

Robert E. Peck
Dean**Degrees:**

Ph.D. University of California, Irvine, 1976
M.S. University of California, Irvine, 1972
B.S. University of California, Berkeley, 1969

Academic Experience:

2007 - University of Massachusetts Dartmouth, Dean of the College of Engineering; Professor of Mechanical Engineering
2006 - 2007 Arizona State University, Professor, Dept. of Mechanical and Aerospace Engineering
2001 - 2006 Arizona State University, Chair and Professor, Dept. of Mechanical and Aerospace Engineering
1995 - 2001 Arizona State University, Professor and Associate Chair of Mechanical Engineering
1992 - 1995 Arizona State University, Professor
1992 - 1993 Technical University of Denmark, Visiting Professor
1984 - 1992 Arizona State University, Associate Professor
1982 - 1984 University of Kentucky, Associate Professor
1976 - 1982 University of Kentucky, Assistant Professor
1971 - 1976 University of California, Irvine, Teaching and Research Asst.

Industrial Experience:

1996 - SS Energy Environmental Intl., Inc., Consultant
1994 - 1996 Netherlands Energy Research Foundation (ECN), Consultant
1994 Motorola Inc., Consultant
1991 - 1993 Danish Gas Technology Center, Consultant
1991 Risø National Laboratory, Denmark, Visiting Scientist
1990 - 1991 Refractory Composites Inc., Consultant
1990 - 1992 General Pneumatics Corp., Consultant
1990 Motorola Inc., Consultant
1987 U.S. Dept. of Energy, Consultant
1986 - 1988 Alzeta Corp., Consultant
1986 Allison Gas Turbine Div.-GMC, Consultant
1980 - 1982 Spectron Development Laboratories Inc., Consultant
1979 General Dynamics/Convair Division, Consultant
1978 Brighton Engineering Co., Consultant
1975 - 1977 ANTS Associates, Consultant
1971 Dynamic Science, Engineer
1969 - 1971 McDonnell Douglas Astronautics Co., Engineer/Scientist

Awards and Honors:

SAE Teetor Award, 1977
Listed in American Men and Women of Science
Sigma Xi

Professional Activities:

Sponsored research: Over 20 grants funded by NSF, DOE, FAA, GRI, and others, 1977-07
The Combustion Institute, Member
American Society of Mechanical Engineers, Member
American Society for Engineering Education, Member
Reviewer for The Combustion Institute, ASME, Int. J. Ht. Mass Transf., Comb. Flame, Comb. Sci. Techn., Can. J. Chem. Eng., Fuel, Prog. Energy Comb. Sci., Nat'l. Science Foundn., Dept. of Energy, U. of Calif. Energy Inst., McGraw-Hill, Wiley, Brooks/Cole and Prentice-Hall

Professional Interests:

Teaching: Combustion, thermodynamics, heat transfer, air pollution
Research: Combustion processes, energy systems, air pollution control, engineering education

Principal Publications and Papers (1988 – present):

Nikjooy, M., So, R.M.C., and Peck, R.E., "Modelling of Jet- and Swirl-Stabilized Reacting Flows in Axisymmetric Combustors," *Combustion Science and Technology* **58**, 1988, 135-154.

- Sathe, S.B., Peck, R.E., and Tong, T.W., "A Numerical Analysis of Combustion and Heat Transfer in Porous Radiant Burners," *International Journal of Heat and Mass Transfer* **33**, 1990, 1331-1338.
- Sathe, S.B., Peck, R.E., and Tong, T.W., "Flame Stabilization and Multimode Heat Transfer in Porous Radiant Burners," *Combustion Science and Technology* **70**, 1990, 93-109.
- Tong, T.W., Sathe, S.B., and Peck, R.E., "Improving the Performance of Porous Radiant Burners Through Use of Sub-Micron Size Fibers," *International Journal of Heat and Mass Transfer* **33**, 1990, 1339-1346.
- Sathe, S.B., Kulkarni, M., Peck, R.E. and Tong, T.W., "An Experimental and Theoretical Study of Porous Radiant Burner Performance," *Twenty-third Symposium (International) on Combustion*, The Combustion Institute, Pittsburgh, 1990, 1011-1018.
- Kulkarni, M.R. and Peck, R.E., "Performance of Radiant Surface Burners," Proc. Joint Meeting of Western States-Canadian Sections of The Combustion Institute, Banff, Alberta, Canada, April 29-May 2, 1990, 98-101.
- Parsons, K.D., Bruner, A., Hirleman, E.D., and Peck, R.E., "Response Characteristics and Calibration Results for the Aerometrics Phase Doppler Analyzer," Proc. 4th Intl. Conf. Liquid Atomization & Spray Systems, Hartford, CT, May 21-23, 1990, 21-23.
- Peck, R.E., Glarborg, P., and Johnsson, J.E., "Kinetic Modeling of Fuel-Nitrogen Conversion in One-Dimensional, Pulverized-Coal Flames," *Combustion Science and Technology* **76**, 1991, 81-109.
- Bossard, J.A., Somashekara, M.B., Peck, R.E. and Hirleman, E.D., "Characterization of Simplex Atomizer Sprays in Axisymmetric, Swirling Combustor Flows," ILASS Europe 8th Annual Conf. Atomization & Spray in Process Industries, Koninklijke/Shell-Laboratorium, Amsterdam, Sept. 30-Oct. 2, 1992.
- Madsen, O.H., Andersen, M., Peck, R.E. and Kulkarni, M.R., "Infrared Flux Matching for Improved Radiant Heating," *Proc. of the International Gas Research Conference*, Vol. V, GRI, Chicago, 1992, 74-83.
- Bossard, J.A., Peck, R.E. and Schmidt, D.K., "An Extended Supersonic Combustion Model for the Dynamic Analysis of Hypersonic Vehicles," NASA-CR-192716, NASA, Washington, DC, 1993.
- Sørensen, L.H., Biede, O., and Peck, R.E., "An Experimental Study of High-Temperature, Oxidative Pulverized Coal Devolatilization", *Twenty-fifth Symposium (International) on Combustion*, The Combustion Institute, Pittsburgh, 1994, 475-483.
- Kulkarni, M.R. and Peck, R.E., "Predicting NO_x and CO Emissions from Radiant Surface Burners," *Proc. of Joint Meeting of Central and Western States Sections and Mexican National Section of The Combustion Institute and American Flame Research Committee*, 1995, 26-31.
- Trinh, C.M., Andersen, F.M.B., Peck, R.E. and Pabian, D.J., "Chemical Kinetic Modeling of a One-Dimensional Laminar Pulverized-Coal/Air Flame," *Proc. 3rd Asia-Pacific International Symposium on Combustion and Energy Utilization*, Vol. 2, 1995, 478-483.
- Kulkarni, M.R. and Peck, R.E., "Analysis of a Bilayered Porous Radiant Burner," *Numerical Heat Transfer Part A: Applications* **30**, 1996, 219-232.
- Bossard, J.A. and Peck, R.E., "Droplet Size Distribution Effects in Spray Combustion," *Twenty-sixth Symposium (International) on Combustion*, The Combustion Institute, Pittsburgh, 1996, 1671-1678.
- Pacheco, R. and Peck, R.E., "Non-Staggered Grid Boundary Fitted Coordinate Method for Liquid Film Flows," *Proc. 1st International Symposium on Computational Technologies for Fluid/Thermal/Chemical Systems with Industrial Applications*, ASME PVP Div., Vol. 377-1, 1998, 49-59.
- Pacheco, R. and Peck, R.E., "The Solution of Viscous Incompressible Free Surface Jet Flows Using Non-Staggered Boundary-Fitted Coordinate Methods," *Proc. 2nd International Symposium on Computational Technologies for Fluid/Thermal/Chemical Systems with Industrial Applications*, ASME PVP Div., Vol. 397-2, 1999, 89 - 98.
- Pacheco, R. and Peck, R.E., "Non-Staggered Grid Boundary Fitted Coordinate Method for Free Surface Flows," *Numerical Heat Transfer Part B: Fundamentals* **37**, 2000, 267-291.
- Wong, H. and Peck, R.E. "Experimental Evaluation of Air Cooling Electronics at High Altitudes," *ASME J. Electronic Packaging* **123**, 2001, 356-365.
- Engels G., Kim, Y. and Peck, R.E., "Investigation of a Quasi-Steady Liquid Crystal Technique for Film Cooling Heat Transfer," *Experimental Heat Transfer* **14**, 2001, 181-198.
- Singh, S. and Peck, R.E., "An Innovative Method for Reducing Gaseous Emissions from Power Turbine Combustors," Ch. 28 in *Advances in Chemical Propulsion*, Gabriel D. Roy (ed.), CRC Press, Boca Raton, 2002, 463-476.
- Colwell, J.D, Korb, T.M., and Peck, R.E., "Hot Surface Ignition of Jet-A Fuel by Conductive Deposits," *Proc. of the Combustion Institute* **29**, The Combustion Institute, Pittsburgh, 2002, 297-304.
- Pacheco, J., Rodic, T., Pacheco, A. and Peck, R.E., "Numerical Simulations of Heat Transfer Problems Using an Immersed Boundary Method on Non-staggered Grids," *Proc. 2004 ASME Intl. Mech. Engrg. Congress and Expo.*, IMECE2004-60433, 1-11.
- Pacheco, J.R., Pacheco-Vega, A., Rodic, T. and Peck, R.E., "Numerical Simulations of Heat Transfer and Fluid Flow Problems Using an Immersed-Boundary Finite-Volume Method on Non-Staggered Grids," *Numerical Heat Transfer, Part B* **47**, 2005, 1-24.
- Amano, R.S., Xie, J., Singh, S., and Peck, R.E., "Reduction of Gaseous Emissions from a Power Turbine Combustor", Paper no. HT2005-72749, *Proceedings of ASME: 2005 ASME Heat Transfer/Fluids Engineering Summer Conference*, July 17-22, San Francisco, CA.

Patents:

- Tong, T.W., Sathe, S.B., and Peck, R.E., Porous radiant burners having increased radiant output, U.S. Patent no. 4,977,111, December 11, 1990.

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