

DIMITRIOS V. PAPAVALASSILIOU

PROFESSIONAL PREPARATION

Aristotle University of Thessaloniki, Greece
University of Illinois at Urbana-Champaign
University of Illinois at Urbana-Champaign

Chemical Engineering, Diploma, 1989
Chemical Engineering, M.S., 1993
Chemical Engineering, Ph.D., 1996

APPOINTMENTS

- The University of Oklahoma, School of Chemical Engineering and Materials Science, Sarkeys Energy Center-PoroMechanics Institute, Assistant Professor, 3/99-present
- Mobil Technology Company, Upstream Strategic Research Center, Senior Research Engineer, 6/98-2/99
- Mobil Technology Company, Upstream Strategic Research Center, Postdoctoral Research Associate, 9/96-6/98
- University of Illinois at Urbana-Champaign, Research and Teaching Assistant, 9/90-9/96
- Chemical Process Engineering Research Institute in Thessaloniki-Greece, Graduate Research Fellow, 10/89-7/90

PUBLICATIONS

Relevant to proposed research

1. Lao, H-W, Neeman, H.J., and D.V. Papavassiliou, "A pore network model for the calculation of non-Darcy flow coefficients in fluid flow through porous media," in press, *Chemical Engineering Communications*, 2004.
2. Mitrovic, B.M., and D.V. Papavassiliou, "Effects of a first-order chemical reaction on turbulent mass transfer," *Int. J. Heat Mass Transfer*, **47**(1), 43-61, 2004.
3. Papavassiliou, D.V, "Turbulent transport from continuous sources at the wall of a channel," *Int. J. Heat Mass Transfer*, **45**(17), 3571-3583, 2002.
4. Neeman, H.J., Lao, H-W., Simpson, D., and D.V. Papavassiliou, " Multiscale characterization of porous media properties for hydrocarbon reservoir simulation," in *Commercial Applications for High Performance Computing*, Howard Jay Siegel, editor, Proceedings of SPIE Vol. **4528**, 87-97, 2001.
5. Lao, H-W., Neeman, H.J. and D.V. Papavassiliou, "Stochastic prediction of pore media properties," *Computational Technologies for Fluid/Thermal/Chemical Systems with Industrial Applications*, PVP-Vol. **424-2**, 185-195, ASME, 2001.

Other selected publications

6. Mitrovic, B.M., Le, P.M., and D.V. Papavassiliou, "On the Prandtl or Schmidt number dependence of the turbulence heat or mass transfer coefficient," in press, *Chem. Eng. Sci.*, **59**(3), 543-555, 2004.
7. Mitrovic B.M., and D.V. Papavassiliou, "Transport properties for turbulent dispersion from wall sources," *AIChE J.*, **49**(5), 1095-1108, 2003.
8. Papavassiliou, D.V, "Scalar dispersion from an instantaneous line source at the wall of a turbulent channel for medium and high Prandtl number fluids," *Int. J. Heat and Fluid Flow*, **23**(2), 161-172, 2002.
9. Garanzha, V.A., Konshin, V.N., Lyons, S.L., Papavassiliou, D.V., and G. Qin, "Validation of non-Darcy well models using direct numerical simulation," in *Numerical Treatment of Multiphase Flows in Porous Media*, (Chen, Ewing & Chi editors), 156-169, Lecture Notes in Physics, **552**, Springer-Verlag, 2000.
10. Papavassiliou, D.V., and T.J. Hanratty, "Transport of a passive scalar in a turbulent channel flow", *Int. J. Heat Mass Transfer*, **40**(6), 1303-1311, 1997.

SYNERGISTIC ACTIVITIES

- Co-developer of the Lagrangian scalar tracking (LST) methodology for the simulation of turbulent heat/mass transport.
- One of about 70 invited participants to the National Research Council (NRC) workshop “Challenges for the Chemical Sciences in the 21st Century: Information & Communications,” convened by the Board on Chemical Sciences and Technology of the NRC. The goal of the workshop was to frame the national agenda for research in this area (October 31st - November 2nd, 2002).
- Advisory board member of the OU Center for Supercomputing Education and Research.
- Reviewer: Cooperative Grants Program of the U.S. Civilian Research and Development Foundation (CRDF)
National Science Foundation, Directorate of Engineering
Petroleum Research Fund, American Chemical Society
AICHE Journal, ASME Journal of Heat Transfer
Biotechnology Progress, Computers and Chemical Engineering
International Journal of Multiphase Flow
International Journal of Heat and Mass Transfer
Philosophical Transactions of the Royal Society of London
Polymer Science and Engineering, Numerical Heat Transfer
- Chair and co-chair in conference sessions organized by AIChE, ASME, ASEE, SIAM, USNCCM.

COLLABORATORS & OTHER AFFILIATIONS

(a) Collaborators (other than the ones appearing in the publication list)

Y. Abousleiman, B.P. Grady, J. Harwell, M. Johnson, L. Lee, G. Newman, K. Mullen, K. Parthasarathy, D.E. Resasco, M.M. Rieger, T.E. Scott (Oklahoma); M. Henderson (IBM); R. Braatz, R. Alkire, J. Alameda (Illinois at Urbana-Champaign)

(b) Advisors

Hanratty, T.J., M.S, and Ph.D. advisor, Department of Chemical Engineering, University of Illinois at Urbana-Champaign

(c) Students (total of 10)

Bojan Mitrovic (Emcore Corp); Venkat Ramasubramanian (University of Oklahoma); Isabella Lao (University of San Francisco); Thummala Nishitha, Eric Moore, Bharath Somayaji, Jeremy Jones, Phuong Le, Holly Krutka, Vishnu Marla (University of Oklahoma).

HONORS AND AWARDS

- Outstanding Student Advisor, College of Engineering, The University of Oklahoma, 2003.
- Outstanding paper award, 37th ASEE Midwest Section Conference and Workshops, 2002.
- Junior Faculty Research Award, University of Oklahoma, 2000.
- European Research Community On Flow Turbulence And Combustion (ERC OFTAC) Visitor Program, Invited visitor to the Institute for Process Engineering, Swiss Federal Institute of Technology (ETH), Zurich, May 29 - June 6 1999.
- University of Illinois, Cited in the List of Instructors Rated Excellent by their students, Fall 1991, Spring 1992, Spring 1993.
- University of Illinois, Fellow, 1990-91, 1991-92.
- Alexander S. Onassis Public Benefit Foundation, Fellowship, 1991-92.
- Bodosakis Foundation Fellowship, 1990-91.