



VASSILIOS C. KELESSIDIS – Assistant Professor

Ph.D., Chemical Engineer

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EDUCATION

- 1980 DIPLOMA, Chemical Engineering, School of Eng., Arist. Univ. of Thessaloniki, GPA: 8.0 / 10.0
- 1982 Master of Science, Chemical Engineering (minor Food Technology), Oregon State University, USA, GPA: 3.9 / 4.0
- 1985 Doctor of Philosophy, Chemical Engineering, Univ. of Houston, Texas, USA, GPA: 3.9 / 4.0
Ph.D. Thesis: Two Phase Gas Liquid Vertical Upward Flow in Annuli

PROFESSIONAL POSITIONS

- 1986-1990 Project Leader, Senior Development Engineer, Senior Engineer, ANADRILL SCHLUMBERGER, Houston, TX, USA
- 1990-1993 Section Head, Senior Development Engineer, DOWELL SCHLUMBERGER, Saint Etienne, FRANCE
- 1993-1994 Programme Leader, SCHLUMBERGER CAMBRIDGE RESEARCH, Cambridge, ENGLAND
- 1994- 2000 Head of Technology Transfer, Thessaloniki Technology Park (TTP), GREECE
- 2000 – Today Assistant Professor, Drilling Engineering, Technical Univ. of Crete, Dept. of Mineral Resources Engineering, Chania, GREECE

SCIENTIFIC AND PROFESSIONAL EXPERIENCE

Assistant Professor in Drilling Engineering, teaching drilling engineering, research on flow phenomena in oil well drilling, cuttings transport in horizontal and inclined wells, rheology and fluid loss properties of drilling fluids, development of novel drilling fluids.

Research, development and management for more than eight years in engineering and research centers of world's largest oil service company (drilling, pumping). Development of theoretical models and pilot systems, full scale and pilot system testing, development of new techniques for hydrocarbon identification (patent issued), gas analysis and mud logging, optimization of cement placement and mud removal in oil wells, developing novel drilling techniques.

International Manager for six years in the field of Technology Park management, Technology Transfer and Technology Exploitation, Technology Auditing, Technology Brokerage, Project Management. Specialized in Technology Transfer, networking, promoting innovation, scientific project proposal preparation and submission.

LANGUAGES: English, French, Greek

RESEARCH AREAS:

Oil well drilling, drilling fluids, fluid mechanics and dynamics (Newtonian and non-Newtonian fluids), two & three phase flow, cuttings transport, data collection and analysis, innovation and technology transfer, science & technology parks.

PUBLICATIONS

- V. C. Kelessidis, C. Tsamantaki, P. Dalamarinis, E. Repouskou and E. Tombacz, Influence of electrolyte concentration on rheological properties of Zenith and Wyoming bentonite-water suspensions, Mineral Wealth, Accepted for publication, 2006
- V.C. Kelessidis, G.I. Karydakis, N. Andritsos, A method for selecting casing diameter for wells producing low enthalpy water containing dissolved carbon dioxide, Geothermics, Accepted for publication, 2006
- VC. Kelessidis, C Tsamantaki, A Michalakis, GE. Christidis, P Makri, K Papanicolaou, A Foscolos, Greek lignites as additives for controlling filtration properties of water–bentonite suspensions at high temperatures, Fuel, Article in press, 2006.
- VC. Kelessidis, GE. Christidis, P Makri, V. Hadjistamou, C Tsamantaki, A Michalakis, C. Papanicolaou, A Foscolos , Gelation of water–bentonite suspensions at high temperatures and rheological control with lignite addition, Applied Clay Science, Article in press, 2006
- C. Tsamantaki, V.C. Kelessidis, P. Dalamarinis and G.E. Mpandelis, 2006, Static and Dynamic Yield Stress of Water-Bentonite Suspensions, Paper presented at the 2nd International Conference AMIREG, Chania, Greece
- G.I. Karydakis, V.C. Kelessidis, Geothermal drilling activity in Greece from 1975 to 2005, Paper presented at the 2nd International Conference AMIREG, Chania, Greece,
- G.E. Bandelis and V.C. Kelessidis, Solid bed erosion by liquids flowing in horizontal concentric annulus, Paper presented at the 2nd International Conference AMIREG, Chania, Greece.
- V. C. Kelessidis , R. Maglione, 2006, Modeling rheological behavior of bentonite suspensions as Casson and Robertson-Stiff fluids using Newtonian and true shear rates in Couette viscometry, Powder Technology, 168, 137-147.
- V.C. Kelessidis, R. Maglione, C. Tsamantaki and Y. Aspirtakis, 2006, Optimal determination of rheological parameters for Herschel-Bulkley drilling fluids and impact on pressure drop, velocity profiles and penetration rates during drilling, Journal of Petroleum Science and Engineering, 53, 203-224.
- V. C. Kelessidis, C. Tsamantaki, N. Pasadakis, E. Repouskou, E. Hamilaki, 2006, Permeability, porosity and surface characteristics of filter cakes from water-bentonite suspensions, Paper presented at The 6th International Conference on Advances in Fluid Mechanics, 8-10 May, 2006, Skiathos, Greece
- R. Maglione & V. C. Kelessidis, 2006, Choosing the best rheological model for bentonite suspensions, Paper presented to 3rd Annual European Rheology Conference, April 27-29, 2006, Hersonisos, Crete
- V. C. Kelessidis, K. Founargiotakis, C. Brouzos, 2006, Laminar, turbulent and transitional flows of Herschel-Bulkley fluids in annuli, Paper presented at the

3rd Annual European Rheology Conference, April 27-29, 2006, Hersonisos, Crete

- V. C. Kelessidis, C. Tsamantaki, P. Dalamarinis, 2006, Influence of pH and electrolyte concentration on Herschel-Bulkley rheological parameters for Wyoming bentonite-water suspensions, Paper presented to 3rd Annual European Rheology Conference April 27-29, 2006, Hersonisos, Crete
- V.C. Kelessidis, A. Mihalakis, C. Tsamantaki, 2005, Rheology and Rheological Parameter Determination of Bentonite–Water and Bentonite–Lignite–Water Mixtures at Low and High Temperatures, Paper presented at the 7th World Congress in Chem. Engineering, Glasgow, July 10-14.
- V. C. Kelessidis and G. E. Bandelis, 2005, Flow Pattern Transitions and Flow Pattern Detection of Dilute Solid–Liquid Mixtures in Horizontal Concentric and Eccentric Annulus, Paper presented at the 7th World Congress in Chem. Engineering, Glasgow, July 10-14.
- V. C. Kelessidis, X. Tsamantaki, M. Dimopoulou and A. Michalakis, 2005. Effect of pH on rheological parameters of bentonite-water suspensions, Paper presented at the 5th Panhellenic Symposium of Chemical Engineering, Thessaloniki, Greece, 26-28 May (in greek)
- V. C. Kelessidis, K. Founargiotakis and P. Liolios, 2005. Sensitivity analysis of important parameters during two-phase solid-liquid flow in horizontal annulus for the two layer model, Paper presented at the 5th Panhellenic Symposium of Chemical Engineering, Thessaloniki, Greece, 26-28 May (in greek)
- V. C. Kelessidis, M. Zervakis and Z. Theodosiou, 2005. System for collection and analysis of analog camera signal for studying solid motion during two-phase flow in horizontal annulus, Paper presented at the 5th Panhellenic Symposium of Chemical Engineering, Thessaloniki, Greece, 26-28 May (in greek)
- V. C. Kelessidis & G. Mpandelis, 2004, Measurements And Prediction Of Terminal Velocity Of Solid Spheres Falling Through Stagnant Pseudoplastic Liquids, *Powder Technology*, 147, 117-125.
- V. C. Kelessidis, G. E. Mpandelis, 2004, 'Flow Patterns and Minimum Suspension Velocity for Efficient Cuttings Transport in Horizontal and Deviated Wells in Coiled – Tubing Drilling', *SPE Drilling and Completion*, December, 213-227.
- V. C. Kelessidis, 2004, An Explicit Equation For The Terminal Velocity Of Solid Spheres Falling In Pseudoplastic Liquids, *Chem. Engr. Science*, Vol. 59, 4435 – 4445.
- A. Mavromatidis, V. C. Kelessidis, D. Monopolis, 2004, A review of recent hydrocarbon exploration in Greece and its potential, Paper presented at the 1st International Conference on Advances in Mineral Resources Management and Environmental Geotechnology, 7-9 June, Chania, Greece.

- G. E. Mpandelis, V. C. Kelessidis, 2004, New Approaches For Estimation Of Terminal Settling Velocity Of Solid Spheres Falling In Newtonian And Non-Newtonian Fluids, Paper presented at the 7th National Congress on Mechanics, June 24-26, Chania, Greece.
- V. C. Kelessidis, G. E. Mpandelis, 2004, Hydraulic Parameters Affecting Cuttings Transport For Horizontal Coiled Tubing Drilling, Paper presented at the 7th National Congress on Mechanics, June 24-26, Chania, Greece
- Th.S. Mihalakis, P. G. Makri, V. C. Kelessidis, G. E. Christidis, A. E. Foscolos, C. E. Papanikolaou, 2004, Improving Rheological And Filtration Properties Of Drilling Muds With Addition Of Greek Lignite, Paper presented at the 7th National Congress on Mechanics, June 24-26, Chania, Greece.
- V. C. Kelessidis, 2003, Terminal Velocity Of Solid Spheres Falling In Newtonian And Non Newtonian Liquids, *Tech. Chron. Sci. J. TCG*, Vol. V, No. 1&2, 43-54.
- L. Saputelli, M. Economides, M. Nikolaou, V. C. Kelessidis, 'Real-Time Decision Making for Value Creation while Drilling', 2003, SPE 85314, paper presented at the IADC/SPE Middle East Drilling Technology Conference and Exhibition, held in Abu Dhabi, UAE, 20-22 Oct..
- V. C. Kelessidis, G. E. Mpandelis, 2003, 'Flow Patterns and Minimum Suspension Velocity for Efficient Cuttings Transport in Horizontal and Deviated Wells in Coiled-Tubing Drilling', SPE 81746, SPE/ICoTA Coiled Tubing Conference held in Houston, Texas, U.S.A., 8-9 April 2003.
- V. C. Kelessidis, G. Mpandelis, A. Koutroulis, and T. Michalakis, 'Significant Parameters Affecting Efficient Cuttings Transport In Horizontal And Deviated Wellbores In Coil Tubing Drilling: A Critical Review', 2002, Paper presented at the 1st International Symposium of the Faculty of Mines (ITU) on Earth Sciences and Engineering, Maslak, Istanbul, Turkey, 16-18 May 2002.
- V.C. Kelessidis, D.J. Guillot, R. Rafferty, G. Borriello, A. Merlo, 1996, 'Field Data Demonstrate Improved Mud Removal Techniques Lead to Successful Cement Jobs', SPE 26982, Advanced Technology Series, April 1996, Society of Petroleum Engineers (SPE).
- V.C. Kelessidis, R. Rafferty, A. Merlo, R. Maglione, 1994 'Simulator Models 'U-Tubing' to Improve Primary Cementing', O&G Journal, Mar. 7, pp. 72-80.
- V.C. Kelessidis, D.J. Guillot, R. Rafferty, G. Borriello, A. Merlo, 1994, 'Field Data Demonstrate Improved Mud Removal Techniques Lead to Successful Cement Jobs', SPE 26982, SPE IIIrd Latin American Caribbean Petroleum Engineering Conference, Buenos Aires, Argentina, April 1994.
- J. Hoskins, S. Chakravarthy, B. Ferreol, V.C. Kelessidis, L. Prouvost, D. Zighed, 1993, 'A Predictive Model of Mud Removal Efficiency Using Historical Well Data', SPE 26221, 8th Petroleum Computer Conference, New Orleans, LA, July 1993.

- G. Roberts, V.C. Kelessidis, J. Williams, 1991, 'New System Provides Continuous Quantitative Analysis of Gas Concentration in the Mud During Drilling', *SPE Drilling Engr.*, Vol. 6, No. 3, pp. 219-224.
- V.C. Kelessidis, A.E. Dukler, 1990, 'Motion of Large Gas Bubbles through Liquids in Vertical Concentric and Eccentric Annuli', *Int. J. of Multiphase Flow*, Vol. 16, pp. 375-390.
- V.C. Kelessidis, G. Roberts, J. Williams, 1989, 'New System Provides Continuous Quantitative Analysis of Gas Concentration in the Mud During Drilling', *SPE 19562, SPE Annual Technical Conference, San Antonio TX, Oct. 1989*.
- V.C. Kelessidis, A.E. Dukler, 1989, 'Modeling Flow Pattern Transitions for Upward Gas Liquid Flow in Vertical Concentric and Eccentric Annuli', *Int. J. of Multiphase Flow*, Vol. 15, pp.173-191.
- V.C. Kelessidis, A.E. Dukler, 1986, 'On the Rise Velocity of Taylor Bubbles in Annuli', *AIChE Proceedings*, Miami, FL, Nov. 1986.
- USA Patent 4887464, 19 December, 1989, E. Tannenbaum, T. Burgess, V. Kelessidis, A. Orban, J. Williams, K. Zanker, 'Measurement System and Method for Quantitatively Determining the Concentrations of a Plurality of Gases in Drilling Mud'.

TECHNOLOGY PARK, TECHNOLOGY MANAGEMENT & INNOVATION RELATED:

- V. C. Kelessidis, A. Saitakis, I. Fraggiadakis, Z. Atsalaki, A. Fourfoulaki, G. Papadaki , Supporting entrepreneurship of University Students. The 'Incubator of Ideas' program of Crete Universities and Research Centers, (in greek) Paper presented at the Technical Chamber of Engineers Conference, Athens, 24 Jan. 2006,
- V. C. Kelessidis, A. Saitakis, Y. Fraggiadakis, A. Fourfoulaki and G. Papadaki, 2005, 'University Student Entrepreneurship (UNISTEP): an innovative approach to generate technological projects for commercialization', Paper presented at the XXII IASP World Conference on Science & Technology Parks, Beijing, September 2005.
- I. J. Vasalos, V. C. Kelessidis and N. Komninos , 2004, 'Innovation Pole of Thessaloniki – A project served as model for technological development of greek regions',
- I. J. Vasalos, V. C. Kelessidis, N. Komninos, 2003, 'Innovation Pole of Thessaloniki – Cooperation for Technological Development', Paper presented at the Conference of the Association of Macedonian Studies : Thessaloniki, Past, Present and Future', Thessaloniki, Febr. 28 – March 3 2003 (in greek).
- V. C. Kelessidis, I. J. Vasalos, N. Komninos, 1999, 'Planning for Science and Technology Parks in Southern Europe: Experiences from Spain, Italy and Greece, XVI IASP World Conference on Science & Technology Parks, Istanbul, September 1999.
- V. C. Kelessidis, 1998, 'The Role of Technology Parks in Regional Development: The Case of Northern Greece', XV IASP World Conference on Science & Technology Parks, Perth, Western Australia, October 1998.