

RÉSUMÉ

NIKOLAOS ANDRITSOS

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OFFICE ADDRESS

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PERSONAL INFORMATION:

Birth Date: June 14, 1956
Marital Status: Married, two children
Nationality: Greek

EDUCATION:

Ph.D. Chemical Engineering, University of Illinois, Urbana, Illinois, USA, Jan. 1986 (conferred; completed in 1995) (5.00/5.00 GPA)
M.Sc. Chemical Engineering, University of Manchester, Manchester, England, 1981.
Diploma Chemical Engineering, Aristotle University of Thessaloniki, Thessaloniki, Greece, July 1979 (9/10 GPA)

THESES:

Ph.D Effect of Pipe Diameter and Liquid Viscosity on Horizontal Stratified Flow, *Adviser:* Prof. T.J. Hanratty
M.Sc. Performance Studies in a Packed Column, *Adviser:* Prof. D.R. Webb
Dipl. Two-Phase Flow in Trickle Bed Reactors, *Adviser:* Prof. A.J. Karabelas

EXPERIENCE AND PROFESSIONAL HISTORY:

Summer 1977 Employment at the Radiochemisches Labor (Hoechst A.G., Frankfurt a.M., Germany) through IEASTE (International Exchange Association for Students of Technical Experience).

July - Sep. 1987 *Research Associate* in the Chemical Engineering Department, University of Illinois.

Jan. 87- May 2003 *Senior Researcher* in the Chemical Process Research Institute of Thessaloniki in the areas of: transfer of multiphase mixtures in geothermal, oil and chemical industry, scaling and corrosion problems in low and high enthalpy geothermal plants, H₂S gas abatement methods in geothermal plants, characterization of low and high enthalpy geothermal fluids, direct uses of geothermal energy etc., fouling in heat exchangers, in dairy industry and in membrane processes – mitigation methods, water and energy conservation in cooling water systems, preparation of CdS solar layers, stone deterioration and conservation etc.

- He has participated in more than 25 research and development projects and 4 Educational Projects funded by European Commission, General Secretariat for Research and Technology – Greece, Industries and Organizations, Municipalities, Middle East Desalination Research Centre, etc.
- He was responsible for the technical services provided to Greek companies and organizations on evaluation of geothermal fluids and geothermal uses.

May 2003-today Assistant Professor (2003-2008), Associate Professor (2008-June 2013) and since June 2013 Professor at the Department of Mechanical and Industrial Engineering, University of

Thessaly, Volos, Greece. He has been involved in more than 15 educational and research and development projects.

RESEARCH INTERESTS AND ACTIVITIES

Transfer of multiphase mixtures in geothermal, oil and chemical industry, fouling-scaling of heat exchangers (in cooling water systems, geothermal systems, dairy industry, membrane processes etc.) – mitigation methods, water saving and recycling in industrial systems, pollution abatement technologies, utilization and characterization of renewable energy resources (with emphasis to geothermal energy, biomass and biofuels), stone deterioration and conservation.

BOOKS AND CHAPTERS IN BOOKS

- Fytikas, M. and Andritsos, N. *Geothermal Energy – Geothermal Resources, Geothermal Fluids, Applications, Environment*. Tziolas Editions, Thessaloniki, Greece, 2004 (in Greek).
- Schäfer, A.I., Andritsos, N., Karabelas, A.J., Hoek, E.M.V., Schneider, R., and Nyström, M. *Chapter 8: Nanofiltration Fouling*. In *Nanofiltration – Principles and Applications*, Editors A.I. Schäfer, A.G. Fane, T.D. Waite. Elsevier Science, Oxford, pp. 169-240, 2004.
- Popovski, K., Andritsos, N., Fytikas, M., Sanner, B., Ungemach, P. and Valdimarsson, P. “Geothermal Energy”. Part of the series of the UNESCO ROSTE EURONETRETS, 2010.
- Andritsos, N., Translation and editing of the Book “Transport Phenomena – A Unified Approach” by R.S. Brodkey and H.C. Hershey, Tziola Editions, Thessaloniki, 2016.

SELECTED PUBLICATIONS IN INTERNATIONAL JOURNALS

- Andritsos, N. & T.J. Hanratty. Influence of interfacial waves on hold-up and frictional pressure drop in stratified gas-liquid flows. *AIChE J.* 33, 444-454, 1987.
- Andritsos, N., V. Bontozoglou & T.J. Hanratty. Theories on slug flow transition. *Chem. Engng Comm.*, 118, 361-385, 1992.
- Andritsos, N., Kontopoulou, M., Karabelas, A.J. and Koutsoukos, P.G., CaCO₃ deposit formation under isothermal conditions. *Can. J. Chem. Eng.*, 74, 911-919, 1996.
- Kostoglou, M., Andritsos, N. & Karabelas, A.J. Progress towards modelling the CdS chemical bath deposition process. *Thin Solid Films*, 387, pp. 115-117, 2001.
- Karabelas, A.J., S.G. Yiantsios, Z. Metaxiotou, N. Andritsos, A. Akiskalos, G. Vlachopoulos, S. Stavroulias. Water and materials recovery from fertilizer industry acidic effluents by membrane processes. *Desalination* 138, 93–102, 2001.
- Andritsos, N., P. Dalampakis and N. Kolios, Use of Geothermal Energy for Tomato Drying. *GeoHeat Center Quarterly Bul.*, 24(1), 9-13, March 2003.
- Tzotzi, C., Pahiadaki, T., Andritsos, N., Yiantsios, S.G. and Karabelas, A.J. An experimental study of CaCO₃ scaling of RO and NF membranes in cross-flow filtration. *J. Membrane Sci.*, 296, 171–184, 2007.
- Andritsos, N., Dalabakis, P., Karydakakis, G., Kolios, N. and Fytikas, M. Characteristics of Low-Enthalpy Geothermal Applications in Greece. *Renewable Energy* 36, 1298-1305, 2011.
- Leontidis, V., Vatteville, J., Vlachogiannis, M., Andritsos, N. and Bontozoglou, V. Nominally two-dimensional waves in inclined film flow in channels of finite width. *Physics of Fluids*, 22, 112106, 2010
- Tzotzi, C., Bontozoglou, V., Vlachogiannis, M. and Andritsos, N. Effect of Fluid Properties on Flow Patterns in Two-Phase Gas-Liquid Flow in Horizontal and Downward Pipes. *Industrial & Engineering Chemistry Research*, 50 (2), pp 645–655, 2011.
- Kostoglou, M., Chrysafis, N. and Andritsos, N. Modelling Tomato Dehydration in a Tunnel Dryer using Geothermal Energy. *Drying Technology: An International Journal*, 31:1, 5-16, 2013.
- Tzotzi, C. and Andritsos, N. Interfacial Shear Stress in Wavy Stratified Gas-Liquid Flow in Horizontal Pipes. *Int. J. Multiphase Flow*, 54, 43-54, 2013.
- Kaprara, E., Seridou, P., Tsiamili, V., Mitrakas, M., Vourlias, G., Tsiaoussis, I., Kaimakamis, G., Pavlidou, E., Andritsos, N. and Simeonidis, K. Cu-Zn powders as potential Cr(VI) adsorbents for drinking water. *J. Hazardous Materials*, 262, 606-613, 2013.
- Simeonidis, K., Andritsos, N., Kaprara, E., Mourdikoudis, S and M. Mitrakas, Adapting the use of Fe₃O₄ nanoparticles in large-scale water treatment facilities. *MRS Proceedings*, Vol. 1708 (2014) DOI: <http://dx.doi.org/10.1557/opl.2014.487>.

Simeonidis, K., Kaprara, E., Samaras, T., Angelakeris, M., Pliatsikas, N., Vourlias, G., Mitrakas, M. and Andritsos, N. Optimizing magnetic nanoparticles for drinking water technology: The case of Cr(VI). *Sci. Total Environment* 535, SI 61-68 (2015).

SELECTED CONFERENCE PROCEEDINGS (2010-2019)

- Andritsos, N., Arvanitis, A., Papachristou, M., Fytikas, M. and Dalambakis, P. Geothermal Activities in Greece During 2005-2009. Proceedings of the *World Geothermal Congress 2010*, 25 - 30 April 2010, Bali, Indonesia (invited paper).
- Kostoglou, M., Chrysafis, N. and Andritsos, N. Modeling a Tomato Dehydration Process using Geothermal Energy. Proceedings of the *World Geothermal Congress 2010*, 25 - 30 April 2010, Bali, Indonesia.
- Tzotzi, C., Vlachogiannis, M., and Andritsos, N. Effect of fluid properties in small angle gas-liquid upflows. Presented at the *48th European Two-Phase Flow Group Meeting 2010*, Brunel University, UK, June 28 – 30, 2010.
- Tzotzi, C., Syranidou, N., and Andritsos, N. Slightly upwards two-phase gas-liquid flow. Proceeding, FLOW 2010, 7th Greek Conference on Fluid Flow Phenomena, Thessaloniki, November 12-13, 2010, in Greek).
- Kampouras, N., Vlachogiannis, M. and Andritsos, N. Effect of drag reducing polymers on two-phase stratified flow in horizontal and slightly inclined pipes. Presented at the *49th European Two-Phase Flow Group Meeting 2011*, 29th May – 2nd June, 2011, Tel-Aviv University.
- Vilanova, R., Meneses, M., Gali, M., Veza, J., Blanco, A., Capodaglio, A., Callegarhi, A. and Andritsos, N. An Integrative Approach to Curriculum Development Approach: European Master programme development in Advanced Water Treatment and Desalination Engineering. Proceedings, SEFI Annual Conference 2011, Lisbon, 28-30 September.
- Simeonidis, K., Tziomaki, M., Angelakeris, M., Samaras, T., Martinez-Boubeta, C., Balcells, L., Monty, C., Mitrakas, M. and Andritsos, N. Magnetic nanoparticles for potable water treatment: removal of arsenic and chromium. Presented at the Third European Workshop "Self-Organized Nanomagnets 2012", Guadarrama, Spain, April 16-20, 2012.
- Vilanova, R., Meneses, M., Gali, M., Karabelas, A.J., Veza, J., Blanco, A., Capodaglio, A., Callegarhi, A. and Andritsos, N. European Master programme in advanced water treatment and desalination engineering. Proceedings, Desalination for the Environment - Clean Water and Energy, 22–26 April 2012, Barcelona, Spain.
- Simeonidis, K., M. Tziomaki, T. Samaras, M. Angelakaris, M. Mitrakas, C. Monty, and N. Andritsos, Development of magnetic nanoparticles for Cr(VI) removal from drinking water integrated by a magnetic separation system. Proc., 3rd International Conference on "Industrial and Hazardous Waste Management", September 12-14, 2012, Chania (Crete), Greece.
- Stamatis, A. and Andritsos, N. Assessment of Electricity Generation Using Medium-Temperature Geothermal Resources in Greece. Proceedings, European Geothermal Congress 2013, Pisa, Italy, 3-7 June 2013.
- Andritsos, N., Arvanitis, A., Dalabakis, P., Karytsas, C., Mendrinou, D., and Papachristou, M. Geothermal Energy Use, Country Update for Greece. Proceedings, European Geothermal Congress 2013, Pisa, Italy, 3-7 June 2013.
- Fytikas, M. and Andritsos, N. Applications of Geothermal Energy in Mineral Processing. Proceedings, 6th International Conference on Sustainable Development Indicators in the Mineral Industries (SDIMI 2013), Milos, Greece, June 30- July 3, 2013.
- Andritsos, N., Dalambakis, P., Arvanitis, A., Papachristou, and M., Fytikas, M. Geothermal developments in Greece – Country update 2010-2014 . Proceedings of the *World Geothermal Congress 2015*, 19 - 24 April 2015, Melbourne, Australia – New Zealand (invited paper).
- Andritsos, N. and Kostoglou, M. FORMATION OF INORGANIC LAYERS BY FLOWING SOLUTIONS. 12th Greece-Cyprus Congress on Chemistry, Thessaloniki, May 8-10, 2015 (invited lecture).
- Dermata, T-K., Schina, L., Gkountas, A. and Andritsos, N. Investigation of a Natural Gas / Low-Enthalpy Geothermal Energy Hybrid System. *Proceedings, European Geothermal Congress 2016*, Strasbourg, France, 19-24 Sept 2016.
- Papachristou, M., Mendrinou, D. Dalambakis, P., Arvanitis, A., Karytsas, C., and Andritsos, N. Geothermal Energy Use, Country Update for Greece. Proceedings, *European Geothermal Congress 2016*, Strasbourg, France, 19-24 Sept 2016.
- Papachristou, M., Fytikas, M., Andritsos, N., Nikolaidou, E., Kolios, P. New thermometric data from shallow aquifers in Santorini island (Greece): Possibilities for geothermal exploitation. Proceedings, *European Geothermal Congress 2016*, Strasbourg, France, 19-24 Sept 2016. (Paper S-GE-58)
- Chatzipaschali, A, Andritsos, N. and Stamatis A. Investigation on the incorporation of a microturbine into a anaerobic digestion system. Proceedings, 11th national Congress on Renewable energy sources, Thessaloniki, March 14-16, 2018.

Papachristou, M., Arvanitis, A., Mendrinou, D., Dalabakis, P., Karytsas, C. and Andritsos, N. Geothermal Energy Use, Country Update for Greece (2016-2019). European Geothermal Congress 2019, Den Haag, The Netherlands, 11-14 June 2019.

SUMMARY OF PUBLICATIONS - CITATIONS

Papers in refereed journals: 37

Papers in National and International Conference Proceedings: >130

Citations according to Web of Science (self-citations not included): >1000

Reviewer for more than 25 international scientific journals

TEACHING EXPERIENCE

2003-present	<i>Dept. Mechanical Engineering, Univ. of Thessaly</i>	Courses: <ul style="list-style-type: none">- Transport Phenomena- Renewable Energy Sources- Pollution Abatement Technologies- Two-phase flows and phase change- Advanced Transport Phenomena- Introduction to Sustainable energy Advising (3) PhD, (15) MSc and (40) Diploma Theses
2000-2001	<i>Dept. Energy Management Engineering, Aristotle University of Thessaloniki (AUTH)</i>	Course: Renewable Energy Sources
1998-present	<i>Engineering School, AUTH</i>	Instructor in the Postgraduate Course on Monument Deterioration and Conservation
1982-1984	<i>Dept. Chemical Engineering, Univ. of Illinois at Urbana-Champaign</i>	Teaching assistant and co-advising senior theses

FOREIGN LANGUAGES:

English (fluently), French (fair)