



JAMIN CHEN, Ph.D., P.E.

SUMMARY

Has 35 years experience in all phases of Chemical Engineering from R&D, commercialization of new chemical manufacturing processes, process design engineering of commercial chemical plants, to start-up of newly constructed plants. Types of plants involved include petrochemicals, agricultural chemicals and pharmaceuticals.

PROFESSIONAL EXPERIENCE

LXDE Corporation **2003 - Present**
Monroe Township, New Jersey

Various Assignments

Kvaerner Process **1997 - 2002**
440 Route 22 East, Bridgewater, NJ 08807

Process Manager

I directed and was involved in various detail design engineering efforts for clients including Sunoco, Merck, and General Electric. I was also involved in various proposal efforts for new projects. In this capacity, I specified and purchased equipment, and supervised their installment.

Chemical Research & Licensing Company **1991 - 1997**
10100 Bay Area Boulevard, Pasadena, TX 77507-1853

Director, Technology Development

I directed the development of a new class of chemical reaction system (reactive mass transfer) where heat and mass transfer and chemical reaction take place simultaneously. For this chemical reaction system, I directed the following tasks:

- Pilot planting for developing new chemical production processes,
- Bench scale programs, theoretical analysis of the reaction system, and data correlation in support of the development of the new processes, and
- Scale up, process design, and start up of first-of-a-kind commercial units.

In this capacity, I performed the following functions:

- Collected and interpreted data from a variety of bench and pilot scale units
- Developed models
- Optimized and set the design basis for the new processes
- Communicated these results to others and oversaw the design of first-of-a-kind processes by them
- Participated in the start up of these process units.

This technology has been applied to the following with commercial success:

- Aromatic alkylation (ethylbenzene, cumene).
- Etherification (MTBE, ETBE, etc.).
- Selective hydrogenation (diolefines and acetylenes).

ARCO Chemical Co.
Newton Square, PA

1990 - 1991

Project Manager

I coordinated various chemical plant engineering projects with local contractors in the Far East.

ABB Lummus Global Inc.
1515 Broad Street, Bloomfield, NJ 07003

1979-1990

Process Design Manager, Chemicals

I carried out process design for many chemical plant projects. The following are some of the specific projects I was involved:

- Herbicides Arsenal and Scepter Plant for American Cyanamid Company
- Herbicide Prowl Plant for American Cyanamid Company.
- Ethylbenzene/Styrene Plant Revamp for Ulsan Petrochemical Corporation, Korea.
- Phenol Plant Revamp for Ertisa, Spain.
- Phenol Plant Revamp for Getty Oil Company.

I was also involved in the development of proprietary technologies. The following are some of the projects:

- Run length correlation for steam cracking heater for ethylene production from both gas and liquid feeds.
- Maleic Anhydride via fluid bed technology.
- Ethylene from Ethanol via fluid bed technology.
- High Purity Phenol.
- Ethylbenzene and Cumene via fixed bed zeolite technology
- Epichlorohydrin Process

The Heyward-Robinson Company
Church Street, New York City

1975 - 1979

Chief Engineer, Agricultural Chemicals

I was responsible for technology licensing and process engineering for agricultural chemicals. Specific projects involved are:

- Fungicide Terrazol Plant for Olin Chemical.
- Modown Herbicide Plant for Mobil Chemical.
- A herbicide and pesticide complex for Universal Coop.
- Ethylene Glycol Plant for Olin Chemicals.

The Lummus Company
Chu1515 Broad Street, Bloomfield, NJ 07003

1967 - 1975

Senior Process Engineer

I carried out process engineering and troubleshooting of chemical plant operation as well as development of new process technologies. Some of the specific projects involved are:

- Artificial Sweetener Aspartame Plant for G. D. Searle.
- Vitamin Plant for Hoffman-LaRoche.
- Two-Stage Steam Reforming - A pilot plant operation to demonstrate a new concept.
- Development of a new Direct Quench Process for steam cracking heaters in ethylene service.
- Development of oil firing for ethylene cracking heaters with a full-scale proto-type test unit.
- Troubleshooting of a Secondary Reformer for Pemex Ammonia Plant.
- Development of a procedure for decoking cracking heaters for ethylene production.
- Troubleshooting of ethylene plant operation, including Montedison Priolo plant, Abadan Petrochemical plant, Gulf Ponca City plant, and Mitsubishi Yokkaichi plant.

Ingersoll-Rand Research, Inc.
Princeton, NJ

1963 - 1967

R & D Project Engineer

I managed and participated in various research & development projects. Some of the specific projects involved are:

- Development of reverse osmosis membranes for novel applications including waste water treatment.
- Development of equipment to produce artificial snow for ski resorts.
- Development of liquid-solid two-phase pump.

The University of Michigan
Ann Arbor, Michigan

1958 - 1963

Research Assistant

Research subjects include

- Scale formation in boiling saline water (bench test and theoretical analysis), and
- Heat and mass transfer and bulk movement in rotary kiln (theoretical analysis).

Ph.D. thesis subject: "Pressure Drop in Vertical Pneumatic Transfer Lines."

Army, Republic of China (Taiwan)

1956 - 1958

Second Lieutenant, Ordnance Corp

After the ROTC basic and special training, I completed my tour of duty as a supervisor for an engine rebuilding plant.

ACADEMIC EXPERIENCE

Over the years, I taught as adjunct professor at various chemical engineering departments in the New York City area. They include:

- New York University (1973): Heat Transfer Operations (McAdams)
- Cooper's Union (1974): Mass Transfer Operations (Treybal)
- Manhattan College (1976 - 1982): Process Design, Heat Transfer Operations, Mass Transfer Operations, and Transport Phenomena.

TECHNICAL REPORTS AND PUBLICATIONS

I authored hundreds of internal technical reports for the organizations I worked. They were mostly company confidential materials. They include reports of

- Highly technical chemical engineering analysis
- Bench scale studies and pilot plant development
- Process design books for various projects I participated
- Process design procedures
- Chemical plant operating procedures

The following is a list of my patents and technical papers I published or presented.

1. Jamin Chen and Chuen Y. Yeh: "Conversion of heavy polyalkylaromatic compounds," U.S. Patent 6,013,848, January 11, 2000.
2. Jamin Chen: "Process for the Production of Alkyl Benzene," U.S. Patent 5,866,736, February 2, 1999.
3. L. Smith, Jamin Chen, F. M. Dautzenberg, and A. Sy: "A Greener Technology for Cumene," presented at the AIChE Meeting, San Francisco, November 1994.
4. Jamin Chen, "CDTECH Aromatic Alkylation Technologies," presented at Worldwide Solid Acid Process Conference, Houston, Texas, November 14-16, 1993.

5. A. Sy, L. Smith, Jamin Chen, and F. M. Dautzenberg: "Catalytic Distillation Route to Cumene," 1993 DeWitt Petrochemical Review, Houston, March 23-25, 1993.
6. Jamin Chen: "Dilute Ethylene Feeds to the CDTECH EB Process," presented at 1993 EB/SM Conference at Hyatt Regency Hotel, Maui, Hawaii, August 6, 1993.
7. L. A. Smith, Jr., Jamin Chen, Ron Woods, Eric Schwarz, "Operating Experience of Catalytic Distillation Units," presented at AIChE 1992 Sprint National Meeting, March 29~April 2, 1992.
8. Jamin Chen: "CDTECH EB Process with Dilute Ethylene Feeds," presented at 1991 EB/SM Conference at San Luis Hotel, Galveston, Texas, October 1991.
9. G. D. Suci, A. M. Khonsari, and Jamin Chen: "Phenol Purification," U.S. Patent 4,857,151, August 15, 1989.
10. A. M. Khonsari, Jamin Chen, G. D. Suci, W. B. Fisher, and L. Crescentini: "Production of high purity phenol by steam distillation," U.S. Patent 4,851,086, July 25, 1989.
11. Stylianos Sifniades, Allen A. Tunick and Jamin Chen: "Allied/Lummus Low Residue Phenol Technology," presented at AIChE Spring Meeting, February 1986.
12. Jamin Chen, A. M. Khonsari, and G. D. Suci: "Phenol Purification," U.S. Patent 4,504,364, March 12, 1985.
13. Jamin Chen and L. J. Paparella, "Pesticide Plant Process Engineering," presented at 84th National AIChE Meeting, February 1978.
14. Carl C. Gryte, Jamin Chen, V. Kevorkian, and Harry, P. Gregor: "Hydrophilic Interpolymer Membranes and Crosslinked Blends of Poly(vinylalcohol), Poly(styrene sodium sulfonate) and Poly(vinyl methyl ether-alt-maleic anhydride)," Journal of Applied Polymer Science, 1977.
15. Jamin Chen and J. L. York: "Solid Particle Velocity and Pressure Drop in Vertical Pneumatic Transport Lines," presented at Joint AIChE-VTG Meeting, Munich, Germany, 1974.
16. T. Wei and Jamin Chen: "Methanator for Coal Gasification," Chemical Engineering Progress, Technical Manual 58(1973).
17. Jamin Chen and M. J. Maddock: "Heaters for Ethylene Plants," Hydrocarbon Processing, May 1973.
18. Jamin Chen and Werner Vogel: "Fouling of Transfer Line Exchanger in Ethylene Services," presented at AIChE 74th National Meeting, New Orleans, March 1973.
19. Jamin Chen and V. Kevorkian: "Heat and Mass Transfer in Making Artificial Snow," Industrial & Engineering Chemistry, Process Design & Development, 10, 75(1971).
20. Jamin Chen and V. Kevorkian: "Mass Production of 300-Micron Water Droplets by Air-Water Two-Phase Nozzles," Industrial & Engineering Chemistry, Process Design & Development, 7, 586(1968).



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