



4D Imaging

David Rondinone, Ph.D., P.E.

Curriculum Vitae

Areas of Specialization

Failure Analysis and Design of Structures, Industrial Equipment and Consumer Products: mechanical- electrical systems; turbines and reciprocating engines; automotive and aircraft components; offshore platforms and drilling equipment, pressure vessels/piping/containers, blowout and breakaway devices, heat exchangers and combustion analysis. Testing and mathematical analysis of hydraulic systems, fire causation and spread, explosion causation and prevention, structural dynamics, electronic control systems, material behavior, heat transfer and structure/fluid interaction are specialties.

Background and Professional Experience

January 04 – Present, 4D Imaging, Inc.

Vice President of Engineering, responsibilities include oversight, management, and development of three-dimensional scanning devices and services. The devices developed include scanners for coke drums and refinery piping systems, corrosion inspection, microscopic inspection and evaluation, small to large mechanical component inspection and evaluation, and scene documentation. Services provided include mechanical and thermal stress analysis, component failure and life assessment, finite element analysis, and mechanical and scene documentation and evaluation.

August 93 – Present, Berkeley Engineering and Research, Inc.

Position Description: Mechanical Engineer, responsibilities include design and failure analysis, engineering research, Finite Element Analysis, Accident Reconstruction and Crashworthiness, and Mechanical Testing. Failure analysis work has varied from failure of bolts and bolted connections to dynamic stability of scissor lifts and excavators to mechanical failure of hydraulic system components to mechanical behavior of industrial equipment. Research work has included detailed studies of the flange stress response, creep behavior of longitudinally welded pipes at high temperature, design of structural supports for a cryogenic superconducting MRI machine, design review of medical implants, dynamic

analysis of multistory manufacturing facilities, and frequency analysis of silicon wafer fabrication components. Finite element analysis experience has ranged from simple two dimensional linear elastic analysis of pressure vessels to complex three dimensional nonlinear analysis of a bolted engine connecting rod and full contact dynamic analyses of crane clutch components.

August 96-December 96, Lecturer, Mechanical Engineering, Department, U.C. Berkeley

Position Description: Lecturer teaching the fundamentals of mechanical behavior of materials, course ME-102A. Responsibilities include preparing and giving lectures, homework, exams, and helping students both on a group basis and one-on-one. Course material includes elastic and plastic deformation of materials (metals, polymers, composites, and ceramics), fatigue and fracture of materials, and creep and visco-elastic behavior.

Graduate Teaching Assistant, Mechanical Engineering Department, U.C. Berkeley
August 95 - May 96, August 97 - December 97, January 99 - May 2000

Position Description: Teaching Assistant for Mechanical Engineering, Fracture, Material Behavior, and Polymer courses ME-223, ME-224, and ME-225/MSE 212. Responsibilities include assisting students either on a one-on-one basis or in small groups, and preparing and leading discussion sections. Course material includes design and failure analysis, behavior of materials, fatigue and fracture theory, and structure/property relationships for polymers.

Graduate Research Assistant, Mechanical Engineering Department, U.C. Berkeley
July 94 - May 2002

Position Description: Research assistant for Prof. Lisa Pruitt, performing experimental fatigue testing of engineering polymers, primarily polycarbonate and ultra-high-molecular-weight-polyethylene. This research has included detailed studies of the fatigue behavior of engineering polymers under various fatigue stress loadings and component geometries.

Education

Ph.D. in Mechanical Engineering at U.C. Berkeley

M.S. in Mechanical Engineering from U.C. Berkeley

B.S. in Engineering Physics and B.A. in Astrophysics from U.C. Berkeley

Publications

L. Pruitt and D. Rondinone, "The Effect of Specimen Thickness and Stress Ratio on the Fatigue Behavior of Polycarbonate", *Polymer Engineering and Science*, Mid-May 1996, Vol. 36, No. 9, pp1300-1305.

Berkeley Engineering And Research, Inc. ☐ Phone 510-549-3300 ☐ Fax 510-549-3395
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Contributing Author for API 579, Recommended Practice for Fitness-For-Service, Section 8: Assessment of Gouges, Scores, and Grooves, and Section 10: Assessment of Weld Misalignment, Out-of-Roundness, Bulges, and Dents.

Technical Capabilities

Finite element analysis, computer programming (Visual Basic, Fortran, Pascal, BASIC, C++/C# Windows/Windows95/98/2000/NT/XP/Vista/7 software, etc), network administration, accident reconstruction, automotive repair, mechanical testing, and computer based data acquisition.

Professional Affiliations

Registered Mechanical Engineer, State of California