Richard M. Christensen
Brief Biography

Affiliations

Professor Research Emeritus
Aeronautics and Astronautics Department
Stanford University
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Senior Scientist Retired
Materials Science and Technology Division
Lawrence Livermore National Laboratory

Education

B. S. Civil Engineering, University of Utah, 1955
M. Eng. Engineering Mechanics, Yale University, 1956
D. Eng. Engineering Mechanics, Yale University, 1961

Activities and Research

Richard Christensen has over a long career worked in and held responsible positions in

Industry:
- General Dynamics
- Space Technology Laboratories
- Shell Development

National Laboratories:
- Lawrence Livermore National Laboratory

Universities:
- U. C. Berkeley, U. C. Davis
- Washington University
- Stanford University

He has always been active in professional affairs and has held several leadership positions in professional societies. His technical responsibilities and research interests have been in the mechanics of materials for solids, structures and non-Newtonian fluids. He holds four patents, has written two books and 100 archive journal papers (nearly all single authored). These are on the following and related topics: properties of polymers (viscoelasticity),

composite materials, wave effects in heterogeneous materials, low density materials (extreme porosity), kinetic crack growth, life prediction and durability, failure criteria for isotropic and anisotropic solids.

Honors and Awards

National Academy of Engineering, 1987
Worcester Reed Warner Gold Medal, ASME, 1988
William Prager Medal, Soc. Engr. Sci., 1988
Honorary Member, ASME, 1992
Nadai Medal, ASME, 2006
Fellow of several societies

Books and Recent Papers

Theory of Viscoelasticity, Dover (2003).

Mechanics of Composite Materials, Dover (2005).

"Yield Functions and Plastic Potentials for BCC Metals and Possibly Other Materials," Journal of Mechanics of Materials and Structures, Vol. 1, pp. 195-212 (2006).

"Deterministic and Probabilistic Lifetimes From Kinetic Crack Growth – Generalized Forms," (with Y. Miyano) International Journal of Fracture, Vol. 143, pp. 35-39 (2007).

"A Comprehensive Theory of Yielding and Failure for Isotropic Materials," Journal of Engineering Materials and Technology, Vol. 129, pp. 173-181 (2007).

"Observations on the Determination of Yield Stress," Acta Mechanica, Vol. 196, pp. 239-244 (2008).

"A Physically Based Cumulative Damage Formalism," International Journal of Fatigue, Vol. 30, pp. 595-602 (2008).

Website: www.FailureCriteria.com

Critical evaluations are provided for the materials yield and failure criteria considered to be of physical relevance and usefulness.