

# KNUDSEN ASSOCIATES



**Dr. CHRISTIAN W. KNUDSEN, P.E.**

Dr. Knudsen is a 1961 graduate of Rice University and a 1969 graduate of M.I.T. with experience in the refining, petrochemical, gas processing, chemical process, synthetic fuels, electric power and marine industries. His knowledge and experience includes 51 years of process engineering design, economic analysis and cost estimating; project, program and executive management; plant operations and technical service; process research and development; environmental permitting and safety management; and business development, contract negotiation and marketing. Oil and gas experience includes onshore and offshore operations. Chemical experience includes the industrial, specialty and fine chemical areas with experience in both continuous and batch chemical operations. Synthetic fuels experience includes processing of coal, tar sands, oil shale and biomass. Power generation includes cogeneration from gas, oil and coal.

Dr. Knudsen's expertise includes conceptual process design and economic evaluation for new technology in the above areas. He built and operated a successful chemical process development company for 15 years that completed over \$20 million in bench- and pilot plant-based projects for government and industry. Many of these projects led to successful first-of-a-kind commercial plants. Along with process plant development, design and construction, Dr. Knudsen also has extensive knowledge of air and water effluent processing and permitting, hazardous facilities design to proper engineering codes, fire prevention, safety and building code regulations, ISO 9000 procedures for improved design and manufacturing operations, Responsible Care procedures for the chemical industry and Good Manufacturing Practice (cGMP) for the pharmaceutical industry.

In addition to his technical expertise, Dr. Knudsen has negotiated many contracts with U.S. and overseas private, public and governmental organizations and prepared numerous business and technical reports. He has authored over 25 technical papers and has been awarded eight U.S. patents, including the first two pertaining to lunar technology. Dr. Knudsen was named a Fellow of the American Institute of Chemical Engineers in 1989, a distinction held by approximately one percent of the AIChE membership.

Dr. Knudsen has dealt with many foreign corporations and government entities—in England, Scotland, Germany, France, Japan and South Africa. He has had contact with many U.S. corporate, university and government laboratories, including the national energy and nuclear laboratories and U.S. Department of Defense contract laboratories plus the NASA centers and laboratories. He has held cryptographic top-secret and nuclear top-secret government clearances while serving in the U.S. Navy in the Pacific and with the U.S. Department of Energy in Washington DC.

## **EDUCATION AND PROFESSIONAL ASSOCIATIONS**

B.A., B.S. – Chemical Engineering – Rice University 1960/1961

S.M. – Chemical Engineering – M.I.T. 1965

Sc.D. (Ph.D.) – Chemical Engineering – M.I.T. 1969

Registered Professional Engineer – Texas, Serial #36135 (1974)

Member – American Institute of Chemical Engineers (elected to Fellow '89 – ca. one percent of membership); American Chemical Society; and American Society of Mechanical Engineers.

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