPLC with UV and IR detection", Journal of Liquid Chromatography and Related Technologies, 21(5), 657-667(1998).
- N. Varotsis, N. Pasadakis, "Determination of Chemical Composition of spent lube oils during the process of catalytic hydrogenation" Proceedings of the 1st National Chemical Engineering Congress, Patras, Greece, 29-31 May 1997, pp.503-508
- N. Varotsis, N. Pasadakis, "Quantitative determination of aromatic component groups in lubricant oils using HPLC-SEC and UV-Diode Array Detection", Journal of Industrial and Engineering Chemistry Research, 36, 3915-3919 (1997).
- N. Varotsis, N. Pasadakis, "Quantitative determination of aromatic component groups in lubricant oils using HPLC-SEC and UV-Diode Array Detection", Journal

of Industrial and Engineering Chemistry Research, American Chemical Society, 36, pp.3915-3919 (1997)

- N. Varotsis, N. Pasadakis, "An Analytical Method for Rapid Monitoring of the Degree of Hydrogenation of Recycled Lubricating Motor Oils", 1997, Journal of Industrial and Engineering Chemistry Research, 36, 9, 3915-3919
- N. Varotsis, "Prediction of Gas Phase Volumetric Variations in Diphasic Reservoir Oils", Journal of Canadian Petroleum Technology, Sep. 1997, Vol. 36, 8, pp. 56-60.
- N. Varotsis, N. Pasadakis, "Rapid quantitative determination of aromatic groups in lubricant oils using Gel Permeation Chromatography, Ind. Eng. Chem, Res. 1997, 36, 5516-5519
- N. Varotsis, "Modern Trends in Reservoir Fluid Characterisation" key-note contribution to the International Symposium "Enhanced Oil Recovery in Albania" organized by the Directorate General for Energy of the European Commission, Fier Albania, 1997
- D. Avlonitis, N. Varotsis, "Modelling Gas Hydrate Thermodynamic Behaviour: Theoretical Basis and Computational Methods", Fluid Phase Equilibria, 123 (1996) 107-130
- N. Varotsis, P. Guieze, "Reservoir Fluid Characterisation using Gas Chromatography-Mass Spectrometry", Journal of Petroleum Science and Engineering, 15 (1996) 81-89
- N. Varotsis, N. Pasadakis, "Calibration Prerequisite for accurate PVT Measurements", Oil & Gas Journal, Jan 29, 1996, 93-96
- N. Varotsis, N. Pasadakis, "An Integrated Method for the Gas Chromatographic Analysis of Natural Gases and Liquid Petroleum Mixtures", Chimika Chronika, New Series, 25, 287-300 (1995)
- N. Varotsis, "Phase Behaviour Models to be used for the Simulation of Petroleum Reservoirs. Proceedings of the 1st National Congress on Computational Mechanics, Athens 3-4 September 1992 pp.971-979
- N. Varotsis, P. Guieze, "Onsite Reservoir Fluid Properties Evaluation", Journal of Petroleum Technology (JPT) of the American Society of Petroleum Engineers (SPE), August 1990
- N. Varotsis, "A Robust Calculation Method for Rapid Phase Behaviour Calculations", Reservoir Engineering Journal of the American Society of Petroleum Engineers (SPE), May 1989, p.237-243
- H. Freyss, N. Varotsis, P. Guieze, "PVT Analysis for Petroleum Reservoirs" Oilfield Technical Review, January 1989, p.4-15
- N. Varotsis, "On-Site Fluid Characterisation", presented at the 8th Annual Wireline, Seismic & Testing Interpretation Symposium, Ridgefield, Connecticut, October 2-5, 1988
- N. Varotsis, P. Guieze, "A Robust Phase Behaviour Predictor for Onsite Reservoir Fluid Properties Evaluation" Proceedings of the 7th Annual Wireline, Seismic & Testing Interpretation Symposium, Ridgefield, Connecticut, June 24-26, 1987
- N. Varotsis, P. Guieze, "Microdistillation : A method that combines Gas and Liquid Chromatography for the Characterisation of Petroleum Liquids", Journal of Chromatography, 403, 1987, σελ. 159-170
- N. Varotsis, G. Stewart, A. Todd, M. Clancy, "Phase Behaviour of systems comprising North Sea Oils and Injection gases", SPE Journal of Petroleum Technology (JPT), November 1986, pp. 1221-1233

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- M. Clancy, W. Laidlaw, G. Stewart, A.C. Todd, N. Varotsis, "Hydrocarbon Mixtures at High Pressures-Data and Methods available", Proceedings of " Estimating the Properties of the Offshore Gas Technology Seminar organised by the Institution of Chemical Engineers, London, November 1983 pp. 7-1,7-28
- N. Varotsis, A.C. Todd, G. Stewart, "An Iterative Method for Phase Equilibria Calculations with particular application to Multicomponent Miscible Systems", Proceedings of the 1st European Conference of Enhanced Oil Recovery, Bornemouth, UK, September 1981, pp.313-328
- N. Varotsis, A.C. Todd, "Phase Equilibria Predictions for Multicomponent Hydrocarbon systems for Application in CO<sub>2</sub> Enhanced Oil Recovery Schemes", Proceedings of the 8th Annual Research Meeting of the Institution of Chemical Engineers, Edinburgh, UK, 27-28 April 1981, pp.95-100