

RICHARD A. SCHMIDT, PH.D.
Biosketch



EDUCATION:

Ph.D., Applied Mechanics, Lehigh University, 1972
M.S., Applied Mechanics, Lehigh University, 1970
B.S., Engineering Mechanics, Lehigh University, 1969

QUALIFICATIONS:

Dr. Schmidt has over 30 years of engineering research and development experience and a broad technical background in applied mechanics and materials science. His technical endeavors include analytical, laboratory, and field work in fracture mechanics, failure analysis, stress analysis, instrumentation, mechanical behavior of piping, oil and gas well stimulation, explosives, propellants, and rock mechanics.

EXPERIENCE:

1992 to Present: J INTEGRAL ENGINEERING, INC., West Linn, OR

- President and Consulting Engineer
 - Performs oil and gas well stimulations using a new high energy gas fracturing technique known as the GasGun™.
 - Conducts failure analysis, stress analysis, mechanical testing, and fracture mechanics investigations for manufacturers, pipeline companies, attorneys, and research and development firms.
 - Conducts corporate seminars on The Art of Project Management™ as a member of Business Management Consultants.

1983 to 1992: BATTELLE MEMORIAL INSTITUTE, Columbus, OH

- Director, Piping Integrity Programs
 - Managed \$6M international group program investigating integrity of nuclear piping under earthquake loading.
 - Directed marketing; sales of \$4M/year.
- Manager, Fracture Group
 - Managed fracture mechanics team of fifteen.
 - Conducted failure analysis investigations.
- General Manager, Petroleum Technology Center, Houston, TX
 - Directed staff of twenty five, conducting mechanics research for the oil and gas industry.
 - Designed servo-controlled system for cyclic pressure testing of fiberglass pipe.

1982 to 1983: TERRA TEK INTERNATIONAL, Salt Lake City, UT

- Manager, Applied Geomechanics
 - Conducted research on hydraulic fracturing and high energy gas fracturing.
 - Developed new research initiatives in sea ice mechanics.
 - Taught short course on rock mechanics.

1981 to 1982: TPL, INC., Albuquerque, NM

- Vice President, Technology Development
 - Founded company with two partners and six employees.
 - Commercialized high energy gas fracturing concept.

1972 to 1981: SANDIA NATIONAL LABORATORIES, Albuquerque, NM

- Supervisor, Geotechnical Engineering Division
 - Managed division with ten staff and \$2M annual budget.
 - Directed programs in offshore instrumentation, coal mine subsidence, and Arctic oil and gas technology.
 - Initiated geotechnical scale modeling research on country's largest centrifuge.
- Member of Technical Staff
 - Led well stimulation project that investigated the use of explosives and propellants for fracturing boreholes drilled from tunnels at Nevada Test Site.
 - Conducted rock mechanics research on hydraulic fracturing, oil shale retorting, and basic fracture.
 - Developed state-of-the-art rock mechanics laboratory.

1970 to 1972: LEHIGH UNIVERSITY, Bethlehem, PA

- Instructor
 - Taught undergraduate courses on Statics, Dynamics, Materials Testing Laboratory, and Mechanics of Materials.

PROFESSIONAL AFFILIATIONS:

- Member of American Society of Mechanical Engineers, American Society for Metals, and American Society for Testing and Materials
- Reviewer for Applied Mechanics Reviews (8 years)
- Invited lecturer at Gordon Research Conference and International Center for Mechanical Sciences, Udine, Italy
- Chairman of sessions at U.S. Symposium on Rock Mechanics

PUBLICATIONS:

Dr. Schmidt has authored over fifty technical publications including many refereed papers and book chapters. Papers span disciplines of fracture mechanics and failure analysis (metals, polymers, ceramics, composites, and rock), piping integrity, rock mechanics, hydraulic fracturing, high energy gas fracturing, explosives, and subsidence. Examples of his work related to GasGun well stimulations can be found in the group called “Fracturing Wells with Explosives and Propellants”.