

Resume of: HERBERT H. DeFRIEZ
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Abilities: Entrepreneur currently working as an investigator and expert witness performing forensic and corrosion investigations for the legal, insurance and manufacturing industries. Previously, was the owner/operator of two small engineering businesses that designed and manufactured equipment for the air pollution industry. Registered Professional Engineer in California (Corrosion CR462). Court-tested expert witness in corrosion, corrosion related failure, experimental reproduction of failure and air pollution testing. Principal investigator for product design defects, origin and cause of failures and design of engineering experiments. Forty five years' experience operating small businesses involved in source emission testing & permit processing; design, evaluation & permitting of air pollution control systems; industrial hygiene monitoring and solving engineering/forensic problems with analytical & chemical methods. Generalist-entrepreneur able to solve business/engineering problems in integrated fashion by combining inventiveness, cross-disciplined experience and sound scientific principles to logically determine cause of failure and create optimal solutions.

Experience, Sole Owner or Partner:

9/10-Now I-ENG-A®, Specialist in Corrosion
1254-3 Cravens Lane, Carpinteria, CA 93013.

Partner. Partnered with Suzanne DeFriez (ChE, UCSB 1998) to expand IDE into providing forensic corrosion services for the insurance industry through Investigative Engineers Association, Inc. Currently providing Professional Engineering services (CR462) as an expert witness in corrosion, corrosion related failure and design defect evaluation.

5/93-7/17 Innovative Design Engineering, Inc.
1254-3 Cravens Lane, Carpinteria, CA 93013.

Sole Owner. Marketed and sold air pollution electrochemical analyzers, miniature CEMS, probes, flow distribution panels and hot/wet pumping boxes as well as to one-of-a-kind specialty equipment. Provided OEM design and manufacturing services to medical gas analysis and air pollution testing companies. Provided engineering problem solving, legal investigations and forensic consulting services in emissions testing, permitting of control systems, corrosion & corrosion failure, origin and cause of failures and design of engineering experiments.

4/94-12/07 AIRx Testing
2472 Eastman Ave. #34, Ventura, CA 93003. (Ventura Office)
17331 Sharon Blvd, Madera, CA 93638 (Madera Office)

Senior Majority Partner. Purchased a source testing laboratory to create AIRx Testing, a California Air Resources Board certified Laboratory. Offers emissions testing and analysis, APCD permit processing, CEM system certification, RATA certification, toxics sampling and analysis and emission control equipment design and evaluation. Have tested in 20 states, Alaska, Hawaii and the US Virgin Islands.

6/90-4/93 CAE/Exemplar
A Division of Clean Air Engineering
1017 Mark Avenue, Carpinteria, CA 93013

Senior Technical Advisor/Partner. Exemplar Design Engineering, Inc. and Clean Air Engineering, Inc. merged with Mr. DeFriez as Senior Technical Advisor and minor stockholder. Primary function was to invent, patent, develop and produce products in the sampling and control field and to present papers on such inventions. Currently, one patent has been issued and five systems are in experimental evaluation. Designed, built and administered a half million dollar project for a computerized engine test stand to test large diesel engine turbochargers; project now successfully complete with no significant warranty repairs after nearly 4 years and 3500 complete turbocharger tests.

3/75-6/90 Exemplar Design Engineering, Inc.
4422 #D Catlin Circle, Carpinteria, CA 93013.

President. Designed, machined, assembled and marketed source emission sampling and continuous emission monitoring systems, including sampling probes, stack gas conditioners, flow distribution panels, loop dilution sampling systems, water intrusion monitors, and computer controlled sampling & data acquisition systems. Also provided consulting services in air pollution emission testing, evaluation and permitting of pollution control systems, legal investigations into failure, design of engineering experiments, industrial hygiene sampling and evaluation of hazards for OSHA compliance. Obtained California Professional Engineer license in Corrosion (CR462) and began providing legal investigative services for corrosion and corrosion related failures. In a secondary partnership, was the president of TRS Systems, Inc. - designed and built a total reduced sulfur analyzer system.

Experience, Employee Positions:

7/72-3/75 BTC Laboratories

1775 Callens Road, Venture, CA 93003.

Director of Environmental Division. Designed and set up laboratory for air and water pollution analysis. Received Certification from the California Department of Public Health for analysis of water and waste water. Offered emissions testing and analysis, APCD permit processing, permanent gas analysis, emission control equipment design and evaluation, certified waste water monitoring, complete water analysis (chemical), ASTM chemical testing, electroplating and anodizing solution analysis, gas-liquid chromatographic analysis, chemical quality control programs, research on and development of chemical processes and products, legal investigations into chemical and corrosion failure, and general analytical analysis.

9/71-6/72 RPC Company

1222 E. Grand Avenue, El Segundo, CA 90245.

Engineer. Designed and evaluated life support systems for marine microorganisms used for detection of chemical vapors. Evaluated vapor capture systems for efficiency and gas flow properties. Designed in-line non-absorbing gas humidification systems.

7/70-9/71 University of California Marine Science Institute

Santa Barbara, CA 93109.

Research Assistant. Studied and mapped a natural off-shore oil seep in Santa Barbara Channel. Collected undersea oil samples and mapped seep area both underwater and with aerial photographs. Developed chromatographic technique for fingerprinting seep oil and determining oil weathering characteristics. Designed, constructed and published paper on simple undersea communications chamber, (see below).

4/67-7/68 Shell Development Company

1400 53rd St., Emeryville, CA 94608.

Experimental Operations Engineer. Responsible for designing, operating and optimizing pilot plants and lab scale experimental processes. Acquired data for plant scale up and start up. Projects included 1) Chief engineer on crude oil/potash recovery pilot plant. Developed patent (noted below). 2) Production engineer for crude oil/sulfur slurry for pipeline transport project. 3) Engineer in charge of all analysis and small scale lab experiments for crude-oil-from-tar-sands extraction project. Supervised plant operators and laboratory assistants for all projects.

6/66-3/67 American Potash and Chemical Company

Trona, CA 93562.

Corrosion Engineer. Primary responsibility to inspect all corrosion damaged equipment and recommend corrective action - either changes in the chemical process or in materials of construction. Conducted laboratory experiments on metals plastics, and paints to determine suitability in various plant liquids and vapors

Military Service

7/68-7/70 United States Public Health Service

P.O. Box 8137, Salt Lake City, UT 84108.

Senior Assistant Sanitary Engineer (Captain). Designed & tested new equipment and evaluated existing detection & control equipment for radon gas in underground mines.

Education Bachelor of Science Degree in Chemical Engineering, 1966, University of California, Berkeley. Special emphasis in instrumentation and gas-liquid chromatography.
Corrosion Engineering, two week intensive short course at Ohio State University.
Industrial Hygiene Engineering, two week course by U.S.P.H.S, Cincinnati, Ohio.

Licenses Professional Engineer, State of California (Corrosion CR462).
Private Pilot, Single Engine Land & Instrument; License # 171642

Patents "Method for Determining the Purity of Recovered Silvite." U.S. Patent No. 3,631,246. Inventor: DeFriez, Herbert H.
"Gas Monitor" U.S. Patent No. 5,187,972. Inventor: DeFriez, Herbert H
"Insitu Inertial Particulate Separation System" U.S Application No. 20050241416. Inventor: DeFriez, Herbert H.

Papers DeFriez, Herbert H. and Mikolaj, Paul G. "Two Man Communications Air-Bubble Chamber", Marine Technology Society Journal, V, Pg. 14-16, 1971.
DeFriez, Herbert H.; Whitt, Terence A. and Short, Jack W., "A New Total Reduced Sulfur Emission Monitoring System", Southern Pulp & Paper, April 1985.
Whitt Terence A.; DeFriez, Herbert H. and Collier, Steven, "Laboratory and Field Evaluations of the TRS Systems, Inc. TRS-2000 Total Reduced Sulfur CEM", Continuous Emission Monitoring, James A Jahnke, editor, APCA, October 1985.
Gordon, C.L.; DeFriez, H.H. and Froberg, W.R., "Laboratory Evaluation of a Test Method for Continuous Moisture Determination", Measurement of Toxic and Related Air Pollutants conference May 6-10, 1991, AWMA.
Sherer, M.; Hollingsworth, C. and DeFriez, H.H., "Experiences Conducting Organic Compound Sampling in Gas Streams", Measurement of Toxic and Related Air Pollutants conference May 6-10, 1991, AWMA.
DeFriez, H.H.; Gordon, C.L. "Beta Testing Results Using Water and Condensable Hydrocarbons for a New Volumetric Difference Instrument System", Air and Waste Management Association Conference, June, 1992.
DeFriez, H.H.; Gordon, C.L., "Experimental and Field Testing Results from a New Concept Continuous Stack Gas Moisture Monitor", Continuous Emission Monitoring conference Nov. 9-11, 1992, AWMA.

Member Member, National Association of Corrosion Engineers
Member, Air & Waste Management Association
Member, Santa Barbara Printmakers
Member, Burning Man photographic documentation team, 2008
Member, Aircraft Owners and Pilots Association