

CURRICULUM VITAE
OF
MICHAEL JENNINGS
SENIOR ADVISOR, [ENVIROCOMP](http://www.envirocomp.com)
[CONSULTING, INC.](http://www.envirocomp.com)
EMERITUS PROFESSOR OF
CHEMICAL ENGINEERING, SAN
JOSE STATE UNIVERSITY



Email: mjennings@envirocomp.com
Michael.jennings@sjsu.edu

Phone: (408) 499-0685

Postal Address:
M. B. Jennings
198 South 13th Street
San Jose, CA 95112

EDUCATION AND TITLES

- *Doctoral Degree in Chemical Engineering*, University of New Mexico, Albuquerque, New Mexico (1981)
- *Master of Science in Engineering*, Southern Illinois University, Carbondale, Illinois, (1973)
- *Bachelor of Science in Chemical Engineering*, University of New Mexico, Albuquerque, New Mexico (1969)

PROFESSIONAL EXPERIENCE

- **Senior Advisor**, EnviroComp Consulting, Inc. (April 2003 – present)
www.envirocomp.com
- **Professor**, *College of Engineering BioMedical, Chemical & Materials Engineering Department*, San Jose State University; San Jose, California (1984 – 2015)
 - Director**, *College of Engineering Master of Science in Engineering Program*, San Jose State University; San Jose, California (2004 – 2008)
 - Chair**, *Chemical & Materials Engineering Department, College of Engineering*, San Jose State University; San Jose, California (1989-2000) and (2008 – 2009)
- **Project Engineer**, Kaiser Engineers, Inc., Oakland, California (1974 - 1984)
 - Research Engineer**, Occidental Research, Inc. (formerly Garrett R & D), La Verne, California (1973 - 1974)
- **Production Supervisor**, Monsanto, Inc; Sauget, Illinois, (1971 – 1973)
- **Start-Up Engineer**, Monsanto, Inc; Sauget, Illinois, (1970 – 1971)
- **Process Engineer**, Monsanto, Inc; Sauget, Illinois, (1969 – 1970)
- **Industrial Hygiene Technician (Internship)**, Los Alamos Scientific Laboratory, Los Alamos, New Mexico (1965 – 1966)

MEMBERSHIPS

- Member, American Institute of Chemical Engineers, (1965 – present).
 - Director Northern California (2004 – present)
 - Recipient of Northern California AIChE 1997 Professional Progress Award
 - Member, American Chemical Society, (1965 – present)
 - Member American Society of Engineering Educators, (1988 – present)
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SELECTED PUBLICATIONS

- Jennings, M., The Hybrid Cycle – A Unique Method for Production of Clean Fuels and Power Generation for a Coal Based Energy Center, International Coal Utilization Exhibition and Conference, November 1979
- Hempill, H. and Jennings, M. B., Offsites, Utilities and General Facilities for Coal Conversion Plants, International Energy Conversion Engineering Conference, San Francisco, 1984
- Sampson, M. J., Jennings, M. B., and Zsuttu, T. C., Storage and Handling of Hazardous Materials (Facility Design), 3 day short course October 1985
- Jennings, M. B., Roberts, D. L., and Zare, A. R., Conceptual Processes for Recovery of Argon with Membranes in an Air Separation Process, 1987 Summer National Meeting, American Institute of Chemical Engineers, Minneapolis, 1987
- Jennings, Michael B., Cryogenic Gas Processing: Current Technology and Future Applications, (invited lecture), Dow Gas Separations Symposium, Lafayette, CA, July 1991
- Jennings, Michael B., Mah, W. and Guinnane, V., Final Report for United Technologies Propellant Mixing Modeling Project, proprietary report, January 1992
- Jennings, Michael B., Rushforth, C. and Wickman, P., Final Report for Used Oil Characterization Project, California Integrated Waste Management Board Project Number IWM-C3124, June 1996
- Frattini, P. L., Su, T., Yengoyan, L. S., Jennings, M. B. and Millett, P. J., Molecular Weight Measurements of Polymeric Sulfonate Extractables from low cross-linked BWR Condensate Polishing Resins, VII International Conference of Water Chemistry of Nuclear Reactor Systems, Bournemouth, UK, October 1966
- Anagnos, T. and Jennings, M., Preparing an Assessment Plan at San Jose State University, American Society for Engineering Education Annual Meeting, Seattle, 1998
- Diaz, A. and Jennings, M., Environmental Health and Safety – An Industry-Driven 4 Year Degree Program, Project Number P116B981262, August 2002, Fund for the Improvement of Post-Secondary Education, Federal Department of Education
(<http://www.fipse.aed.org/grantshow.cfm?grantNumber=P116B981262>)

RELEVANT PROFESSIONAL ACTIVITY

Academic Instruction

Developed and teach graduate and undergraduate courses in Project Engineering, Thermodynamics, Separations Processes, Air Pollution Technology, Hazardous Waste Management, Transport Phenomena, Process Dynamics & Control, and Heat Transfer.

Academic Administration

Managed Chemical Engineering and Materials Engineering Departments offering complete BS and MS programs. Developed significant research component and recruited new faculty in the program. Helped initiate restructuring project to increase interdisciplinary skills of students, improve program quality and efficiency. Added areas of concentration to Chemical Engineering in Environmental Health & Safety Engineering, Biotechnology, and Semiconductor Processes. Managed multidisciplinary Master of Science in Engineering Program for the College of Engineering. This program includes on-campus and off-campus degree programs for a range of technical options

Academic Research

Completed applied and basic research in mixing of three phase, high solids concentration slurries, such as used for rocket propellant; process simulation; rheological characteristics of mixtures; hazardous wastes incineration; respirators for use by wildland fire fighters and food drying technology. Coordinated research projects for new faculty in the areas of plasma etching for electro-less plating and properties of solders applied to lead frames. Other projects include characterization of waste lubricating oils for reprocessing potential, removal of iron from power plant cooling water systems, development of processes for formed epoxy components, and control of corrosion in power plant cooling water systems. Currently have a patent pending for an emergency escape respirator system.

Consulting

Completed conceptual design of prototype for cereal production system. Evaluation of methods to optimize batch process for plasticizer production and design modifications to reduce process emissions. In coordination with client engineers, coordinated development of a process for recovery of glycerin used as a processing agent. Submitted technical reviews and depositions for litigation in several cases, including groundwater contamination, equipment failure and industrial exposure incidents.

Chemical Production Experience

Responsible for first line business and technical management of large volume production facilities for an intermediate chemical used for production of lube oil additives and herbicides. Required development of production and maintenance schedules, operating budgets, coordination with production research to meet product specifications and develop new product forms, assisting marketing, compliance with regulatory groups and maintaining contractual relationships with the union representatives and members. Assisted in start-up of new plasticizer production facility including technical revisions to the unit, shift supervision, development of analytical methods for products and by-products. Developed projects for optimization of energy consumption, utilization of raw materials and reduction of effluent streams from facilities.

Design & Construction

Responsible for commercial and technical administration of design and construction of an air separation plant used in the prototype, contemporary, commercial-scale coal Gasification plant for the US. Air Separation plant was the largest using a unique technology and included numerous international contracts. Worked as technical and commercial liaison for installation of a new coke oven by-products processing plant. Spent six months in Germany to coordinate design for the facility between German designers and US fabricators. Completed numerous technical and economic evaluations of new or revised technologies related to power production, energy conservation or production of metals and chemicals. Completed several reports used for preparation of Environmental Impact Statements.

Industrial Research Projects

Primary responsibility for design and implementation of pilot plant systems used to demonstrate new technology and obtain data required for design of larger scale units. Particular experience related to production of phosphoric acid, coal Gasification, coal liquefaction and processing of municipal solid wastes.

Graduate School Research

Developed model to test effect of agitation on change of phase heat transfer in viscous systems for MS thesis activity.

Developed model to correlate effects of temperature on transport properties of liquid mixtures for PhD Dissertation.