

CURRICULUM VITAE

Dr. Christos Tsakiroglou

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PERSONAL

Name : Christos Tsakiroglou
Position : Research Director
Office address : Foundation for Research and Technology Hellas-Institute of
Chemical Engineering Sciences (FORTH/ICE-HT)
Stadiou street, Platani, P.O.Box 1414, GR-26504 Patras, Greece
(Tel. 30 261 965212, Fax: 30 261 965223)
Home address : 81 Athinon, GR-26441 Patras, Greece (Tel. 30 261 430511)
Marital status : Married, two children
Citizenship : Greek
e-mail : ctsakir@iceht.forth.gr

ACADEMIC STUDIES

9/79 - 5/85 : Undergraduate Student, Department of Chemical Engineering,
Aristotle University of Thessaloniki, Greece
1/84 - 5/85 : Ing.Dipl.Thesis
Department of Chemical Engineering, Aristotle University of
Thessaloniki
Title: *"Theoretical Study of the Control of Chemical Reactors for
Various Systems of Exothermic Reactions"*
5/85 : Dipl.Ing. Chemical Engineering
9/85 - 9/90 : Graduate Student, Department of Chemical Engineering,
University of Patras, Greece
9/85 - 9/90 : Ph.D.Thesis
Department of Chemical Engineering, University of Patras
Title: *"Improved Method of Analysis of the Pore Structure of
Permeable Solids: Application to Greek Oil-Bearing
Rocks"* (advisor: Prof. A.C. Payatakes)
11/90 : Ph.D. Chemical Engineering

POSITIONS

9/85 - 9/90 : Research Assistant
Institute of Chemical Engineering & High Temperature Chemical
Processes (FORTH/ICE-HT)
1/91 - 1/92 : Fulfillment of Military Services (mandatory) in Greek Army
6/92 - 9/92 : Researcher/Engineer, Enterprise for the Support of the Research
Technology and Education
5/94 - 5/95 : Post-Doctoral Research Fellow
Institut Francais du Petrole (IFP), France
9/95 - 9/98 : Research Associate, FORTH/ICE-HT
9/98 - 9/04 : Associate Researcher (Rank C), FORTH/ICE-HT
9/04 - 9/13 : Principal Researcher (Rank B), FORTH/ICE-HT
10/13- : Research Director (Rank A), FORTH/ICE-HT

FOREIGN LANGUAGES

English: Very good knowledge

French: Good knowledge

PROFFESIONAL AFFILIATIONS

2012 Hellenic Institute of Hydrocarbons (HELLINHY)
2009-today International Society for Porous Media (InterPore)
2003-today Society of Core Analysts (SCA)
1999-today Society of Petroleum Engineers (SPE)
1986-today Technical Chamber of Greece.

REVIEWER FOR SCIENTIFIC JOURNALS

Physical Review Letters, Physical Review E, Physics of Fluids, Environmental Science and Technology, Industrial and Engineering Chemistry Research, Transport in Porous Media, Advances in Water Resources, FUEL, International Journal of Multiphase Flow, Chemical Engineering Science, Water Resources Research, AIChE J., J. Hydrology, J. Contaminant Hydrology, Geoderma, J. Environmental Management, Soil and Sediment Contamination: An International Journal, J. Microporous Mesoporous Materials, Materials Research Bulletin, Chemosphere, J. Hazardous Materials, J. Hydroinformatics, Rheologica Acta, Asia-Pacific Journal of Chemical Engineering, Critical Reviews in Environmental Science and Technology, Canadian Journal of Chemical Engineering

EVALUATOR FOR RESEARCH PROPOSALS

European Commission (7th FP), Israel, Czech Republic, Romania, Qatar Foundation, IKY Scholarships/Greece

PUBLICATION RECORD

Scientific articles in peer-reviewed journals (ISI): **75** (*h index=22; CI~1100; corresponding author in 53/75*)

Invited chapters in international books: **5**

Papers in peer-reviewed international conference proceedings: **58**

Papers in non-refereed international conference proceedings: **18**

Papers in national conference proceedings: **28**

Presentations in conferences: **110**

TEACHING & TRAINING ACTIVITIES

1985-1990 **Teaching Assistant**, Department of Chemical Engineering, University of Patras, Assistant Instructor of courses: (1) *Fluid Mechanics*; (2) *Unit Operations I (pumps/distillation/absorption)*; (3) *Unit Operations II (heat exchangers)*

2005-2009 **Adjunct Professor**, Department of Mechanical Engineering, Higher Technological Educational Institute of Patras, Instructor of Courses: (1) *Fluid Mechanics I (8 semesters)*; (2) *Fluid Mechanics II (4 semesters)*.

2014-2017 **Adjunct Professor**, Hellenic Open University, School of Science and Technology, Postgraduate program: “Waste Management”, Thematic Unit (Module): “Natural Environment and Pollution”.

Advisement of Ph.D. students

- 1 Sygouni Varvara (4/2002-1/2007, Department of Chemical Engineering, University of Patras). Thesis title: “A new method for the measurement of the fractional wettability of porous media from two-phase displacement experiments”.
- 2 Aggelopoulos Christos (9/2004-7/2007, Department of Physics, University of Patras). Thesis title: “Development of laboratory methods to determine the effective transport coefficients of soils from dynamic experiments”
- 3 Tzovolou Dimitra (11/2006-7/2011, Department of Chemistry, University of Patras). Thesis title: “Comparative analysis of methods used for the remediation of the unsaturated zone of a soil polluted by kerosene”
- 4 Terzi Katerina (2/2014-), Department of Chemical Engineering, University of Patras). Title of Thesis: “Experimental study of the nanofluid-based remediation of porous media polluted by chlorinated hydrocarbons”

Advisement of M.S. students

1. Aggelopoulos Christos (9/2002-7/2004, Department of Physics, University of Patras). Title of Thesis: “Measurement of the resistivity and reactivity index of porous materials”
2. Magga Zoi (1/2007-7/2008, Department of Chemistry, University of Patras). Title of Thesis: “Assessment of the fate of pesticides in groundwater from flow experiments in soil columns ”
3. Katerina Terzi, (9/2011-1/2014), Department of Chemical Engineering, University of Patras). Title of Thesis: “Study of the effects of CO₂ leakages from storage sites on groundwater quality and soil properties”
4. Alexandra Sikinioti-Lock (9/2014-9/2015), Department of Chemical Engineering, University of Patras). Title of Thesis: “Numerical modeling of the NAPL source zone remediation by zero-valent iron nanoparticles”

Supervision of undergraduate students employed in FORTH/ICE-HT

1. Sygouni V. (7/2000-3/2002, Dpt. Chem. Eng, Univ. of Patras)
2. Spyropoulos F. (7/2000-9/2001, Dpt. Chem Eng., Univ. of Patras)
3. Petsi A. (4/2000-9/2001, Dpt. Chem. Eng., Univ. of Patras)
4. Aggelopoulos C. (7/2001-6/2002, Dpt. Physics, Univ. of Patras)
5. Kabouri M. (7/2001-1/2002, Dpt. Pharmacy, Univ. of Patras)
6. Bjorni Hasa (7/2011-9/2011, practical exercise, Dpt Physics, U. Patras)
7. Bazin Morgane (29/6/2011-29/9/2011, practical exercise, ENSIACET, Toulouse, France)
8. Niarchos Dimitris (1/5/2015-31/5/2015, practical exercise, Dpt Environmental Engineering, Technical University of Crete)
9. Karahaliou Vassiliki (1/4/2015-30/6/2015), practical exercise, Dpt. Physics, U. Patras)

Supervision of scientific personnel employed in FORTH/ICE-HT

1. Karoutsos V. (6/2000-4/2003, Ph.D., Physics)
2. Karahaliou C. (4/1999-9/2001, B.S., Chemistry)

3. Papanicolaou D. (7/2001-7/2002, Dipl. Ing., Chem. Eng.)
4. Tzovolou D. (8/2001-1/2002, 6/2005-1/2007, M.Sc., Chemistry)
5. Loi Ch. (12/2006-10/2007, B.S., Biology)
6. Magga Z. (9/2005-1/2007, B.Sc., Chemistry)
7. Hajdu K. (7/2014-7/2015, Ph.D. Biophysics)

Supervision of > 20 Dipl. Theses of undergraduate students of Univ. Patras

Participation in the examination committee of Ph.D. students

1. Eleni Arvaniti, Dpt. Chemical Engineering, U. Patras (2009).
2. Vasilis Michalis, Dpt. Chemical Engineering, U. Patras (2011).

AREAS OF SCIENTIFIC AND TECHNOLOGICAL INTEREST

- Multiphase flow and transport phenomena in porous media
- Enhanced oil recovery (EOR) methods
- Characterization of the pore structure of materials
- Measurement and numerical calculation of the single- and multi-phase effective transport coefficients of porous materials
- Measurement of the rheological properties of fluids
- Physicochemical methods of wastewater treatment
- Risk assessment and remediation of contaminated soils and aquifers
- CO₂ storage in underground reservoirs

EXPERIMENTAL TECHNIQUES

- Mercury porosimetry
- Core analysis & special core analysis for rocks and soils
- Rheometry of liquids
- Nitrogen adsorption desorption (BET)
- Porous sample preparation for BSEM studies and image analysis
- Measurement of capillary, and electrical properties of porous media
- Visualization of multiphase transport and reactive processes in model porous media
- Experimental study of multiphase transport and reactive processes in porous media

THEORETICAL METHODS

- Mathematical modeling and numerical simulation of transport and reactive processes in porous media
- Theoretical methods of statistical physics of disordered media (Monte Carlo processes, Percolation theory, effective medium approximation, fractal geometry)
- Determination of the microstructural parameters of porous materials by the combination of experimental methods with theoretical simulation
- Calculation of effective transport coefficients of porous media
- Numerical methods and computational algorithms for the estimation of the parameters of non-linear models

RESEARCH ACTIVITIES

1. Characterization of the pore structure of materials.

Estimation of the geometrical and topological properties of meso- (e.g. catalyst carriers) and macro- (e.g. soils, rocks) porous materials by combining percolation models with datasets of various experimental techniques (e.g. Hg porosimetry, N₂ sorption, SEM image analysis). Application to single-porosity and double-porosity (heterogeneous) materials. Use of the critical path analysis of percolation theory for the calculation of the transport (hydraulic & electrical conductivity) properties of heterogeneous porous materials from pore structure parameters. Modeling of the fracture aperture and calculation of the effective transport coefficients of single fractures

Relevant publications

- Tsakiroglou, C.D., “Determination of the transport properties of single fractures with the aid of critical path analysis”, *Industrial & Engineering Chemistry Research*, **41**, 3462-3472 (2002).
- Tsakiroglou, C.D., V.N. Burganos, and J. Jacobsen, “Pore structure analysis by using nitrogen sorption and mercury intrusion data”, *AIChE J.*, **50**, 489-510 (2004).
- Tsakiroglou, C.D. and M.A. Ioannidis, “Dual porosity modeling of the pore structure and transport properties of a contaminated soil”, *Eur. J. Soil Sci.*, **59**, 744-761 (2008).
- Tsakiroglou, C.D., M.A. Ioannidis, E. Amirtharaj, O.Vizika, “A new approach for the characterization of the pore structure of dual porosity rocks”, *Chem. Eng. Sci.*, **64**, 847-859 (2009).
- Amirtharaj, E.S., M.A. Ioannidis, B. Parker and C.D. Tsakiroglou, “Statistical Synthesis of Imaging and Porosimetry Data for the Characterization of Microstructure and Transport Properties of Sandstones”, *Transp. Porous Media*, **86**, 135-154 (2011).
- Tsakiroglou, C.D., K.E.S. Klint, M.A. Theodoropoulou, B. Nilsson, and C.A. Aggelopoulos, “From aperture measurements to hydraulic properties of fractures”, *Geoderma*, **181-182**, 65-77 (2012).

2. Two-phase flow in porous media.

(a) **Fundamental studies.** Visualization studies of two-phase flow in glass-etched pore networks. Development of non-Darcy flow models, and correlation of the two-phase flow pattern & effective coefficients (e.g. relative permeability & capillary pressure curves) with capillary number, shear thinning fluid rheology, and pore network properties. Comparative analysis of two-phase flow coefficients measured with steady-state and unsteady-state methods.

Relevant publications

- Tsakiroglou, C.D., M. Theodoropoulou, and V. Karoutsos, “Non-equilibrium capillary pressure and relative permeability curves of porous media”, *AIChE J.*, **49**, 2472-2486 (2003).

- Tsakiroglou, C.D., M. Theodoropoulou, V. Karoutsos, D. Papanicolaou, V. Sygouni “Experimental study of the immiscible displacement of shear-thinning fluids in pore networks”, *J. Colloid Interface Science*, **267**, 217-232 (2003).
- Tsakiroglou, C.D., “Correlation of the two-phase flow coefficients of porous media with the rheology of shear-thinning fluids”, *J. Non-Newtonian Fluid Mech.*, **117**, 1-23 (2004).
- Tsakiroglou, C.D. M.A. Theodoropoulou, V. Karoutsos, and D. Papanicolaou, “Determination of the effective transport coefficients of pore networks from transient immiscible and miscible displacement experiments”, *Water Resources Research*, **41**(2), W02014 (2005).
- Theodoropoulou, M.A., V. Sygouni, V. Karoutsos, and C.D. Tsakiroglou, “Relative permeability and capillary pressure functions of porous media as related to the displacement growth pattern”, *Int. J. Multiphase Flow*, **31**, 1155-1180 (2005).
- Tsakiroglou, C.D., D.G. Avraam, A.C. Payatakes, “Transient and steady-state relative permeabilities from two-phase flow experiments in planar pore networks”, *Adv. Water Res.*, **30**, 1981-1992 (2007).

(b) Soil column tests. Transient immiscible displacement experiments in disturbed / undisturbed soils. Estimation of the relative permeability functions / capillary pressure curve of soils with inverse modelling. Development of multi-scale & network-type numerical models to simulate the immiscible displacement of oil/water and calculate the up-scaled two-phase flow coefficients for highly heterogeneous soils.

Relevant publications

- Aggelopoulos, C.A., and C.D. Tsakiroglou, “The effect of micro-heterogeneity and capillary number on capillary pressure and relative permeability curves of soils”, *Geoderma*, **148**, 25-34 (2008).
- Aggelopoulos, C.A., and C.D. Tsakiroglou, “A multi-flowpath model for the interpretation of immiscible displacement experiments in heterogeneous soil columns”, *J. Contam. Hydrol.*, **105**, 146-160 (2009).
- Tsakiroglou C.D., V. Sygouni, C.A. Aggelopoulos, “A dynamic network-type simulator to investigate the multiphase flow properties of heterogeneous soils”, *Vadoze Zone J.*, **14**, 285-294 (2010).
- Tsakiroglou, C.D. “A method to calculate the multiphase flow properties of heterogeneous porous media by using network simulations”, *AIChE J.*, **57**, 2618-2628 (2011).
- Tsakiroglou, C.D., “A multi-scale approach to model two-phase flow in heterogeneous porous media” *Transp. Porous Media* **94**, 525-536 (2012).

(c) Signal analysis with wavelets. Development of a method for the characterization of wettability / permeability heterogeneities in porous materials with multi-level wavelet analysis of pressure drop signals measured during immiscible displacement tests.

Relevant publications

- Sygouni, V., C.D. Tsakiroglou, and A.C. Payatakes, “Capillary pressure spectrometry: toward a new method for the measurement of the fractional wettability of porous media”, *Phys. Fluids*, **18**, 053302 (2006).
- Sygouni, V., C.D. Tsakiroglou, and A.C. Payatakes, “Using wavelets to characterize the wettability of porous materials”, *Phys. Rev. E*, **76**, 056304 (2007).
- Tsakiroglou, C.D., V. Sygouni, and C.A. Aggelopoulos, “Using multi-level wavelets to correlate the two-phase flow characteristics of porous media with heterogeneity”, *Chem. Eng. Sci.*, **65**, 6452-6460 (2010).

3. Hydrodynamic dispersion in porous media.

(a) *Fundamental studies.* Development of a visualization technique for the study of miscible displacement in porous media and correlation of solute dispersion pattern & longitudinal / transverse dispersion coefficients with pore space morphology and flow conditions

Relevant publications

- Theodoropoulou, M., V. Karoutsos, C. Kaspiris, and C.D. Tsakiroglou, “A new visualization technique for the study of solute dispersion in porous media models” *J. Hydrology*, **274**, 176-197 (2003).
- Tsakiroglou, C.D. M.A. Theodoropoulou, V. Karoutsos, and D. Papanicolaou, “Determination of the effective transport coefficients of pore networks from transient immiscible and miscible displacement experiments”, *Water Resources Research*, **41**(2), W02014 (2005).
- Gaganis, P., E.D. Skouras, M.A. Theodoropoulou, C.D. Tsakiroglou and V.N. Burganos, “On the evaluation of the dispersion coefficients from visualization experiments in artificial porous media”, *J. Hydrology*, **307**, 79-91 (2005).
- Tsakiroglou, C.D., M. Theodoropoulou, and V. Karoutsos, “Boyanicy-driven chaotic regimes during solute dispersion in pore networks”, *Special Issue of Oil & Gas Science and Technology – La Revue de l’IFP*, **60**(1), 141-159 (2005).

(b) *Soil column tests.* Development of experimental setups and macroscopic numerical models for the study of miscible displacement in disturbed and undisturbed soils and correlation of the hydrodynamic coefficients with multi-scale soil heterogeneities and flow conditions.

Relevant publications

- Aggelopoulos, C.A., and C.D. Tsakiroglou, “The longitudinal dispersion coefficient of soils as related to the variability of local permeability”, *Water, Air and Soil Pollution*, **185**, 223-237 (2007).
- Aggelopoulos, C.A., and C.D. Tsakiroglou, “Quantifying Soil Heterogeneity from Solute Dispersion Experiments”, *Geoderma*, **146**, 412-424 (2008).

4. Soil and groundwater contamination and remediation.

(a) *Risk assessment of contaminated soil and groundwater.* Soil column experiments and macroscopic simulation of the fate of organic pollutants in the subsurface (e.g. advection/ dispersion/ sorption/ biodegradation of pollutants in groundwater). Chemical characterization of contaminated soils and groundwater with chromatographic techniques (GC-MS, GC-FID, Ion-chromatography).

Relevant publications

- Magga, Z., D.N. Tzovolou, M.A. Theodoropoulou, Th. Dalkarani, K. Pikios, C.D. Tsakiroglou, “Soil column experiments used as a means to assess the transport, sorption, and biodegradation of pesticides in groundwater”, *J. Environ. Sci and Health: B*, **43**, 732-741 (2008).
- Tzovolou, D.N., Y. Benoit, F. Haeseler, K.E. Klint, and C.D. Tsakiroglou, “Spatial distribution of jet fuel in the vadoze zone of a heterogeneous and fractured soil”, *Science of the Total Environment*, **407**, 3044-3054 (2009).
- Magga Z., D.N. Tzovolou, M.A. Theodoropoulou, C.D. Tsakiroglou, “Combining experimental techniques with non-linear numerical models to assess the sorption of pesticides on soils”, *J. Contam. Hydrology* **129-130**, 62-69 (2012).

(b) Soil remediation technologies. Design, lab-scale / pilot-scale testing, and numerical modelling of soil and groundwater remediation technologies. Development and testing of innovative oxidation technologies (e.g. non-thermal plasma discharge) for the remediation of soils contaminated by persistent and recalcitrant pollutants.

Relevant publications

- Tzovolou D.N., C.A. Aggelopoulos, M.A. Theodoropoulou, and C. D. Tsakiroglou, “Remediation of the unsaturated zone of NAPL-polluted low permeability soils with steam injection: An experimental study”, *J. Soils & Sediments*, **11**, 72-81 (2011).
- Nilsson B., D. Tzovolou, M. Jeczalik, T. Kasela, W. Slack, K.E. Klint, F. Haeseler, C.D. Tsakiroglou, “Combining steam injection with hydraulic fracturing for the in situ remediation of the unsaturated zone of a fractured soil polluted by jet fuel”, *J. Environ. Manag.* **92**, 695-707 (2011).
- Tzovolou, D.N., Theodoropoulou, M.A., Blanchet, D., Haeseler, F., Jeczalik, M., Kasela, T., W. Slack, and C.D. Tsakiroglou, “In situ bioventing of the vadoze zone of multi-scale heterogeneous soils”, *Environ. Earth Sci.* **74**, 4907-4925 (2015).
- Aggelopoulos, C.A., C.D. Tsakiroglou, S. Ognier, S. Cavadias “NAPL-contaminated soil remediation by ex-situ DBD plasma”, *International Journal of Environmental Science and Technology* **12 (3)**, 1011-1020 (2015).
- Aggelopoulos, C.A., Gkelios, A., Klapa, M.I., Kaltsonoudis, C., Svarnas, P., Tsakiroglou, C.D. “Parametric analysis of the operation of a non-thermal plasma reactor for the remediation of NAPL-polluted soils”, *Chem. Eng. J.* **301**, 353-361 (2016).

5. Carbon dioxide storage in saline aquifers.

Experimental investigation and numerical modeling of CO₂ dissolution in aquifers, and correlation of the dissolution rate with the heterogeneity of porous media. Effects of CO₂ leakages from deep storage sites on shallow freshwater aquifers: experimental study and numerical modeling of the dynamic physico-chemical interactions of soil/groundwater/CO₂ (e.g. CO₂ dissolution, heavy metal immobilization, etc) during the simultaneous two-phase flow of water/CO₂ through a soil column.

Relevant publications

- Aggelopoulos, C.A., and C.D. Tsakiroglou, “Effects of Micro-Heterogeneity and Hydrodynamic Dispersion on the Dissolution Rate of Carbon Dioxide in Water-Saturated Porous Media”, *International Journal of Greenhouse Gas Control* **10**, 341-350 (2012).
- Terzi, K., I. Bountas, C.A. Aggelopoulos and C.D. Tsakiroglou, “Effects of Carbon Dioxide on the Mobilization of Metals from Aquifers”, *Environmental Science and Technology*, **148(8)**, 4386-4394 (2014).

6. Nanomaterial-based environmental technologies

Investigation of the capacity of functionalized nanoparticles (CNTs, nZVI) to remove various types of pollutants (e.g. pesticides, hydrocarbons, heavy metals) from surface water, groundwater, and soil.

Relevant publications

- Berki P., B. Reti, K. Terzi, I. Bountas, E. Horvath, D. Fejes, A. Magrez, C. Tsakiroglou, L. Forró, and K. Hernadi, The effect of titania precursor on the morphology of prepared TiO₂/MWCNT nanocomposite materials. *Phys. Status Solidi B* **251(12)**, 2384-2388 (2014).
- Tsakiroglou, C., Terzi, K., Sikinioti-Lock, A., Hajdu, K., Aggelopoulos, C., “Assessing the capacity of zero valent iron nanofluids to remediate NAPL-polluted porous media”, *Science of the Total Environment* **563–564**, 866–878 (2016).
- Terzi, A. Sikinioti-Lock, A. Gkelios, D. Tzavara, A. Skouras, C. Aggelopoulos, P. Klepetsanis, S. Antimisiaris, C. D. Tsakiroglou, Mobility of zero valent iron nanoparticles and liposomes in porous media. *Coll. & Surf. A: Physicochem. & Eng. Aspects* **506**, 711-722 (2016).

7. Biomass valorization

Valorization of biomass for the development of low cost hybrid adsorbents capable to remove “cocktails” of multi-species pollutants (e.g. heavy metals, pesticides, PAHs, etc) from wastewater.

Relevant publications

- Aggelopoulos, **C.A.**, E. Moschopoulou, P. Klepetsanis, C.D. Tsakiroglou “Valorization of fruit wastes (pistachio shells) as adsorbent for the removal of Zn from aqueous solutions under adverse acidic conditions”. *Desalination and Water Treatment*, accepted (2017).

PARTICIPATION IN RESEARCH PROJECTS

1987 - 1990

Participation in EC-funded cooperation research project (1987-1991) between FORTH/ICE-HT and Public Petroleum Corporation of Greece (DEP) with title: «Improved method of measurement and characterization of the porous

microstructure of oil reservoir rocks; Application to cores samples from Greek reservoirs»

1988 - 1990

Participation in cooperation research project between FORTH/ICE-HT (Greece), IFP (France), HALDOR TOPSOE A/S (Denmark), DGU (Denmark) and Technical University of Denmark with title: *"Development of a general computer-aided technique for the characterization of the microscope structure of industrial porous media and development of general network simulators for the prediction of multiphase flow and transport phenomena in such structures"* under the programme **CEC-BRITE, 1988-1992.**

5/94 - 5/95

Participation in research project with title: *"Determination and modeling of the electrical properties of porous media of intermediate wettability"* at **Institut Francais du Petrole (IFP), 1994-1995.**

9/95 – 1/98

Participation in cooperation research project between FORTH/ICE-HT, TITAN (Cement Industry, Camari-Viotia), EKEFE "DEMOCRITOS" (Nuclear Center, Athens), Institute of Electronic Structure and Laser-Foundation for Research and Technology (Research Institute, Crete), Technology of Environmental Protection (Private Company, Marathon-Attiki) και ECON Optics Mechanics (Private Company) with title: *"Clear combustion of organic wastes in rotary kilns of cement industry and development of a new technology for the measurement of environmental parameters"* under the **Operational Programme for Research and Technology of the Greek Ministry of Industry Energy and Technology (EPET II), 1995-1998.**

1/96 – 1/98

Participation in cooperation research project (1996-1999) between FORTH/ICE-HT, University of Limoges (FR), Technical University of Clausthal (DE), Fraunhofer Institute for Biomedical Engineering (DE), University of Wales Swansea (GB), OLDHAM FRANCE S.A. (FR), CITY TECHNOLOGY LTD (GB) with title: *"Surface modification and optimization of gas nanoelectroceramics-based sensor systems"*, under the programme **EU-BRITE/EURAM, 1995-1999.**

11/97-11/00

Participation in cooperation research project (1997-2000) between FORTH/ICE-HT (Coordinator), University of Stuttgart (Germany), IMBB-FORTH (Crete-Greece), Delft University of Technology (Netherlands) και Geological Survey of Denmark and Greenland (Denmark) with title: *"Pore -to-core scale-up studies of the transport properties of organic pollutants with natural attenuation"* under the programme **ENVIRONMENT AND CLIMATE, 1997-2000.**

4/1999-1/2000

Scientific responsible of a "Guest Experiment" titled *"Fabrication of microcells and pore networks for the investigation of multiphase transport processes in*

porous media” and performed at the Institute of Microtechnology Mainz (IMM) – Germany, under the TMR-LSF Project of IMM: “*Microfabrication for Users*” (1998-2000).

1/12/99-31/11/01

Scientific responsible of industrially-funded research project between FORTH/ICE-HT and HALDOR TOPSOE A/S (Manufacturer of Catalysts – Denmark) with title : “*A novel method of characterization of the pore structure of catalyst carriers*”.

1/2/00-31/1/03

Coordinator and scientific responsible of cooperation research project (2000-2003) between FORTH/ICE-HT (Coordinator), Institut Francais du Petrole (France), Geological Survey of Denmark and Greenland (Denmark) and CH2M-Hill (Spain) with title: “*Toward an Improved Risk Assessment of the Contaminant Spreading in Fractured Underground Reservoirs – TRACE-FRACTURE*” under the programme **ENERGY, ENVIRONMENT AND SUSTAINABLE DEVELOPMENT (1998-2002)**.

27/3/03-26/3/04

Scientific responsible of bilateral cooperation project between FORTH/ICE-HT and Institut Francais du Petrole with title : “*Characterization of the pore structure and determination of the transport coefficients of reservoir rocks*” under the Programme **PLATON – Bilateral cooperation Greece France (2002-2004)**.

1/6/04-30/11/07

Scientific responsible of Specific Targeted Research Project / STREP (2004-2007) between FORTH/ICE-HT, IFP (France), Geological Survey of Denmark and Greenland (Denmark), Broeker A/S (Denmark) and Hydrogeoteknika (Poland) with title: “*In situ STimulation and REmediation of contaminated fractured SOILs – STRESOIL*” under the programme **GLOBAL CHANGE AND ECOSYSTEMS (2003-20007)**

1/9/04-31/8/08

Participation in Network of Excellence (NoE) with partners: CNRS (Coordinator, FR), FORTH/ICE-HT, ASIES (FR), Imperial College (UK), IBET (P), GKSS (D), Vito (BE), SINTEF (NO), Utwente (NL), UNIZAR (SP), LUT (FI), ITM-CNR (IT), ICTP (CZ), and title: “*Expanding membrane macroscale application by exploring nanoscale material properties – NanoMemPro*”.

1/1/2005-31/12/2007

Principal investigator in research project co-funded by the European Union – European Social Fund & National Resources – EPEAEK II, titled: “Development of Methodologies for the detection of pesticides in soils and groundwater – AFYDATOSI”, Key Action: “Strengthening research groups of TEI in subjects of environment and ecology, Programme: EPEAEK II – ARCHIMEDES

3/2012-8/2015

Participation in research project (member of the Main Reserach Group of U. Patras) co-funded by the European Social Fund and National Resources-ESPA titled: “Geomechanics and Environment of CO2 Geological Stotrage”. Programme: THALES. Coordinator: Prof. Papamichos, Dpt. of Civil Engineering, Aristotle Univ. of Thessaloniki (U. Patras budget: 133 000 €)

3/2012-2/2015

Participation in research project (member of the Main Research Group of TEI of Athens) co-funded by the European Social Fund and National Resources-ESPA titled: “Two-Phase flow in Porous Media: Improvement of the Mechanistic Model DeProF and Implementation in Practical Application”, Programme: ARCHIMEDES III. Coordinator & Scientific Responsible: Assist. Prof. M. Valavanides, Department of Civil Works Technology, TEI of Athens.

6/2012-5/2015

Scientific Responsible of Post-Doctoral Fellowship (Dr. Ch. Aggelopoulos) funded by the European Social Fund (ESPA) titled: “Soil remediation with plasma-discharge technologies” (Budget: 150 000 €)

9/2012-8/2014

Scientific Responsible of Greek-Hungary bilateral research project between FORTH/ICE-HT and University of Szeged with title: «Development and characterization of carbon nanotube (CNT)-based materials and potential applications to the treatment of polluted water» (Budget: 15 000 €)

2/2014-8/2015

Scientific Responsible of research project co-funded by the European Social Fund and National Resources-ESPA titled: “Optimizing the properties of nanofluids for the efficient in situ soil remediation-SOILREM”. Programme: ARISTEIA II (EXCELLENCE II). (Budget: 246 000 €)

PATENTS

Aggelopoulos C.A., P. Svarnas, C.D. Tsakiroglou, “*Dielectric barrier discharge cold plasma reactor for soil remediation*”, Patent Application No 20140100427 (2015).

SUPPLY OF SERVICES

Supply of services to internal (ICE-HT) users and external academic and industrial organizations (e.g. EKET, Kentro Lithou / Ministry of Culture, Dpt Geology / U. Patras, Inasco, SIKA HELLAS, P2i, etc) on the measurement of pore structure properties (Hg porosimetry), rheological properties (stress rheometry), liquid and gas permeation properties (permeameter). Responsible scientist for the operation, maintenance, and data analysis of Hg Porosimeter, Benchtop Permeameter, and Stress Rheometer (Total income: ~ 50 000 €).

HONORS / AWARDS

- FORTH/ICE-HT Fellowship for Ph.D. studies (1985–1990)
- IFP Post-Doc Fellowship (1994-1995)
- Best Poster Paper Award, Paper SCA2005-58, *International Symposium of the Society of Core Analysts (SCA)*, August 21-25, 2005, Toronto, Canada.
- Best Oral Paper Award, 6th Panhellenic Symposium of Porous Materials, Kavala, 9-10 September 2013.
- SPE competition, Proposal presentation, Final Round, Amsterdam, 27/10/2014, Title of proposal: “Assessing the capacity of nanofluids to enhance residual oil recovery
- 3rd Applied Research and Innovation Competition, joint initiative of Eurobank and SEV (Hellenic Federation of Enterprises), Final Round, Title: “Cold Plasma Apparatus for the fast, efficient and cost effective remediation of highly polluted soils”, 2015-16.
- 3rd Applied Research and Innovation Competition, joint initiative of Eurobank and SEV (Hellenic Federation of Enterprises), 23/2/2016, **2nd Prize of Applied Research**, Title: “Cold Plasma Apparatus for the fast, efficient and cost effective remediation of highly polluted soils”.

PARTICIPATION IN ADMINISTRATIVE ACTIVITIES

1. Member of the FORTH/ICE-HT Scientific Council (2/2008-Today).
2. Member of the committee for Service Research Facilities and contact person between committee and FORTH/ICE-HT Scientific Council (2/2008-1/2014).
3. Member of the committee for Health and Safety and contact person between committee and FORTH/ICE-HT Scientific Council (2/2011-Today).

ORGANIZATION OF CONFERENCES

1. Member of the Scientific Committee of the 1st *Internat. Workshop on Groundwater Risk Assessment at Contaminated Sites (GRACOS)*, Tuebingen, Germany, 21-22 February 2002.
2. Member of the Scientific Committee of the 2nd *Internat. Workshop on Groundwater Risk Assessment at Contaminated Sites (GRACOS) and Integrated Soil and Water Protection (SOWA)*, Tubingen, Germany, 20-21 March 2003.
3. Member of the Organizing and Scientific Committee of the 1st STRESOIL Workshop, Szczecin, Poland, 28-29 September 2006.
4. Member of the Organizing Committee of the 7th Panhellenic Scientific Conference of Chemical Engineering, Patras, Greece, 3-5 June 2009.
5. Member of the Organizing Committee of the 4th Panhellenic Symposium of Porous Materials, Patras, Greece, 22-23 October 2009.
6. Member of the Scientific Committee of the 5th International Congress on Arsenic in the Environment, Buenos Aires, Argentina, 11-16 May 2014.
7. Member of the Organizing Committee of the 10th Panhellenic Scientific Conference of Chemical Engineering, Patras, Greece, 4-6 June 2015.

A. PUBLICATIONS IN REFEREED JOURNALS

(the corresponding author is underlined)

- Tsakiroglou, C.D. and A.C. Payatakes, “A new simulator of mercury porosimetry for the characterization of porous materials”, *J. Colloid Interface Sci.*, **137**, 315-339 (1990).
- Tsakiroglou, C.D. and A.C. Payatakes, “Effects of pore-size correlations on mercury porosimetry curves”, *J. Colloid Interface Sci.*, **146**, 479-494 (1991).
- Tsakiroglou, C.D. and A.C. Payatakes, “Pore-wall roughness as a fractal surface and theoretical simulation of mercury intrusion/retraction in porous media”, *J. Colloid Interface Sci.*, **159**, 287-301 (1993).
- Yao, J., J.F. Thovert, P.M. Adler, C.D. Tsakiroglou, V.N. Burganos, A.C. Payatakes, J.C. Moulou and F. Kalaydjian, “Characterization, reconstruction and transport properties of vosges sandstone”, *Revue de L' Institut Francais du Petrole*, **52**(1), 3-21 (1997).
- Tsakiroglou, C.D., G.B. Kolonis, T.C. Roumeliotis and A.C. Payatakes, “Mercury penetration and snap-off in lenticular pores”, *J. Colloid Interface Science*, **193**, 259-272 (1997).
- Tsakiroglou, C.D. and A.C. Payatakes, “Mercury intrusion and retraction in model porous media”, *Adv. Colloid Interface Sci.*, **75**, 215-253 (1998).
- Wilett, M., V.N. Burganos, C.D. Tsakiroglou and A.C. Payatakes, “Gas sensing and structural properties of variously pretreated nanopowder tin (IV) oxide samples”, *Sensors and Actuators B*, **53**, 76-90 (1998).
- Mastorakos, E., A. Massias, C.D. Tsakiroglou, D.A. Goussis, V.N. Burganos and A.C. Payatakes, “CFD predictions for cement kilns including flame modelling, heat transfer and clinker chemistry”, *Applied Mathematical Modelling*, **23**, 55-76 (1999).
- Tsakiroglou, C.D. and M. Fleury, “Pore network analysis of resistivity index for water-wet porous media”, *Transport in Porous Media*, **35**, 89-128 (1999).
- Tsakiroglou, C.D. and M. Fleury, “Resistivity index of fractional wettability porous media”, *J. Petroleum Science & Engineering*, **22**, 253-274 (1999).
- Tsakiroglou, C.D. and A.C. Payatakes, “Characterization of the pore structure of reservoir rocks with the aid of serial sectioning analysis, mercury porosimetry and network simulation”, *Adv. Water Resour.*, **23**, 773-789 (2000).
- Theodoropoulou, M., V. Karoutsos, and C. Tsakiroglou, “Investigation of the contamination of fractured formations by non-Newtonian oil pollutants”, *Environmental Forensics*, **2**, 321-334 (2001).
- Tsakiroglou, C.D. and D.G. Avraam, “Fabrication of a new class of porous media models for visualization studies of multiphase flow processes”, *J. Material Science*, **37**, 353-363 (2002).
- Tsakiroglou, C.D., “Determination of the transport properties of single fractures with the aid of critical path analysis”, *Industrial & Engineering Chemistry Research*, **41**, 3462-3472 (2002).
- Tsakiroglou, C.D., “A methodology for the derivation of non-Darcian models for the flow of generalized Newtonian fluids in porous media”, *J. Non-Newtonian Fluid Mechanics*, **105**, 79-110 (2002).

- Theodoropoulou, M., V. Karoutsos, C. Kaspiris, and C.D. Tsakiroglou, “A new visualization technique for the study of solute dispersion in porous media models” *J. Hydrology*, **274**, 176-197 (2003).
- Tsakiroglou, C.D., M. Theodoropoulou, V. Karoutsos, D. Papanicolaou, V. Sygouni “Experimental study of the immiscible displacement of shear-thinning fluids in pore networks”, *J. Colloid Interface Science*, **267**, 217-232 (2003).
- Tsakiroglou, C.D., M. Theodoropoulou, and V. Karoutsos, “Non-equilibrium capillary pressure and relative permeability curves of porous media”, *AIChE J.*, **49**, 2472-2486 (2003).
- Klint, K.E., P. Gravesen, A. Rosenbom, C. Laroche, L. Trenty, P. LeThiez, F. Sanchez, L. Molinelli and C.D. Tsakiroglou, “Multi-scale characterization of fractured rocks used as a means for the realistic simulation of pollutant migration pathways in contaminated sites: a case study”, *Water, Air and Soil Pollution: FOCUS*, **4**, 201-214 (2004).
- Tsakiroglou, C.D., V.N. Burganos, and J. Jacobsen, “Pore structure analysis by using nitrogen sorption and mercury intrusion data”, *AIChE J.*, **50**, 489-510 (2004).
- Tsakiroglou, C.D., “Correlation of the two-phase flow coefficients of porous media with the rheology of shear-thinning fluids”, *J. Non-Newtonian Fluid Mech.*, **117**, 1-23 (2004).
- Bouras, P., E. Stathatos, P. Lianos, C. Tsakiroglou, “Photodegradation of Basic Blue by highly efficient nanocrystalline titania films”, *Applied Catalysis B: Environmental*, **51**, 273-279 (2004).
- Stathatos, E., P. Lianos, C. Tsakiroglou, “Highly Efficient Nanocrystalline Titania Films made from Organic/Inorganic Nanocomposite Gels”, *Microporous and Mesoporous Materials*, **75**, 255-260 (2004).
- Stathatos, E., P. Lianos, C. Tsakiroglou, “Metachromatic effects and photodegradation of Basic Blue on nanocrystalline titania films”, *Langmuir*, **20**, 9103-9107 (2004).
- Tsakiroglou, C.D. M.A. Theodoropoulou, V. Karoutsos, and D. Papanicolaou, “Determination of the effective transport coefficients of pore networks from transient immiscible and miscible displacement experiments”, *Water Resources Research*, **41**(2), W02014 (2005).
- Gaganis, P., E.D. Skouras, M.A. Theodoropoulou, C.D. Tsakiroglou and V.N. Burganos, “On the evaluation of the dispersion coefficients from visualization experiments in artificial porous media”, *J. Hydrology*, **307**, 79-91 (2005).
- Aggelopoulos, C., P. Klepetsanis, M. Theodoropoulou, K. Pomoni, and C.D. Tsakiroglou “Large-scale effects on the resistivity index of porous media”, *J. Contam. Hydrology*, **77**, 299-323 (2005)
- Tsakiroglou, C.D., M. Theodoropoulou, and V. Karoutsos, “Boyancy-driven chaotic regimes during solute dispersion in pore networks”, *Special Issue of Oil & Gas Science and Technology – La Revue de l’IFP*, **60**(1), 141-159 (2005).
- Nikolakis, V., and C.D. Tsakiroglou, “Interpretation of the transport properties of alumina support in terms of pore structure characteristics”, *Ind. Eng. Chem. Res.*, **44**, 2333-2342 (2005).

- Theodoropoulou, M.A., V. Sygouni, V. Karoutsos, and C.D. Tsakiroglou, “Relative permeability and capillary pressure functions of porous media as related to the displacement growth pattern”, *Int. J. Multiphase Flow*, **31**, 1155-1180 (2005).
- Sygouni, V., C.D. Tsakiroglou, and A.C. Payatakes, “Capillary pressure spectrometry: toward a new method for the measurement of the fractional wettability of porous media”, *Phys. Fluids*, **18**, 053302 (2006).
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- Tsakiroglou, C.D., D.G. Avraam, A.C. Payatakes, “Transient and steady-state relative permeabilities from two-phase flow experiments in planar pore networks”, *Adv. Water Res.*, **30**, 1981-1992 (2007)
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- Tsakiroglou, C.D. and M.A. Ioannidis, “Dual porosity modeling of the pore structure and transport properties of a contaminated soil”, *Eur. J. Soil Sci.*, **59**, 744-761 (2008).
- Magga, Z., D.N. Tzovolou, M.A. Theodoropoulou, Th. Dalkarani, K. Pikios, C.D. Tsakiroglou, “Soil column experiments used as a means to assess the transport, sorption, and biodegradation of pesticides in groundwater”, *J. Environ. Sci and Health: B*, **43**, 732-741 (2008).
- Aggelopoulos, C.A., and C.D. Tsakiroglou, “Quantifying the Soil Heterogeneity from Solute Dispersion Experiments”, *Geoderma*, **146**, 412-424 (2008).
- Aggelopoulos, C.A., and C.D. Tsakiroglou, “The effect of micro-heterogeneity and capillary number on capillary pressure and relative permeability curves of soils”, *Geoderma*, **148**, 25-34 (2008).
- Tsakiroglou, C.D., M.A. Ioannidis, E. Amirtharaj, O. Vizika, “A new approach for the characterization of the pore structure of dual porosity rocks”, *Chem. Eng. Sci.*, **64**, 847-859 (2009).
- Aggelopoulos, C.A., and C.D. Tsakiroglou, “A multi-flowpath model for the interpretation of immiscible displacement experiments in heterogeneous soil columns”, *J. Contam. Hydrol.*, **105**, 146-160 (2009).
- Tzovolou, D.N., Y. Benoit, F. Haeseler, K.E. Klint, and C.D. Tsakiroglou, “Spatial distribution of jet fuel in the vadoze zone of a heterogeneous and fractured soil”, *Science of the Total Environment*, **407**, 3044-3054 (2009).

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- Tsakiroglou C.D., V. Sygouni, C.A. Aggelopoulos, “A dynamic network-type simulator to investigate the multiphase flow properties of heterogeneous soils”, *Vadoze Zone J.*, **14**, 285-294 (2010).
- Tsakiroglou, C.D., V. Sygouni, and C.A. Aggelopoulos, “Using multi-level wavelets to correlate the two-phase flow characteristics of porous media with heterogeneity”, *Chem. Eng. Sci.*, **65**, 6452-6460 (2010).
- Tzovolou D.N., C.A. Aggelopoulos, M.A. Theodoropoulou, and C. D. Tsakiroglou, “Remediation of the unsaturated zone of NAPL-polluted low permeability soils with steam injection: An experimental study”, *J. Soils & Sediments*, **11**, 72-81 (2011).
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- Amirtharaj, E.S., M.A. Ioannidis, B. Parker and C.D. Tsakiroglou, “Statistical Synthesis of Imaging and Porosimetry Data for the Characterization of Microstructure and Transport Properties of Sandstones”, *Transp. Porous Media*, **86**, 135-154 (2011).
- Tsakiroglou, C.D. “A method to calculate the multiphase flow properties of heterogeneous porous media by using network simulations”, *AIChE J.*, **57**, 2618-2628 (2011).
- Tsakiroglou, C.D., “A multi-scale approach to model two-phase flow in heterogeneous porous media”, *Transp. Porous Media* **94**, 525-536 (2012).
- Magga Z., D.N. Tzovolou, M.A. Theodoropoulou, C.D. Tsakiroglou, “Combining experimental techniques with non-linear numerical models to assess the sorption of pesticides on soils”, *J. Contam. Hydrology* **129-130**, 62-69 (2012).
- Tsakiroglou, C.D., K.E.S. Klint, M.A. Theodoropoulou, B. Nilsson, and C.A. Aggelopoulos, “From aperture measurements to hydraulic properties of fractures”, *Geoderma*, **181-182**, 65-77 (2012).
- Aggelopoulos, C.A., and C.D. Tsakiroglou, “Effects of Micro-Heterogeneity and Hydrodynamic Dispersion on the Dissolution Rate of Carbon Dioxide in Water-Saturated Porous Media”, *International Journal of Greenhouse Gas Control* **10**, 341-350 (2012).
- Tsakiroglou, C.D., C.A. Aggelopoulos, D.N. Tzovolou, M. Theodoropoulou, D.G. Avraam, “Dynamics of surfactant-enhanced oil mobilization and solubilization in

- porous media: experiments and numerical modeling”, *Int. J. Multiphase Flow* **55**, 11-23 (2013).
- Tsakiroglou, C.D. and C.A. Aggelopoulos, “Microscopic and macroscopic properties of soils used as means for the interpretation of the efficiency of soil remediation technologies”, *Procedia Environmental Sciences* **18**, 638-648 (2013).
 - Aggelopoulos, C.A., C.D. Tsakiroglou, S. Ognier and S. Cavadias, “Ex situ soil remediation by cold atmospheric plasma discharge”, *Procedia Environmental Sciences* **18**, 649-656 (2013).
 - Tsakiroglou, C.D. “Computation of the two-phase flow properties of intermediate-wet porous media: a pore network approach”, *Can. J. Chem. Eng.* **92**, 515-523 (2014).
 - Terzi, K., I. Bountas, C.A. Aggelopoulos and C.D. Tsakiroglou, “Effects of Carbon Dioxide on the Mobilization of Metals from Aquifers”, *Environmental Science and Technology*, **148 (8)**, 4386-4394 (2014).
 - Berki P., B. Reti, K. Terzi, I. Bountas, E. Horvath, D. Fejes, A. Magrez, C. Tsakiroglou, L. Forró, and K. Hernádi, The effect of titania precursor on the morphology of prepared TiO₂/MWCNT nanocomposite materials. *Phys. Status Solidi B* **251(12)**, 2384-2388 (2014).
 - Aggelopoulos, C.A., C.D. Tsakiroglou, S. Ognier, S. Cavadias “NAPL-contaminated soil remediation by ex-situ DBD plasma”, *International Journal of Environmental Science and Technology* **12 (3)**, 1011-1020 (2015).
 - Aggelopoulos, C.A., P. Svarnas, M.I. Klapa, C.D. Tsakiroglou, “Dielectric barrier discharge plasma used as a means for the remediation of soils contaminated by non-aqueous phase liquids”, *Chem. Eng. J.* **270**, 428-436 (2015).
 - Tsakiroglou, C.D., C.A. Aggelopoulos, K. Terzi, D.G. Avraam, M. Valavanides, “Steady-State Two-Phase Relative Permeability Functions of Porous Media: A Revisit”, *Int. J. Multiphase Flow* **73**, 34-42 (2015).
 - Tzovolou, D.N., Theodoropoulou, M.A., Blanchet, D., Haeseler, F., Jeczalik, M., Kasela, T., W. Slack, and C.D. Tsakiroglou, “In situ bioventing of the vadoze zone of multi-scale heterogeneous soils”, *Environ. Earth Sci.* **74**, 4907-4925 (2015).
 - Tzovolou, D.N. and C.D. Tsakiroglou, “Experimental study of the in situ remediation of low permeability soils by bioventing”, *Environ. Eng. & Manag. J.* **accepted** (2015).
 - Kmetykó, Á., Szániel, Á., Tsakiroglou, C., Dombi, A., Hernádi, K., “Enhanced photocatalytic H₂ generation on noble metal modified TiO₂ catalysts excited with visible light irradiation”, *Reaction Kinetics, Mechanisms and Catalysis* **117 (1)**, 379-390 (2016).
 - Tsakiroglou, C., Terzi, K., Sikinioti-Lock, A., Hajdu, K., Aggelopoulos, C., “Assessing the capacity of zero valent iron nanofluids to remediate NAPL-polluted porous media”, *Science of the Total Environment* **563–564**, 866–878 (2016).

- Aggelopoulos, C.A., Gkelios, A., Klapa, M.I., Kaltsonoudis, C., Svarnas, P., Tsakiroglou, C.D. “Parametric analysis of the operation of a non-thermal plasma reactor for the remediation of NAPL-polluted soils”, *Chem. Eng. J.* **301**, 353-361 (2016).
- Terzi, A. Sikinioti-Lock, A. Gkelios, D. Tzavara, A. Skouras, C. Aggelopoulos, P. Klepetsanis, S. Antimisiaris, C. D. Tsakiroglou, Mobility of zero valent iron nanoparticles and liposomes in porous media. *Coll. & Surf. A: Physicochem. & Eng. Aspects* **506**, 711-722 (2016).
- Terzi, K., Aggelopoulos, C.A., Bountas, I., Tsakiroglou, C.D., Environmental impacts of CO₂ leakages from storage sites on the quality of potable groundwater of shallow aquifers, *Petroleum Abstracts* **56** (19), 97 (2016).
- Aggelopoulos, C.A., M. Dimitropoulos, A. Govatsi, L. Sygellou, C.D. Tsakiroglou, S.N. Yannopoulos “Influence of the Surface-to-Bulk Defects Ratio of ZnO and TiO₂ on their UV-mediated Photocatalytic Activity”. *Applied Catalysis B: Environmental*, 205, 292-301 (2017).
- Aggelopoulos, C.A., E. Moschopoulou, P. Klepetsanis, C.D. Tsakiroglou “Valorization of fruit wastes (pistachio shells) as adsorbent for the removal of Zn from aqueous solutions under adverse acidic conditions”. *Desalination and Water Treatment*, accepted (2017).
- Tsakiroglou, C.D., K. Hajdu, K. Terzi, C.A. Aggelopoulos, M.A. Theodoropoulou A statistical shrinking core model to estimate the overall dechlorination rate of PCE by an assemblage of zero-valent iron nanoparticles, *Chem. Eng. Sci.*, submitted (2017).

B. PUBLICATIONS IN BOOKS

1. Tsakiroglou, C.D., “Derivation of new models for the capillary pressure and relative permeability curves of porous media”, Proceedings of the International Conference *Porous Media: Physics, Models, Simulation*, Moscow, Russia, 19-21 Nov. 1997, A. Dmitrievsky and M. Panfilov (eds.), pp.167-183, World Scientific Publishing Co., Singapore (2000).
2. Tsakiroglou, C.D., Theodoropoulou, M. and Karoutsos, V. “Fluid flow in fractured formations”, In: Rosenbaum MS, Turner AK (eds) *Characterization of the Shallow Subsurface: Implications for Urban Infrastructure and Environmental Assessment*, pp.161-172, Springer-Verlag, Dusseldorf (2003).
3. Tsakiroglou, C.D., “Characterization of void space utilising pore network models”, In: Rosenbaum MS, Turner AK (eds) *Characterization of the Shallow Subsurface: Implications for Urban Infrastructure and Environmental Assessment*, pp.283-292, Springer-Verlag, Dusseldorf (2003).
4. Tsakiroglou, C.D., “Improved risk assessment of the contaminant spreading in fractured underground reservoirs”, In: Ph. Quevauviller (ed.) *Groundwater, Science, and Policy*, Royal Society of Chemistry, London (2007).
5. Marta I. Litter, José Luis Cortina, António M.A. Fiúza, Aurora Silva and Christos Tsakiroglou, “In-situ technologies for groundwater treatment. The case of arsenic”, Chapter 1 in: *In-Situ Remediation of Arsenic Contaminated Sites*, J. Bundschuh and H. Hollander (eds) CRC Press (2014).

C. PUBLICATIONS IN REFEREED PROCEEDINGS OF CONFERENCES

1. Tsakiroglou, C.D., and A.C. Payatakes, "A new mercury intrusion-retraction simulator used as a means for the characterization of porous materials", *Proceedings of IUPAC-Symposium COPS-II*, Alicante, 6-9 May 1990, F. Rodriguez-Reinoso et al (eds), pp.169-178, Elsevier, Amsterdam, (1991).
2. Tsakiroglou, C.D., and A.C. Payatakes, "Analysis of the topological and geometrical characteristics of the pore space of permeable solids using serial tomography, mercury porosimetry and theoretical simulation", *Proceedings of Symposium COPS IV*, Bath, 15-18 Sept. 1996, B. McEnaney et al (eds), pp.205-213, Royal Society of Chemistry, London, (1997).
3. Tsakiroglou, C.D., D.G. Avraam and A.C. Payatakes, "Improved macroscopic equations of two-phase flow in porous media based on new models of the capillary pressure and relative permeability", *Proceedings of the XII International Conference on Computational Methods in Water Resources*, Crete, 15-19 June 1998, V.N. Burganos et al (eds), Vol.2, pp.27-34 (1998).
4. Klint K.E. and Tsakiroglou C.D. "A new method of fracture aperture characterization" *Proceedings of the 5th International Conference on the Protection and Restoration of the Environment*, 3-6 July 2000, Thassos Island, Greece, V.A. Tsihrintzis et al. (eds.), pp.127-136 (2000).
5. Theodoropoulou, M., V. Karoutsos, V. Sygouni and C.D. Tsakiroglou, "Flow of non-Newtonian NAPLs in single fractures", *Proceedings of the 3rd European Congress of Chemical Engineering, Topic: Multiphase Systems*, 26-28 June 2001, Nuremberg, Germany.
6. Tsakiroglou, C.D., V. Karoutsos, M. Theodoropoulou, V. Sygouni and F. Spyropoulos, "Toward the development of new phenomenological models about the flow of generalized non-Newtonian fluids in fractured porous media", *Proceedings of the International Conference 'Ecological Protection of the Planet Earth I'*, p.69-80, 5-8 June 2001, Xanthi, Greece.
7. Klint, K.E., A. Rosenbom and C.D. Tsakiroglou, "A new approach to analysis of mechanical fracture aperture in rocks", *Proceedings (in CD) of the International Conference 'Fractured Rock 2001'*, March 26-28 2001, Toronto, Ontario, Canada.
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