RAMON L. ESPINO
SENIOR PROCESS ENGINEER, SENIOR R&D ENGINEER, SENIOR PRODUCTION ENGINEER

EXPERIENCE AND KEY ACCOMPLISHMENTS

University of Virginia, Chemical Engineering. 1999 to Present
Research Professor/Adjunct Faculty
CHE 882 (2000), Halsey Visiting Professor (2001), ENGR 162 (2001, 2002 and 2003) Halsey Visiting Professor (2004), TMP 351(2004, 2005, 2006, 2007), CHE 561 (2006, 2007, 2008, 2009), CHE 5561 (2010, 2011)

Exxon Research and Engineering Co. 1993-1998
Director of Chemical Sciences Laboratory
Developed new Fuel Cell Processor Technology
Co-inventor of novel oil/gas production method
Managed basic R&D relevant to Exxon's Basic Chemicals, Intermediates and Polymer Business

Exxon Research and Engineering Co. 1984-1993
Manager of Technology Transfer
Lead the effort to convert novel exploratory concepts into commercial products/processes
Manager of Lubricants and Specialties
Responsible for the reformulation of petroleum products for Exxon affiliates
Manager of Marketing Technical Services
R&D support for the marketing of Esso products in Asia and Latin America

Exxon Production Research Co. 1980-1984
Manager of the Long Range Research Division
Staffed, organized and managed the Division responsible for step-out R&D in oil/gas exploration
Initiated research on new computer-based exploration technologies
Directed research on rock physics and chemistry and enhanced oil recovery

Exxon Research and Engineering Co. 1973-1980
Director Engineering Sciences Laboratory
Developed new catalysts for Hydroprocessing and Hydrodesulfurization
Co-inventor of new Tar Sands bitumen extraction process
Initiated and managed R&D in fluidization, thermochemistry, NOx reduction and Coal conversion

Chem Systems Inc. 1968-1973
Manager of Process Development
Lead team that developed the first commercial process to make maleic anhydride from butane
Co-inventor of the Liquid Phase Methanol Synthesis Process
Managed R&D relevant to Petrochemicals, Synthesis Gas Utilization

EDUCATION

BS Chemical Engineering, Louisiana State University, Magna Cum Laude 1964
SM Chemical Engineering, Massachusetts Institute of Technology 1966
ScD Chemical Engineering, Massachusetts Institute of Technology 1968

RESEARCH TOPICS: The selective conversion of hydrocarbons to hydrogen, new catalysts and reactors for the production of clean fuels from synthesis gas, fuel cell reaction engineering, flow through porous media and reservoir engineering.

PUBLICATIONS & PRESENTATIONS:

- The Reaction of Hydrogen Atoms with Solid Olefin Films., J. Chem. Phys. Vol. 53, P. 2381-87 (1970).
- On the Hydrogenation of Pyrolysis Liquids API Division of Refining, May 13, 1970.
- Maximizing Propylene Production from Butane Cracking Petroleum Refining Symposium Series, 161st National ACS Meeting, L.A., April 1, 1971.
- Maximizing Olefin Yields from Ethane and Propane Cracking Petroleum Division, ACS Boston Meeting, April 9, 1972.
- Cat Crack for Max Olefins, Hydrocarbon Processing, November 1972.
- Liquid Phase Methanation of Synthesis Gas, AIChE, November 1972.
- The Slurry Methanation Process, Proceedings of the Fourth Synthetic Pipeline Gas Symposium, October 1972.
- Mechanism and Kinetics of Sulfur Removal from Heterocyclic Sulfur Compounds, ACS Petroleum Chemistry Division Papers, Chicago Meting, August 1978.
- Hydrodesulfurization of Sulfur Heterocyclic Compounds--Reaction Mechanisms. Journal of Catalysis, Vol. 67, No. 2, February 1981.
- Hydrodesulfurization of Sulfur Heterocyclic Compounds--Kinetics of Dibenzothiophene, Journal of Catalysis, Vol. 67, No. 2, February 1981.
- A Challenge to Engineering Creativity, Chemical Engineering Process, July 1981.

- Problem Solving by Computer Simulation, Chemical Engineering Progress, August 1987.
- Encyclopedia of Science and Technology, John Wiley. (Ramon L. Espino wrote over 60 pages of the encyclopedia on Fuels and Lubricants, including gasoline, diesel, lubricant additives, friction, etc.).
- Fuel and Fuel Cell Reforming Options for Fuel Cell Vehicles, 30th ISATA Conference, Florence, Italy. Paper 97EL033.
- Gas to Liquids Technology Outlook . . . International Energy Agency Symposium, Paris, France, April 1998.
- Hydrocarbon Fuels for Future Automotive Engines, 216th American Chemical Society National Meeting, Boston, MA, August 23-27, 1998.
- .Aspects of Engineering Practice, Examining Values and Behaviors in Organizations, Journal of Chemical Engineering Education, Fall 2002, 316-319
- Thermal Sensitivity of Fuel Cells, Undergraduate Thesis, Margot Noordzij, April 2001
- Effect of copper-based catalysts on carbon monoxide poisoning of PEM fuel cells, Thesis, Nicholas Sifer, April 2001
- Improving fuel cell tolerance to carbon monoxide poisoning by using copper oxide to catalyze the water gas shift reaction, Thesis, Ronny Eisemann , April 2002

PATENTS & PATENT APPLICATIONS: In the field of hydrocarbon production, hydrocarbon conversion to clean fuels, synthesis gas conversion to alcohols, internal combustion engines, enhanced oil recovery, and fuel cell catalysts

OTHER ACTIVITIES: Active member of the American Chemical Society, American Institute of Chemical Engineers, former chair of the Awards Committee (AIChE), Universities Space Research Association, National Research Council Committees on Fossil Fuel Research, Mitigation of Greenhouse Gases and Prospective Benefits of DOE's Energy Efficiency and Fossil Energy R&D Programs. Board Member of Virginia's Coal and Energy Research Center.