CONSULTING ENGINEER **DEREK B. ZAHL, Ph.D., P.E.**

Engineering Design & Testing Corp.
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EDUCATION:

1988 B.S., Mechanical Engineering (with honors) University of California, Santa Barbara
1990 M.S., Mechanical Engineering, University of California, Santa Barbara
1993 Ph.D., Mechanical Engineering, University of California, Santa Barbara
Major fields of study: Solid Mechanics, Dynamics, Material Science

EXPERIENCE:

2000 to present **Engineering Design & Testing Corp., Santa Rosa, California**

Failure analysis of machinery and components, material science evaluation, scope of damage and cost of repair evaluation, fire cause and origin analysis, cause of water damage, accident reconstruction, and vehicle system evaluation.

1994 to 2000 **DBZahl, Ph.D., Santa Rosa, California**

Investigation into the sequence of events and cause of vehicle accidents, pedestrian accidents, and product/component failures.

1988 to 1992 **JKS Associates, Santa Rosa, California**

Accident site surveys, literature searches, velocity change calculations, stress-strain calculations as related to product/component failure, photography, and construction of exemplar models.

1988 to 1992 **R. S. Hickman, Santa Barbara, California**

Accident site surveys, literature searches, velocity change calculations, stress-strain calculations as related to product/component failure, photography, and construction of exemplar models.

1995 to 2000 **Optical Engineering, Inc., Santa Rosa, California**

Research and development of high power CO_2 lasers and laser systems. Mechanical, thermal, magnetic, and optical design and analysis of components operating under vacuum and in the presence of ionized gases. Management of manpower and other resources in cooperation with other engineering and production requirements.

1994 **Sonoma State University, Cotati, California**

Organized and taught algebra and physics courses in the pre-college program.

1992 to 1994 **Max-Planck-Institute, Stuttgart, Germany**

Numerical analyses on the mechanical behavior of advanced composite materials. Publication and presentation of technical papers.

PROFESSIONAL REGISTRATIONS:

Registered Professional Engineer: California (#M30339)
Registered Professional Engineer: Arizona (#36357)
Registered Professional Engineer: Oregon (#66937PE)
Registered Professional Engineer: Washington (#37740)
Registered Professional Engineer: New Mexico (#18560)
Registered Professional Engineer: Hawaii (#14917)
Registered Professional Engineer: Alaska (#ME14790)
Registered Professional Engineer: Texas (#120978)
National Council of Examiners for Engineering and Surveying (Record #19714)
International Registry of Professional Engineers (Record IR159)

PROFESSIONAL ORGANIZATIONS:

-National Society of Professional Engineers
-American Society of Mechanical Engineers
-American Society for Metals

PUBLICATIONS:

[1] D.B. Zahl and R.M. McMeeking, "The Influence of Residual Stress on the Yielding of Metal Matrix Composites", *Acta Metallurgica,* V39 N6:1117 (1991)

[2] G. Bao, J.W. Hutchinson, R.M. McMeeking, and D.B. Zahl "Plastic Flow of Composite Materials", Topics in Plasticity, anniversary volume in honor of E.H.Lee, (Ed. W.H. Yang), AM Press, Ann Arbor, pp123-136 (1991)

[3] S.M. Pickard, S. Schmauder, D.B. Zahl, J. Yang, C. Cady and A.G. Evans, "The Flow Strength of Quenched Al-SiC Composites", *Acta Metallurgica,* 40 N11:3113 (1991)

[4] D.B. Zahl, S. Schmauder, and R.M. McMeeking, "Elastic Behavior of Discontinuously Reinforced Metal Matrix Composites", *Zeitschrift für Metallkunde,* V84 N11:802 (1993)

[5] D.B. Zahl, S. Schmauder, and R.M. McMeeking, "Mechanical Behavior of Residually Stressed Composites with Ductile and Brittle Constituents", *Modelling and Simulation in Material Science and Engineering,* V1 N3:249 (1993)

[6] D.B. Zahl and R.M. McMeeking, "The Effect of Interfacial Properties on the Strength of Discontinuous Reinforced Metal Matrix Composites", *Mechanics of Composite Materials and Structures,* V1 31 (1994)

[7] D.B. Zahl and R.M. McMeeking, "Three Dimensional Strengthening of Short Fiber Reinforced Metal Matrix Composites"

[8] D.B. Zahl, "The Effect of Interfacial Sliding on the Strength of Metal Matrix Composites", *Computational Material Science,* V1 N3:249 (1992)

[9] D.B. Zahl, S. Schmauder, and R.M. McMeeking, "Transverse Strength of Continuous Fiber Metal Matrix Composites", *Computational Material Science,* V3 293 (1994)

[10] D.B. Zahl and R.M. McMeeking, "Transverse Strength of Metal Matrix Composites Reinforced with Strongly Bonded Continuous Fibers in Regular Arrangements", *Acta Metallurgica,* V42 N9:2983 (1994)