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PROFESSIONAL PREPARATION: B.S., Chemical Engineering, National Technical University of Athens, Greece, 1974; M.S., Chemical Engineering, University of Illinois, Urbana, 1976; Ph.D., Chemical Engineering, University of Illinois, Urbana, 1978.

APPOINTMENTS: Esso-Pappas Refinery in Salonica, Greece, Summer 1972; British Steel Corporation in Consett, England, Summer 1973; Research Assistant, Department of Chemical Engineering, University of Illinois, Urbana, Illinois, 1974-1978; Research Associate, Pittsburgh Energy Technology Center of DOE, Summer 1980; Visiting Associate Professor, Department of Chemical Engineering, University of Houston, Summer 1983; Chevron Visiting Associate Professor, Department of Chemical Engineering, California Institute of Technology, Spring 1986; Research Associate, Hydrocarbon Research Institute, University of Southern California, 1987-2000; Co-Founder and Member of the Executive Committee, Center for Research in Environmental Sciences, Policy and Engineering (ESPE), University of Southern California, 1992-2001; Assistant Professor, Department of Chemical Engineering, University of Southern California, 1978-1983; Associate Professor, Department of Chemical Engineering, University of Southern California, 1983-1988; Professor, Department of Chemical Engineering, University of Southern California, 1988-1992; Robert E. Vivian Professor of Energy Resources, University of Southern California, 1992-present; Visiting Scientist, Laboratoire des Matériaux et Procédés Membranaires, Montpellier, France, Spring 2000; Chair Mork Family Department of Chemical Engineering and Materials Science, 2005-2011.

RESEARCH/TEACHING INTERESTS: Professor Tsotsis' research interests are in the areas of reaction engineering, reactor design, membrane and adsorbent preparation/characterization, and the modeling of transport in complex porous media. He is the author/co-author of over two hundred and twenty technical publications, and several book chapters. He has authored one book and edited two proceedings volumes. He also holds seven U. S. and one European patents. He has served as the teacher/mentor of countless undergraduates, and of more than twenty research MS, sixty PhD and twelve post-doctoral students.

HONORS: Greek Government Undergraduate Scholarship Award (4 times); National Student Award of the Greek Chemical Engineers, 1974; Oak Ridge Associated Universities Fellowship, 1980; Chevron Young Faculty Award, USC, 1981; USC Research Scholar, 1982-1983; Welch Foundation Fellow, 1983; Chevron Visiting Professor, Caltech, Spring 1986; UOP Invitational Lectureship, 1992; Fellow of the AIChE, 2009; OCEC President's Award, 2011.

PUBLICATIONS (2000- Present):

I. PUBLICATIONS IN PEER-REVIEWED JOURNALS (out of 173 total):

1. Qin, W., Ren, J.Y., Egolfopoulos, F.N., Wu, S., Zhang, H., and Tsotsis, T.T., "Oxygen Composition Modulation Effects on Flame Propagation and NO_x Formation in Methane-Air Premixed Flames," *Proceedings of the Combustion Institute Conference (International)*, 28, 1825, 2000.

2. Xu, L., Tsotsis T.T., and Sahimi, M., Non-equilibrium Molecular Dynamics Simulation of Transport and Separation of Gases in Carbon Nanopores. II. Binary and Ternary Mixtures and Comparison with Experimental Results, *J. Chem. Phys.*, 112, 910, 2000.
3. Ghassemzadeh, J., Xu, L., Tsotsis, T.T., and Sahimi, M., "Statistical Mechanics and Molecular Simulation of Adsorption in Microporous Materials: Pillared Clays and Carbon Molecular Sieve Membranes, *J. Phys. Chem. B*, 104, 3892, 2000.
4. Suwanmethanond, V., Goo, E., Johnston, G., Liu, P.K.T., Sahimi, M., and Tsotsis, T.T., "Porous SiC Sintered Substrates for High Temperature Membranes for Gas Separations," *Ind. Eng. Chem. Res.*, 39, 3264, 2000.
5. Sedigh, M.G., Jahangiri, M., Liu, P.K.T., Sahimi, M., and Tsotsis, T.T., "Structural Characterization of Polyetherimide-Based Carbon Molecular Sieve Membranes," *AIChE J*, 46, 2245, 2000.
6. Xu, L., Tsotsis T.T., and Sahimi, M., "Non-equilibrium Molecular Dynamics Simulations of Transport and Separation of Gas Mixtures in Porous Materials," *Phys. Rev. E*, 62, 6942, 2000.
7. Onstot, W.J., Minet, R.G., and Tsotsis, T.T., "Design Aspects of Membrane Reactors for Dry Reforming of Methane for the Production of Hydrogen," *Ind. Eng. Chem. Res.*, 40, 242, 2001.
8. Ren, J.Y., Qin, W., Egolfopoulos, F.N., Mak, H., and Tsotsis, T.T., "Methane Reforming and its Potential Effect on the Efficiency and Emissions of Lean Methane-Air Combustion," *Chem. Eng. Sci.*, 56, 1541, 2001.
9. Schwarz, B., Devlinny, J.S., and Tsotsis, T.T., "Pore Network Simulation of Biofilters -- Accounting for Pore Network Effects," *Chem. Eng. Sci.*, 56, 475, 2001.
10. Ren, J.Y., Qin, W., Egolfopoulos, F.N. and Tsotsis, T.T., "Fluid Mechanics Effects of Hydrogen Enhanced Lean Premixed Combustion," *Combustion and Flame*, 124, 717, 2001.
11. Qin, W., Egolfopoulos, F.N., and Tsotsis, T.T., "Fundamental and Environmental Aspects of Landfill Gas Utilization for Power Generation," *Chem. Eng. J.*, 82, 157, 2001.
12. Xu, L., Tsotsis T.T., and Sahimi, M., "Statistical Mechanics and Molecular Simulation of Adsorption of Ternary Gas Mixtures in Nanoporous Materials," *J. Chem. Phys.* 114, 7196, 2001.
13. Ren, J.Y., Egolfopoulos, F.N., and Tsotsis, T.T., "Reactive Membrane Separations for Power Generation Applications. Pollutant Emissions Aspects," *Ind. Eng. Chem. Res.*, 40, 4155, 2001.
14. Ren, J.Y., Egolfopoulos, F.N., and Tsotsis, T.T., "NO_x Emission Control of Lean CH₄/Air Combustion with the Addition of a CH₄ Reforming Mixture," *Combustion Science and Technology*, 174, 181, 2002.
15. Hashemi, M., Tsotsis, T.T., and Sahimi, M., "Computer Simulation of Gas Generation and Transport in Landfills – I. Quasi-Steady-State Conditions," *Chem. Eng. Sci.*, 57, 2475, 2002.
16. Yang, W., Kim, Y., Liu, P.K.T., Sahimi, M., and Tsotsis, T. T., "A Study by *In-Situ* Techniques of the Thermal Evolution of the Structure of a Mg-Al-CO₃ Layered Double Hydroxide (LDH)," *Chem. Eng. Sci.*, 57, 2945, 2002.
17. Ren, J.Y., Egolfopoulos, F.N., and Tsotsis, T.T., "Coupling CO₂ Decomposition with Power Generation. Basic Aspects of Combustion Stability and Pollutant Emissions," *Ind. Eng. Chem. Res.*, 41, 4543, 2002.
18. Park, B.G., Hung, F., Lim, S., Sahimi, M., and Tsotsis, T.T., "Design Issues of Pervaporation Membrane Reactors for Esterification," *Chem. Eng. Sci.*, 57, 4933, 2002.
19. Ren, J.Y., Fan, Y., Egolfopoulos, F.N., and Tsotsis, T.T., "Membrane-Based Reactive Separations for Power Generation Applications: Oxygen Lancing," *Chem. Eng. Sci.* 58, 1043, 2003.
20. Fan, Y., Ren, J.Y., Onstot, W., Pasale J., Egolfopoulos, F.N., and Tsotsis, T.T., "Reactor and Technical Feasibility Aspects of a CO₂ Decomposition-Based Power Generation Cycle, Utilizing a High Temperature Membrane Reactor," *Ind. Eng. Chem. Res.*, 42, 2618, 2003.

21. Firouzi, M., Sahimi, M., and Tsotsis, T.T., "Non-Equilibrium Molecular Dynamics Simulations of Transport and Separation of Supercritical Fluid Mixtures in Nanoporous Membranes. I. Results for a Single Carbon Nanopore," *J. Chem Phys.*, 119, 6810, 2003.
22. Lim, S.Y., Tsotsis, T.T., and Sahimi, M., "Molecular Simulation of Diffusion and Sorption of Gases in an Amorphous Polymer," *J. Chem. Phys.*, 119, 496, 2003.
23. Sahimi, M., and Tsotsis, T.T., "Molecular Pore Network Models of Nanoporous Materials," *Physica B*, 338, 291, 2003.
24. Park, B.G., and Tsotsis, T.T., "A Novel Pervaporation Membrane Reactor Integrated with a Water Adsorbent System for Equilibrium Reactions," *Chem. Eng. Processing*, 43/9, 1171, 2004.
25. Tsotsis, T.T., Patel, H., Fayyaz Najafi, B., Racherla, D., Knackstedt, M.A., and Sahimi, M., "An Overview of Laboratory and Modeling Studies of Carbon Dioxide Sequestration in Coalbeds," *Ind. Eng. Chem. Res.*, 43, 2887, 2004.
26. Firouzi, M., Molaai-Nehzad, K., Tsotsis, T.T., and Sahimi, M., Molecular Dynamics Simulations of Transport and Separation of Carbon Dioxide-Alkane Mixtures in Carbon Nanopores, *J. Chem. Phys.*, 120, 8172, 2004.
27. Kim, Y., Yang, W., Liu, P.K.T., Sahimi, M., and Tsotsis, T.T., "The Thermal Evolution of the Structure of a Mg-Al-CO₃ Layered Double Hydroxide (LDH). Sorption Reversibility Aspects," *Ind. Eng. Chem. Res.*, 43, 4559, 2004.
28. Langille, J., Pasale, J., Egolfopoulos, F.N., and Tsotsis, T. T., "Ignition Enhancement by *In Situ* Generated C₂ Additives for Natural Gas Practical Combustion Applications," *Chem. Eng. Sci.* 59, 5311, 2004.
29. Ciora, R.J., Fayyaz, B., Liu, P.K.T., Suwanmethanond, V., Mallada, R., Sahimi, M., and Tsotsis, T.T. "Preparation and Reactive Applications of SiC Membranes," *Chem. Eng. Sci.*, 59, 4957, 2004.
30. Nukunya, T., Deviny, J.S., and Tsotsis, T.T., Application of a Network Model to a Biofilter Treating Ethanol Vapor, *Chem. Eng. Sci.*, 60, 665, 2005.
31. Kim, N., Kim, Y., Tsotsis, T.T., and Sahimi, M. "Atomistic Simulation of Nanoporous Layered Double Hydroxide Materials and their Properties. I. Structural Properties," *J. Chem. Phys.*, 122, 2147, 2005.
32. Yang, L., Shahrivari, Z., Liu, P.K.T., Sahimi, M., and Tsotsis, T.T. "Removal of Trace Levels of Arsenic and Selenium from Aqueous Solutions by Calcined and Uncalcined Layered Double Hydroxides (LDH)," *Ind. Eng. Chem. Res.*, 44, 6804, 2005.
33. Fayyaz, B., Harale, A., Park, B.G., Liu, P.K.T., Sahimi, M., and Tsotsis, T.T., Design Aspects of Hybrid Adsorbent-Membrane Reactors (HAMR) for Hydrogen Production," *Ind. Eng. Chem. Res.*, 44, 9398, 2005.
34. Ostwal, M.M, Pellegrino, J., Norris, I., Tsotsis T.T., Sahimi, M., and Mattes, B.R. "Water Sorption of Acid-doped Polyaniline Solid Fibers: Equilibrium and Kinetic Response," *Ind. Eng. Chem. Res.*, 44, 7860, 2005.
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37. Yang, L., Dadwhal, M., Shahrivari, Z., Ostwal, M., Liu, P.K.T., Sahimi, M., and Tsotsis, T.T., "Adsorption of Arsenic on Layered Double Hydroxides (LDH): Effect of Particle Size," *Ind. Eng. Chem. Res.*, 45, 4792, 2006.
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41. Elyassi, B., Sahimi, M., and Tsotsis, T.T., "Silicon Carbide Membranes for Gas Separation Applications," *J. Membrane Sci.*, 288, 290, 2007.
42. Bagheri-Tar, F., Sahimi, M., and Tsotsis, T.T., "Preparation of Polyetherimide Nanoparticles by an Electrospray Technique," *Ind. Eng. Chem. Res.*, 46, 3348, 2007.
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44. Ostwal, M.M., Sahimi, M., and Tsotsis, T.T., "Molecular Dynamics Simulation of Diffusion and Sorption of Water in Doped Polyaniline," *J. Chem. Phys.*, 126, 124903, 2007.
45. Lim, S.Y, Kim, N, Tsotsis, T.T., and Sahimi, M., "Molecular Dynamics Simulation of Diffusion of Gases in Carbon Nanotube-Polyetherimide Polymer Composites," *Phys. Rev. E*, 76, 011810, 2007.
46. Harale, A., Hwang, H., Liu, P.K.T., Sahimi, M., and Tsotsis, T.T., Experimental Studies of a Hybrid Adsorbent-Membrane Reactor (HAMR) System for Hydrogen Production," *Chem. Eng. Sci.*, 62, 4126, 2007.
47. Sanchez, R., Tsotsis, T.T., and Sahimi, M. "Computer Simulation of Gas Generation and Transport in Landfills. III: Development of Landfills' Optimal Model", *Chem. Eng. Sci.*, 62, 6378, 2007.
48. Kim, N., Harale, A., Tsotsis, T.T., and Sahimi, M. "Atomistic Simulation of Nanoporous Layered Double Hydroxide Materials and their Properties. II. Adsorption and Diffusion," *J. Chem. Phys.* 127, 224701, 2007.
49. Elyassi, B., Sahimi, M., and Tsotsis, T.T. "A Novel Sacrificial Interlayer-Based Method for the Preparation of Silicon Carbide Membranes," *J. Membrane Sci.*, 316, 73, 2008.
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52. Hwang, H.T., Harale, A., Liu, P.K.T., Sahimi, M., and Tsotsis, T.T., "A Membrane-Based Reactive Separation System for CO₂ Removal in a Life Support System," *J. Membrane Sci.*, 315, 116, 2008.
53. Chen, F., Mourhatch, R., Tsotsis, T.T., and Sahimi, M., "Pore Network Model of Transport and Separation of Binary Gas Mixtures in Nanoporous Membranes," *J. Membrane Sci.*, 315, 48, 2008.
54. Dadwhal, M., Kim, T, Sahimi, M., and Tsotsis, T.T., "A Study of CO₂ Transport in Layered Double Hydroxides (LDH): The Effect of Particle Size," *Ind. Eng. Chem. Res.*, 47, 6150, 2008.
55. Wang, Y. L., Ji, C., Holley, A. T., Egolfopoulos, F. N., Tsotsis, T. T., and Curran, H. J., "Propagation and Extinction of Premixed Dimethyl-Ether/Air Flames," Proceedings of the Combustion Institute, 32, 1035, 2008.
56. Dadwhal, M., Ostwal, M., Liu P.K.T., Sahimi, M., and Tsotsis, T.T., "Adsorption of Arsenic on Conditioned Layered Double Hydroxides (LDH). Flow Experiments and Modeling," *Ind. Eng. Chem. Res.*, 48, 2076, 2009.

57. Rajabbeigi, N, Elyassi, B., Tsotsis, T.T., and Sahimi, M., "Molecular Pore-Network Model for Nanoporous Materials. I: Application to Adsorption in Silicon-Carbide Membranes," *J. Membrane Sci.*, 335, 5, 2009.
58. Kim, T., Sahimi, M., and Tsotsis, T.T., "The Preparation and Characterization of Hydrotalcite Micromembranes," *Chem. Eng. Sci.*, 64, 1585, 2009.
59. Kim, T., Sahimi, M., and Tsotsis, T.T., "The Preparation and Characterization of Hydrotalcite Thin Films," *Ind. Eng. Chem. Res.*, 48, 5794, 2009.
60. Kim, T.W., Sahimi, M., and Tsotsis, T.T. "Hydrotalcite-Sulfonated Polyetheretherketone (SPEEK) Cation-Exchange Membranes," *Ind. Eng. Chem. Res.*, 48, 9504, 2009.
61. Harale, A., Hwang, H., Liu, P.K.T., Sahimi, M., and Tsotsis, T.T., Design Aspects of a Hybrid Adsorbent-Membrane Reactor (HAMR) System for Hydrogen Production," *Chem. Eng. Sci.*, 65, 427, 2009.
62. Elyassi, B., Sahimi, M., and Tsotsis, T.T., "Fabrication of Amorphous Silicon-Carbide Nanofibers by a Template Technique," *Mat. Chem. Phys.*, 118, 259, 2009.
63. Sanchez, R., Tsotsis, T.T., and Sahimi, M. "Computer Simulation of Gas Generation and Transport in Landfills. IV: Modeling of Two-Phase Flow", *Chem. Eng. Sci.*, 65, 1212, 2009.
64. Rajabbeigi, N, Elyassi, B., Tsotsis, T.T., and Sahimi, M., "Molecular Pore-Network Model for Nanoporous Materials. II: Application to Transport and Separation of Gaseous Mixtures in Silicon-Carbide Membranes," *J. Membrane Sci.*, 345, 323, 2009.
65. Ostwal, M.M., Sahimi, M., and Tsotsis, T.T., "Water Harvesting Using a Conductive Polymer. A Study by Molecular Dynamics Simulation," *Phys. Rev. E.*, 79, 061801, 2009.
66. Mourhatch, R., Tsotsis, T.T., and Sahimi, M., "Network Model for the Evolution of the Pore Structure of Silicon-Carbide Membranes during their Fabrication," *J. Membrane Sci.*, 356, 138, 2010.
67. Abdollahi, M., Yu, J., Liu, P.K.T., Ciora, R., Sahimi, M., and Tsotsis, T.T., "Hydrogen Production from Coal-Derived Syngas Using a Catalytic Membrane Reactor Based Process," *J. Membrane Sci.*, 363, 160, 2010.
68. Abdollahi, M., Yu, J., Liu, P.K.T., Ciora, R., Sahimi, M., and Tsotsis, T.T., "Process Intensification in Hydrogen Production from Syngas," *Ind. Eng. Chem. Res.*, 49, 10986, 2010.
69. Feng, Q., Wang, Y. L., Egolfopoulos, F.N., and Tsotsis, T.T., "A Fundamental Study of the Oxidation Characteristics and Pollutant Emissions of Model Biodiesel Fuels," *Ind. Eng. Chem. Res.*, 49, 10392, 2010.
70. Mourhatch, R., Tsotsis, T.T., and Sahimi, M., "Determination of the True Pore Size Distribution by Flow Permporometry Experiments: An Invasion Percolation Model," *J. Membrane Sci.*, 367, 55, 2010.
71. Naik, C.V., Puduppakkam, K. V., Modak, A., Meeks, E., Wang, Y.L., Feng, Q., and Tsotsis, T.T., "Detailed Chemical Kinetic Mechanism for Surrogates of Alternative Jet Fuels," *Combust. Flame.*, 156, 434, 2011.
72. Wang, Y.L., Veloo, P.S., Egolfopoulos, F.N., and Tsotsis, T.T., "A Comparative Study on the Extinction Characteristics of Non-Premixed Dimethyl Ether and Ethanol Flames," *Proceedings of the Combustion Institute*, 33, 1003, 2011.
73. Wang, Y.L., Feng, Q., Egolfopoulos, F.N., and Tsotsis, T.T., "Studies of C₄ and C₁₀ Methyl-Ester Flames," *Combust. Flame*, 158, 1507, 2011.
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75. Kim, T.W., Sahimi, M., and Tsotsis, T.T., "Hybrid Hydrotalcite-Sulfonated Polyetheretherketone (SPEEK) Cation-Exchange Membranes Prepared by *in situ* Sulfonation," *Ind. Eng. Chem. Res.*, 50, 3880, 2011.

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78. Motamedhashemi, M.M.Y., Egolfopoulos, F.N., and Tsotsis, T.T., "Application of a Flow-Through Catalytic Membrane Reactor (FTCMR) for the Destruction of a Chemical Warfare Simulant," *J. Membrane Sci.*, 376, 119, 2011.
79. Abdollahi, M., Yu, J., Liu, P.K.T., Ciora, R., Sahimi, M., and Tsotsis, T.T., "Ultra-Pure Hydrogen Production from Reformate Mixtures using a Palladium Membrane Reactor System," *J. Membrane Sci.*, 390-391, 32, 2012.
80. Feng, Q., Jalali, A., Fincham, A.M., Wang, Y. L., Tsotsis, T.T., and Egolfopoulos, F. N., "Soot Formation in Flames of Model Biodiesel Fuels," *Combust. Flame*, 159, 1876, 2012.
81. Li, H., Qin, J., Tsotsis, T.T., and Sahimi, M., "Computer Simulation of Gas Generation and Transport in Landfills. VI. Dynamic Updating of the Model Using the Ensemble Kalman Filter," *Chem. Eng. Sci.* 74, 69, 2012.
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85. Nair, N., Zhang, X., Gutierrez, J., Chen, J., Egolfopoulos, F., and Tsotsis, T., "On the Impact of Siloxane Impurities on the Performance of an Engine Operating on Renewable Natural Gas," *Ind. Eng. Chem. Res.*, 51, 15786, 2012.
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87. Lee, H. C., Monji, M., Parsley, D., Sahimi, M., Liu, P., Egolfopoulos, F., and Tsotsis, T., "Use of Steam Activation as a Post-Treatment Technique in the Preparation of Carbon Molecular-Sieve Membranes," *Ind. Eng. Chem., Res.*, 53, 1122, 2013.
88. Naserifar, S., L. Liu, L., Goddard III, W.A., Tsotsis, T.T, and Sahimi M., "Towards a Process-Based Molecular Model of SiC Membranes. I. Development of a Reactive Force Field", *J. Phys. Chem. C*, 117, 3308, 2013.
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93. Roychoudhuri, B., Tsotsis, T.T., and Jessen, K., "An Experimental Investigation of Spontaneous Imbibition in Gas Shales," *J. Petr. Sci. Eng.*, 11, 87, 2013.
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Membranes for Separation and Purification of Hydrogen from Coal- and Biomass-Derived Syngas,” *J. Membrane Sci.*, 450, 81, 2014.

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98. Li, H., Qin, J., Tsotsis, T.T., and Sahimi, M., “Model-Based Production Optimization of a Landfill Gas System,” *AIChE J.*, 60, 2063, 2014.

99. Yu, J., Tan, M., Liu, P.K.T., Sahimi, M., and Tsotsis, T.T., “Hydrogen Production from Biomass-Derived Syngas Using a Catalytic Membrane Reactor Based Process,” *Ind. Eng. Chem. Res.*, 53, 819, 2014.

100. Yan, X., Tsotsis, T.T., and Sahimi, M., “Fabrication of Nanoporous Silicon Oxycarbide Materials using Layer Double Hydroxide as a Sacrificial Template”, *Microporous & Mesoporous Materials*, 190, 267, 2014.

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