

# CURRICULUM VITAE OF SUKH S. SIDHU

Department of Mechanical & Aerospace Engineering  
Environmental Engineering Group  
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## a. Professional Preparation

University of Illinois-Chicago, Chemical Engineering, Ph.D., 1992  
Osmania University-India, Chemical Engineering, B.S., 1987

## b. Appointments

1992-Present	Distinguished Research Scientist, Environmental Engineering, and Associate Professor, Department of Mechanical and Aerospace Engineering, University of Dayton
1992	Postdoctoral Research Assistant, University of New Orleans
1987-1992	Research Assistant, University of Illinois-Chicago

## c. Selected Publications

1. M. S. Kahandawala, S. A. Corera, S. Williams, C. D. Campbell and S. S. Sidhu, "Investigation of kinetics of iso-octane ignition under scramjet conditions", *Int. J. Chem. Kinet.* 38, 194-201 (2006).
2. M. S. Kahandawala, S. A. Corera and S. S. Sidhu, "Impact of additives on Soot Yields at 20 bar – A Shock Tube Study", *Shock Wave, Proc. 25th International Shock tube and Shock Wave Symposium*, Paper No. 1085-2a, 636-644, (2005).
3. Sukh Sidhu, Brian Gullett, Richard Striebich, Joy Klosterman, Jesse Contreras, Michael DeVito, "Endocrine Disrupting Chemical Emissions From Combustion Sources", *Atmos. Environ.* 39, 801-811 (2005).
4. S. S. Sidhu, J. L. Graham, D. R. Ballal, and H. C. Mongia, "Investigation of Heptane Combustion at 50 ATM Using a Shock Tube", *AIAA* 2005-1447 (2005).
5. Moshan Kahandawala, John Graham and Sukh Sidhu, "Particulate Emission from Combustion of Diesel and Fischer-Tropsch Fuels: A Shock Tube Study", *Energy & Fuel* 18 (2), 289-295 (2004).
6. Moshan Kahandawala, John Graham and Sukh Sidhu, "Impact of Lubricating Oil on Particulates Formed during Combustion of Diesel Fuel", *Fuel*, 83, 1829-1835 (2004).
7. Campbell Carter, Skip Williams, Long Lee, Sukh Sidhu and John Graham, "A Technique for Study of NO Kinetics in Hydrocarbon-Air Mixtures", *AIAA* 2003-0703 (2003).
8. S.S. Sidhu, J.L. Graham, and R.C. Striebich, "Chemical Characterization of Particulate Emissions from Alternate Diesel Fuel Combustion," *Chemosphere*, 42, 499-506 (2001).
9. S. S. Sidhu, J. L. Graham, D.C. Kirk and L. Q. Maurice, "Investigation of Effect of Additives on Ignition Characteristics of Jet Fuels: JP-7, JP-8, and JP-10", *Shock Wave, Proc. 22<sup>nd</sup> International Shock tube and Shock Wave Symposium*, Paper No. 3810 (1999).
10. J. H. Kiefer, S. S. Sidhu, R. D. Kern, K. Xie, H. Chen, and L. B. Harding, "The Homogeneous Pyrolysis of Acetylene II: The High Temperature Radical Chain Mechanism." *Combustion Science and Technology*, 82, 101 (1992).

#### **d. Synergistic Activities**

Dr. Sidhu conducts and directs research in the area of pollutant formation in combustion and post-combustion zones. The main focus of this work is to gain an understanding of the role and contribution of gas phase and surface reactions to hazardous air pollutant emissions, with special emphasis on the role of particles/fly ash in pollutant formation. The research involves the modeling of pollutant formation processes and pollutant distribution between gas and particulate phases. In addition, Dr. Sidhu conducts and directs research in the area of pollutant emissions from vehicles burning alternate fuels. Research efforts are currently concentrated on formation of particulate and gaseous pollutants during combustion of alternate fuels, using a high-pressure, high-temperature reactor (Shock tube) to simulate processes that take place in the combustion chamber of engines burning alternate fuels. This also includes studying impact of fuel composition on pollutants emissions and characterizing combustion particles using various surface and analytical techniques.

Teaching Interests/Recent Courses Taught (U = undergraduate, G = graduate):

Environmental Impact of Combustion (G), Pollution Control Technologies(U,G), Fundamentals of Combustion (U,G), Formation and Control of Combustion Aerosols (G), Combustion Kinetics (G), Internal Combustion Engines (U,G)

Reviewer (Papers and Proposals) for:

National Science Foundation, Waste Management, Environmental Science and Technology, Chemosphere, Combustion Institute, Combustion and Flame, International Journal Of Chemical Kinetics, Journal of Physical Chemistry A, Combustion Science and Technology

#### **e. Collaborators & Other Affiliations**

(i) *Collaborators:*

Prof. Dieter Lenoir, GSF Munich, Germany; Prof. R. Fonts, Univ. of Alicante, Spain  
Dr. Giuseppe Mascolo, CNR, Bari, Italy; Prof. Angel Carbonell-Barracahina, Miguel Hernandez Universidad, Spain; Prof. Joseph Bozzelli, NJIT; Prof. Thomas Litzinger, Pennsylvania State University, Prof. Elmar Altwicker, RPI; Dr. Brian Gullett, US-EPA; Dr. Campbell Carter, AFRL, WPAFB; Dr. Philip H. Taylor, University of Dayton; Dr. Barry Dellinger, Louisiana State University; Dr. Skip Williams, AFRL, WPAFB; Dr. Kevin McNesby, ARL

(ii) *Other Affiliations:*

Graduate students in the last five years: David Cory Kirk, Phil Edwards, Nabil Kasti, Pulak Nath, Moshan Khandawala, Andres Fullana (exchange Ph.D. student, U. of Alicante), Abdulaziz El-Sinawi, Zasim Mazumdar, Hannah Nakka, Shehan Correra, Srinivas Kattragadda, Patanjali Varanasi, Natcha Limthanacom, Ignacio Aracil (exchange Ph.D. student, U. of Alicante), Rajesh Kondaveti, Himaker Ganti