

TAREK ISMAIL ZOHDI

Department of Mechanical Engineering
6117 Etcheverry Hall
University of California
Berkeley, CA 94720-1740
Phn: (510)-642-9172, Fax: (510)-642-5599
Email: zohdi@newton.berkeley.edu

PERSONAL BACKGROUND

Place of Birth Lawrence, Kansas, USA.

Personal Elementary, primary and secondary education in Baton Rouge, Louisiana, USA.

EDUCATION

2002 **Habilitation in Mechanics**, Gottfried Wilhelm Leibniz Universität Hannover, Germany.
Habilitation Mentor: Professor P. Wriggers.

Habilitation Thesis: *Micro-macro modeling, computational testing and design of advanced materials.*

1997 **Ph. D. in Computational and Applied Mathematics**, The University of Texas at Austin.

Ph. D. Advisor: Professor J. T. Oden.

Ph. D. Thesis: *Analysis and adaptive modeling of highly heterogeneous elastic structures.*

1991 **Master of Science in Mechanical Engineering**, Louisiana State University.

1989 **Bachelor of Science in Mechanical Engineering**, Louisiana State University.

POST GRADUATE PROFESSIONAL APPOINTMENTS

7/2009-present **Professor**, Dept. of Mech. Eng., University of California, Berkeley.

7/2009-present **Vice-Chair for Instruction**, Dept. of Mech. Eng., University of California, Berkeley.

7/2008-present **Chair of the Engineering Science Program**, University of California, Berkeley.

7/2008-11/2008 **Acting Associate Dean for the Interim Executive Committee of the Engineering Science Program**. University of California, Berkeley.

9/2006-present **Adjunct Scientist**, Children's Hospital Oakland Research Institute (CHORI)

7/2004-6/2009 **Associate Professor**, Dept. of Mech. Eng., University of California, Berkeley.

7/2001-6/2004 **Assistant Professor**, Dept. of Mech. Eng., University of California, Berkeley.

12/1998-6/2001 **Lecturer (C2)**, Institut für Baumechanik und Numerische Mechanik, Leibniz Universität Hannover.

5/1997-12/1998 **Post-doctoral Researcher**, Institut für Mechanik, Technische Universität Darmstadt

INTERNATIONAL SCIENTIFIC AWARDS

- 2009 **Fellow of the United States Association for Computational Mechanics.** The Fellow Award recognizes individuals for contributions to computational mechanics. The Fellow Award was presented at the United States National Congress of Computational Mechanics in Columbus, Ohio, 2009.
- 2008 **Fellow of the International Association for Computational Mechanics.** The Fellow Award recognizes individuals with a distinguished record of research, accomplishment and publication in areas of computational mechanics. The Fellow Award was presented at the World Congress of Computational Mechanics in Venice, Italy in 2008.
- 2003 **Junior Achievement Award of the American Academy of Mechanics.** The award is given once a year, to one post-graduate researcher, to recognize outstanding research during the first decade of a professional career. The award was presented at a ceremony in Washington D. C. during the annual ASME Winter Conference.
- 2002 **Best Paper of the Year 2001.** Awarded in London at the Lord's Cricket Ground by the Literati Club for *Modeling and simulation of the decohesion of particulate aggregates in a binding matrix* (Co-author: P. Wriggers). Journal: *Engineering Computations*.
- 2000 **The Zienkiewicz Prize and Medal.** The prize and medal are awarded once every two years, to one post-graduate researcher under the age of 35, by The Institution of Civil Engineers in London, to commemorate the work of Professor O. C. Zienkiewicz, for research which contributes most to the field of numerical methods in engineering.

OTHER AWARDS

- 2008 **Excellence in Teaching Award, Pi Tau Sigma, The University of California (Berkeley) Mechanical Engineering Honor Society.** This is given to one instructor that has shown dedication and support for student learning.
- 1994-1997 **University of Texas Computational and Applied Mathematics Fellowship.** The CAM Fellowship is a full scholarship awarded to recognize achievement and commitment to computational and applied mathematics.
- 1992 **Southwest AIAA Best Student Technical Lecture Award.** The award is given once every year as a result of a southwest regional oral paper presentation competition on master's level research problems.

PROFESSIONAL SERVICE

Service as an editor or reviewer for scholarly journals or other publications:

- (2009-present) **Appointed:** Editorial Advisory Board of *Computers and Structures*.
- (2008-present) **Appointed:** Editor of the journal *Computational Mechanics*
- (2008-present) **Appointed:** Editorial Advisory Board of *The International Journal of Numerical Methods in Engineering*.

- (2007-present) **Appointed:** Editorial Advisory Board of *The International Journal of Engineering Science*.
- (2007) **Appointed:** Guest Editor (with J. LLorca and H. Böhm) of a special issue of the journal *Modelling and simulation in materials science and engineering* on complex materials.
- (2007-present) **Appointed:** Editorial Advisory Board of the journal *Computational Mechanics*
- (2005-present) **Appointed:** Editorial Advisory Board of *Computer Methods in Applied Mechanics and Engineering*
- (2005) **Appointed:** Guest Editor of a special issue of the journal *Mechanics of Materials* on disordered media
- (2002-present) **Appointed:** Editorial Advisory Board of *The Journal of Multiscale Computational Engineering*
- **Journal reviewer:** Computer Methods in Applied Mechanics and Engineering, The International Journal of Numerical Methods in Engineering, Communications in Numerical Methods in Engineering, Zeitschrift für Angewandte Mathematik und Physik, The Philosophical Transactions of the Royal Society, The Proceedings of the Royal Society, The International Journal of Engineering Science, ASME Journal of Applied Mechanics, ASCE Journal of Engineering Mechanics, Computers and Structures, The Journal of Multiscale Computational Engineering, The Journal of Elasticity, Computational Mechanics, The International Journal of Heat and Mass Transfer, The International Journal of Fracture, Mechanics of Cohesive-frictional Materials, Continuum Mechanics and Thermodynamics, Journal of Biomechanics, ASME Journal of Biomechanics, ASME Journal of Fluids Engineering, Geophysics, Modelling and Simulation in Materials Science and Engineering, Proceedings of the Institution of Mechanical Engineers, Part H, Journal of Engineering in Medicine, Annals of Biomedical Engineering, Cambridge University Press Books, Springer Verlag Books

Service to scholarly or professional societies:

- (2009-2015) **Elected:** Member of the General Council of the International Association of Computational Mechanics (IACM)
- (2008-present) **Elected:** Secretary/Treasurer of the United States Association for Computational Mechanics. This automatically rotates to Vice-President in 2010 and President in 2012.
- (2006-2010) **Elected:** Executive Council of the United States Association for Computational Mechanics. Eight people are elected nation-wide every four years.
- (2009-present) **Appointed:** Scientific Organizing Committee The European Congress on Computational Methods in Applied Sciences and Engineering, Vienna, September 10-14, 2012.

- (2009-present) **Appointed:** Conference Editorial Board for The Tenth International Conference on Computational Structures Technology, September 14-17, 2010, Valencia, Spain.
- (2008-present) **Appointed:** International Advisory Board of ECCM 2010, Fourth European Conference on Computational Mechanics (Solids, Structures and Coupled Problems in Engineering), Paris, May 16-21, 2010.
- (2007-2009) **Appointed:** USACM-Scientific Program Committee for the Tenth United States National Conference on Computational Mechanics (USNCCM) in Columbus, Ohio
- (2004-2005) **Appointed:** USACM-Scientific Program Committee for the Eighth United States National Conference on Computational Mechanics (USNCCM) in Austin, Texas
- (2002-2004) **Appointed:** NPACI/NSF-National Partnership for Advanced Computing Infrastructure Allocations Committee
- **Recent proposal reviewer for:** European Research Council (2007), National Science Foundation (2008), Army Research Office (2008, 2009), Air Force of Scientific Research (2008)

Conference Organization:

- (2010) **Organizer (Co-Chair with P. Papadopoulos):** IUTAM/CISM Lecture Series (week long workshop) on modeling and simulation of multiphysical processes in multiscale systems in Udine, Italy (tentative).
- (2005-2007) **Organizer (Co-Chair with P. Papadopoulos):** Ninth United States National Congress on Computational Mechanics (USNCCM) in 2007 in San Francisco
- (2005) **Organizer:** CISM (the International Centre For Mechanical Sciences) Lecture Series (week long workshop) on Multiscale modeling and design of new materials in Udine, Italy.
- (2005) **Organizer:** Berkeley/Stanford Computational Fest (one day colloquium) organized with P. Marcus and C. Farhat. [http:// www.me.berkeley.edu / compfest /](http://www.me.berkeley.edu/compfest/)
- (2002) **Organizer:** CISM (the International Centre For Mechanical Sciences) Lecture Series (week long workshop) on Computational Micromechanics in Udine, Italy (co-organized with P. Wriggers).
- (2004) **Organizer:** Prager Symposia (6 sessions) for the Society of Engineering Science (SES) Lincoln, Nebraska, USA (with W. Curtin).
- **Other organized events:** (2007) **Minisymp. Org.:** (1 session) U. S. National Conference on Computational Mechanics (USNCCM); San Francisco, USA.; (2003) **Minisymp. Org.:** (6 sessions) U. S. National Conference on Computational Mechanics (USNCCM); Albuquerque, USA. (with J. Fish, S. Ghosh and P. Ladeveze); (2001) **Minisymp. Org.:** (6 sessions) United States National Conference on Computational Mechanics (USNCCM).

Dearborn, USA. (with J. T. Oden and P. Wriggers); (2001) **Minisymp. Org.:** (1 session) MIT FEM Conference. Cambridge, USA. (with P. Wriggers); (2001) **Minisymp. Org.:** (1 session) European Conference on Computational Mechanics (ECCM). Cracow, Poland. (with T. Lewinski); (2000) **Minisymp. Org.:** (1 session) Gesellschaft für Angewandte Mathematik und Mechanik (GAMM). Göttingen, Germany (with P. Wriggers); (1999) **Minisymp. Org.:** (1 session) European Conference on Computational Mechanics (ECCM). Munich, Germany. (with P. Wriggers).

REFEREED ARCHIVAL JOURNAL PUBLICATIONS

1. Zohdi, T. I. and Meletis, E. I. (1992). On the intergranular hydrogen embrittlement mechanism of Al-Li alloys. *Scripta Metallurgica*. **26**, 1615-1620.
2. Zohdi, T. I., Oden, J. T. and Rodin, G. J. (1996). Hierarchical modeling of heterogeneous bodies. *Computer Methods in Applied Mechanics and Engineering*. **138**, 273-298.
3. Oden, J. T. and Zohdi, T. I. (1997). Analysis and adaptive modeling of highly heterogeneous elastic structures. *Computer Methods in Applied Mechanics and Engineering*. **148**, 367-391.
4. Zohdi, T. I., Feucht, M., Gross, D. and Wriggers, P.(1998). A description of macroscopic damage via microstructural relaxation. *The International Journal of Numerical Methods in Engineering*. **43**, 493-507.
5. Wriggers, P., Zavarise, G. and Zohdi, T. I. (1998). A computational study of interfacial debonding damage in fibrous composite materials. *Computational Materials Science*. **12**, 39-56.
6. Zohdi, T. I. and Meletis, E. I.(1998). Calculation of hydrogen buildup in the neighborhood of intergranular cracks. *The Journal of the Mechanical Behavior of Materials*. **9**, No. 1, 23-33.
7. Moes, N., Oden, J. T., and Zohdi, T. I.(1998). Investigation of the interaction of numerical error and modeling error in the Homogenized Dirichlet Projection Method. *Computer Methods in Applied Mechanics and Engineering*. **159**, 79-101.
8. Zohdi, T. I. and Wriggers, P. (1999). A domain decomposition method for bodies with microstructure based upon material regularization. *The International Journal of Solids and Structures*. **36**, No. 17, 2507-2526.
9. Zohdi, T. I., Hutter, K., and Wriggers, P. (1999). A technique to describe the macroscopic pressure dependence of diffusive properties of solid materials containing heterogeneities. *Computational Materials Science*. **15**, 69-88.
10. Zohdi, T. I. and Wriggers, P. (1999). On the effects of microstress on macroscopic diffusion processes. *Acta Mechanica*. **136**, No 1-2, 91-107.
11. Zohdi, T. I. and Wriggers, P. (2000). A computational model for interfacial damage through microstructural cohesive zone relaxation. *The International Journal of Fracture/Letters in Micromechanics*. **101** No. 3, L9-L14.

12. Zohdi, T. I. and Wriggers, P. (2000). Phenomenological modeling and numerical simulation of the environmental degradation of multiphase engineering materials. *Archive of Applied Mechanics (Ingenieur Archiv)*. **70**, 47-64.
13. Zohdi, T. I. and Wriggers, P. (2000). On the sensitivity of homogenized material responses at infinitesimal and finite strains. *Communications in Numerical Methods in Engineering*. **16**. 657-670.
14. Zohdi, T. I. (2000). Overall solution-difference bounds on the effects of material inhomogeneities. *The Journal of Elasticity*. **58** (3), 249-255.
15. Zohdi, T. I. (2000). Some remarks on hydrogen trapping. *The International Journal of Fracture/Letters in Micromechanics*. **106** No. 2, L9-L14.
16. Zohdi, T. I. and Wriggers, P. (2001). A model for simulating the deterioration of structural-scale material responses of microheterogeneous solids. *Computer Methods in Applied Mechanics and Engineering*. **190**, 22-23, 2803-2823.
17. Zohdi, T. I. and Wriggers, P. (2001). Aspects of the computational testing of the mechanical properties of microheterogeneous material samples. *The International Journal of Numerical Methods in Engineering*. **50**, 2573-2599.
18. Zohdi, T. I. and Wriggers, P. (2001). Modeling and simulation of the decohesion of particulate aggregates in a binding matrix. *Engineering Computations*. **18**, 1/2, 79-95.
19. Zohdi, T. I. and Wriggers, P. (2001). A Petrov-Galerkin transformation that eliminates spurious oscillations for heterogeneous diffusion-reaction equations. *Computational Materials Science*. **21**, 2, 255-260.
20. Zohdi, T. I. and Wriggers, P. (2001). Computational micro-macro material testing. *Archives of Computational Methods in Engineering*. Vol 8, 2, 131-228.
21. Zohdi, T. I., Wriggers, P. and Huet, C. (2001). A method of substructuring large-scale computational micromechanical problems. *Computer Methods in Applied Mechanics and Engineering*. **190**. 43-44, 5639-5656.
22. Zohdi, T. I. (2001). Computational optimization of vortex manufacturing of advanced materials. *Computer Methods in Applied Mechanics and Engineering*. **190**. 46-47, 6231-6256.
23. Zohdi, T. I. (2001). On the propagation of microscale material uncertainty in a class of hyperelastic finite deformation stored energy functions. *The International Journal of Fracture/Letters in Micromechanics*. **112**, L13-L17.
24. Zohdi, T. I. (2002). An adaptive-recursive staggering strategy for simulating multifield coupled processes in microheterogeneous solids. *The International Journal of Numerical Methods in Engineering*. **53**, 1511-1532.
25. Zohdi, T. I. (2002). The tailoring of microstructures for prescribed effective properties. *The International Journal of Fracture/Letters in Micromechanics*. **114**, L15-L20.

26. Zohdi, T. I. (2002). Modeling and simulation of progressive penetration of multilayered ballistic fabric shielding. *Computational Mechanics*. **29**, 61-67.
27. Zohdi, T. I. (2002). Simulation of time-discontinuous chemically-aided intergranular fracture. *Computational Materials Science*. **24** (4), 490-500.
28. Zohdi, T. I. and Steigmann, D. J. (2002). The toughening effect of microscopic filament misalignment on macroscopic fabric response. *The International Journal of Fracture/Letters in Micromechanics*. **118**, No. 4, L71-L76.
29. Zohdi, T. I. (2002). Incorporation of microfield distortion into rapid effective property design. *Mathematics and Mechanics of Solids*. Vol. **7**, Number 3, 237-254.
30. Zohdi, T. I., Monteiro, P. J. M. and Lamour, V. (2002). Extraction of elastic moduli from granular compacts. *The International Journal of Fracture/Letters in Micromechanics*. **115**, L49-L54.
31. Zohdi, T. I. (2002). Bounding envelopes in multiphase material design. *The Journal of Elasticity*. **66**, 47-62.
32. Zohdi, T. I., Kachanov, M. and Sevostianov, I. (2002). On perfectly-plastic flow in porous material. *The International Journal of Plasticity*. **18**, 1649-1659.
33. Zohdi, T. I. (2003). Large-scale statistical inverse computation of inelastic accretion in transient granular flows. *The International Journal of Nonlinear Mechanics*. Vol. **8**, Issue **38**, 1205-1219.
34. Zohdi, T. I. (2003). Genetic design of solids possessing a random-particulate microstructure. *Philosophical Transactions of the Royal Society: Mathematical, Physical and Engineering Sciences*. Vol: 361, No: 1806, 1021-1043.
35. Zohdi, T. I. (2003). On the compaction of cohesive hyperelastic granules at finite strains. *Proceedings of the Royal Society*. Vol. 454. Num. 2034, 1395-1401.
36. Zohdi, T. I. (2003). Computational design of swarms. *The International Journal of Numerical Methods in Engineering*. **57**, 2205-2219.
37. Zohdi, T. I. (2003). Constrained inverse formulations in random material design. *Computer Methods in Applied Mechanics and Engineering*. **192**, 28-30, 18, 3179-3194.
38. Zohdi, T. I. (2003). On the sensitivity of a class of finite-deformation high strain-rate ballistic models to constitutive parameter uncertainty. *The International Journal of Fracture/Letters in Micromechanics*. **119**, No. 2, L47-L52.
39. Zohdi, T. I. (2004). Staggering error control for a class of inelastic processes in random microheterogeneous solids. *The International Journal of Nonlinear Mechanics*. **39**, 281-297.
40. Zohdi, T. I. (2004). Modeling and simulation of a class of coupled thermo-chemo-mechanical processes in multiphase solids. *Computer Methods in Applied Mechanics and Engineering*. Vol. 193/6-8 679-699.

41. Zohdi, T. I., Holzapfel, G. A. and Berger, S. A. (2004). A phenomenological model for atherosclerotic plaque growth and rupture. *The Journal of Theoretical Biology*. Vol. 227, Issue 3, pp. 437-443.
42. Zohdi, T. I. (2004). Modeling and direct simulation of near-field granular flows. *The International Journal of Solids and Structures*. Vol 42/2 pp 539-564.
43. Zohdi, T. I. (2004). A computational framework for agglomeration in thermo-chemically reacting granular flows. *Proceedings of the Royal Society*. Vol. 460. Num. 2052, 3421-3445.
44. Zohdi, T. I. (2005). Statistical ensemble error bounds for homogenized microheterogeneous solids. *Journal of Applied Mathematics and Physics*. (*Zeitschrift für Angewandte Mathematik und Physik*). Volume 56, Number 3. 497-515.
45. Zohdi, T. I. (2005). Charge-induced clustering in multifield particulate flow *The International Journal of Numerical Methods in Engineering*. Volume 62, Issue 7, Pages 870-898
46. Temizer, I. and Zohdi, T. I. (2005). Fragmentation and agglomeration in microscale granular flows. *The International Journal of Fracture/Letters in Micromechanics*. Vol. 131, L37-L44.
47. Zohdi, T. I. and Kachanov, M. (2005). A note on the micromechanics of plastic yield of porous solids *The International Journal of Fracture/Letters in Micromechanics*. Vol. 133, L31-L35.
48. Zohdi, T. I. (2005). A simple model for shear stress mediated lumen reduction in blood vessels. *Biomechanics and Modeling in Mechanobiology*. Volume 4, Number 1, p57 - 61.
49. Zohdi, T. I. and Szeri, A. J. (2005). Fatigue of kidney stones with heterogeneous microstructure subjected to shock wave lithotripsy. *Journal of Biomedical Materials Research: Part B - Applied Biomaterials*. Volume 75B, Issue 2, Date: November 2005, Pages: 351-358.
50. Zohdi, T. I. and Powell, D. (2006). Multiscale construction and large-scale simulation of structural fabric undergoing ballistic impact. *Computer Methods in Applied Mechanics and Engineering*. Volume 195, 94-109.
51. Zohdi, T. I. (2006). On the optical thickness of disordered particulate media. *Mechanics of Materials*. Volume 38, 969-981.
52. Zohdi, T. I. (2006). Uncertainty growth in hypo-elastic material models. *Mathematics and Mechanics of Solids*. Vol 11., Num. 6, 555-562.
53. Zohdi, T. I and Kuypers, F. A. (2006). Modeling and rapid simulation of multiple red blood cell light scattering. *Proceedings of the Royal Society Interface*. Volume 3, Number 11 Pages 823-831.
54. Zohdi, T. I. (2006). Computation of the coupled thermo-optical scattering properties of random particulate systems. *Computer Methods in Applied Mechanics and Engineering*. Volume 195, 5813-5830.

55. Temizer, I. and Zohdi, T. I. (2007). A numerical method for homogenization in non-linear elasticity. *Computational Mechanics*. Volume 40, Number 2, 281-298.
56. Zohdi, T. I. (2007) P-wave induced energy and damage distribution in agglomerated granules *Modelling and simulation in materials science and engineering*. **15**, S435-S448.
57. Zohdi, T. I. (2007). A computational framework for network modeling of fibrous biological tissue deformation and rupture. *Computer Methods in Applied Mechanics and Engineering*. Volume 196, 2972-2980.
58. Zohdi, T. I. (2007). Computation of strongly coupled multifield interaction in particle-fluid systems. *Computer Methods in Applied Mechanics and Engineering*. Volume 196, 3927-3950.
59. Zohdi, T. I. (2007). Particle collision and adhesion under the influence of near-fields. *Journal of Mechanics of Materials and Structures*. Volume 2, No. 6, 1011-1018
60. Dirksen, F. and Zohdi, T. I. (2007) On effective energy reflectance of particulate materials. *The International Journal of Fracture/Letters in Fracture and Micromechanics*. 145: 341-347.
61. Arbelaez, D., Zohdi, T. I. and Dornfeld, D. (2008) Modeling and Simulation of Material Removal with Particulate Flow. *Computational Mechanics*. Volume 42, 749-759.
62. Sevostianov, I, Kachanov, M., and Zohdi, T. I. (2008). On computation of the compliance and stiffness contribution tensors of inhomogeneities of non-ellipsoidal shapes. *International Journal of Solids and Structures*. 45 (16), 4375-4383.
63. Zohdi, T. I. (2008) On the computation of the coupled thermo-electromagnetic response of continua with particulate microstructure. *The International Journal of Numerical Methods in Engineering*. **76**, 1250-1279.
64. Arbelaez, D. and Zohdi, T. I. (2009) Uncertainty quantification of the subsurface failure of composites with nanoscale constituents. *Journal of Computational and Theoretical Nanoscience*. Available online.
65. Zohdi, T. I. (2009) Mechanistic modeling of swarms. *Computer Methods in Applied Mechanics and Engineering*. Volume 198, Issues 21-26, Pages 2039-2051.
66. Powell, D. and Zohdi, T. I. (2009) Attachment mode performance of network-modeled ballistic fabric shielding. *Composites Part B: Engineering*. Volume 40, Issue 6, Pages 451-460.
67. Arbelaez, D., Zohdi, T. I. and Dornfeld, D. (2009) On impinging near-field granular jets. *The International Journal of Numerical Methods in Engineering*. Available Online since February, 2009.
68. Powell, D. and Zohdi, T. I. (2009) A note on flaw-induced integrity reduction of structural fabric. *The International Journal of Fracture/Letters in Micromechanics*. Vol. 158, L89-L96.

69. Zohdi, T. I. (2009) Microfibril-based estimates of the ballistic limit of multilayered fabric shielding. *The International Journal of Fracture/Letters in Micromechanics*. Vol. 158, L81-L88.
70. Zohdi, T. I. (2009) Charged wall-growth in channel-flow. *The International Journal of Engineering Science*. Available Online since July, 2009.
71. Zohdi, T. I. (in press) On the dynamics of charged electromagnetic particulate jets and agglomerations. *Archives of Computational Methods in Engineering*.
72. Zohdi, T. I. (in press) Dielectric breakdown elimination via particulate additives. *The International Journal of Fracture/Letters in Micromechanics*.
73. Zohdi, T. I., Kuypers, F. A. and Lee, W. C. (submitted) A note on effective permittivity inversion for hematocrit level.
74. Zohdi, T. I. (submitted) Localized electrical current propagation in stochastically perturbed atmospheres.
75. Zohdi, T. I. (submitted) High-speed impact with electromagnetically sensitive fabric and induced projectile spin.

BOOKS AND BOOK CHAPTERS

1. Zohdi, T. I. (*Encyclopedia chapter*, 2004) Homogenization methods and multiscale modeling: linear problems. (*Peer Reviewed*) Encyclopedia of Computational Mechanics. E. Stein, R. de Borst and T. Hughes Editors. John Wiley.
2. Zohdi, T. I. and Wriggers, P. (*Book*, 2005) Introduction to computational micromechanics. (*Peer Reviewed*). Springer-Verlag.
3. Zohdi, T. I. (*Handbook chapter*, 2006) An introduction to the finite element method. (*Peer Reviewed*). Mechanical Engineer's Handbook, 3rd edition. John Wiley.
4. Zohdi, T. I. (*Book*, (2007)) Introduction to the modeling and simulation of particulate flows. (*Peer Reviewed*). SIAM (Society for Industrial and Applied Mathematics).
5. Zohdi, T. I. and Wriggers, P. (*Book*, 2008) Introduction to computational micromechanics. Second Reprinting (*Peer Reviewed*). Springer-Verlag.
6. Zohdi, T. I. (*Book*, in preparation) A primer on the electromagnetic properties of multi-phase media.

SUMMARY OF TEACHING ACTIVITIES: Mechanics of Materials (Undergrad). U. C. Berkeley. (Spring 2009); **Finite Element Analysis (Grad).** U. C. Berkeley. (Fall 2002, Fall 2003, Fall 2004, Fall 2006, Fall 2007, Fall 2008); **Finite Element Analysis (Undergrad).** U. C. Berkeley. (Spring 2006, Spring 2008); **Multiscale modeling and design of new materials (Grad).** U. C. Berkeley. (Fall 2001, Spring 2004, Spring 2008); **Continuum mechanics (Grad).** U. Hannover. In English and German. (Summer 2000, Winter 2000);

Plasticity theory (Grad). U. Hannover. In English and German. (Summer 2000); **Elasticity theory (Grad).** U. Hannover. In English and German. (Winter 1999, Winter 2000); **Micromechanics (Grad).** Technische Universität Darmstadt. In English and German. (Winter 1998); **Dynamics (Undergrad).** U. C. Berkeley. (Spring 2002, Fall 2002, Spring 2003); **Mechanical Behavior of Engineering Materials (Grad).** U. C. Berkeley. (Fall 2005, Fall 2008, Fall 2009); **Mechanical Behavior of Engineering Materials (Undergrad).** U. C. Berkeley. (Spring 2004, Spring 2005, Spring 2007).

GRADUATE STUDENT SUPERVISION: ¹ S. Brinckmann, Leibniz Universität Hannover, Germany, finished Diploma (M. S.) in 8/2000; S. Beuermann, Leibniz Universität Hannover, Germany, finished Diploma (M. S.) in 8/2000; S. Kelly, UC Berkeley, M. S. 2004; W-K. Li, UC Berkeley, M. S. 2004; I. Temizer, M. S. 2003, Ph.D. 2005 (Currently a post-doc in Germany); D. Powell, M. S. 2005, Ph.D. 2007 (Currently a post-doc at Stanford); J. Wenk, M. S. 2005 Ph.D. 2008 (co-supervised with P. Papadopoulos); D. Arbelaez, M. S. 2005, Ph.D. 2008 (co-supervised with D. Dornfeld); J. Cason, M. S. 2006, Currently working on Ph.D., R. Krone, Currently working on Ph.D. (co-supervised with D. Steigmann); G. Mseis, Currently working on Ph.D.; T. Kostka, Currently working on Ph. D.; L. C. Lee, Currently working on Ph. D. (co-supervised with S. Morris); E. Bitar, Currently working on Ph. D. (co-supervised with K. Poolla); D. Klepach, Currently working on Ph. D.; J. Waterman, finished M. S. in May 2008; S. Trimpe (Exchange student), U. Hamburg, Germany, M. S. 2007; V. Escobedo, M. S. 2009; A. Gearhart, Currently working on Ph D.(co-supervised with J. Demmel); S. Choi, Currently working on Ph D.(co-supervised with A. Pisano); B. Collins, Currently working on Ph D.

POST-DOCTORAL VISITORS: Dr. G. Lubineau (Cachan,France), Dr. P. Glösmann (Hamburg, Germany), Dr. D. Powell (UC Berkeley), Dr. D. Arbelaez (UC Berkeley), Dr. K. Linnemann (Karlsruhe, Germany)

Masters Thesis committee member for: K. Kwong (ME, 2002), J. Semtner (Ocean Eng., 2003), I. Temizer (ME, 2003), J. Buckley (ME, 2004), S. Kelley (ME, 2004), C. Wolfe (ME, 2004), W-K. Li (ME, 2004), R. Sauer (CE, 2004), M. Michlitsch (ME, 2004), C. May (ME, 2004), D. Powell (ME, 2005), T. Raybon (ME., 2005), S. Williamson-Stack (ME, 2005), J. Wenk (ME., 2005), D. Arbelaez (ME, 2005), J. Sendagorta (ME, 2005), A. Menjot de Champfluer (ME, 2005) E. Cao (ME, 2005), T. Tresieras (ME, 2006), K. Donovan (ME, 2006), J. Cason (ME, 2006), Y. Z Lu (ME, 2006), C. Bureau (ME 2006), J. Elkin (ME, 2006), F. Dirksen (ME, 2007), S. Trimpe (ME, 2007), A. Faruk (ME, 2008), R. Singla (ME, 2008), T. Kostka (ME, 2008), J. Waterman (2008), S. Choi (2008), J. Jantzen (ME. 2009), A. Green (ME, 2009), V. Escobedo (ME, 2009), P. Minor (ME, 2009), T. Schmid (ME, 2009), N. Tom (ME, 2009)

Dissertation committee member for: M. Hamed (ME, 2003), X. Shen (ME, 2004), P. Tsourkas (ME, 2004), I. Temizer (ME, 2005), Y. Gao (MsE, 2006), P. Hua (NE, 2006), M. Jin (MsE, 2006), J. Buckley (ME, 2006), R. Sauer (CE, 2006), R. Borrelli (NE, 2006), S.

¹In the German system, where I spent the first 5 years of my post-graduate career, I did not have the privilege of supervising doctoral students because I was not a Professor.

Williamson-Stack (ME, 2006), J. Foulk (ME, 2007), D. Powell (ME, 2007), P. Kessler (ME, 2007), P. Bhargava (ME, 2008), R. Cole (ME, 2008), J. Ieorta (ME, 2008), X. S. Asay-Davis (AS and T, 2008), D. Arbelaez (ME, 2008), M. Taylor (ME, 2008), J. Wenk (ME, 2008), D. Chen (ME, 2008), R. Holtzman (CE, 2009), C. Huber (EPS, 2009), S. Tripathi (ME, 2009), A. Vijayaraghavan (ME, 2009), H. Kam (ME, 2009), P. Jing (ME, 2009), M. Koplrow (ME, 2009), J. C. W. Yuan (MSE, 2009), S. Shetty (ME 2009), N. Liu (ME, Ongoing), R. Rai (ME, Ongoing), G. Mseis (ME, Ongoing), D. Klepach (ME, Ongoing), T. Kostka (ME, Ongoing), R. Krone (ME, Ongoing), L.-C. Lee (ME, Ongoing), J. Cason (ME, Ongoing)

Oral Preliminary and Qualifying examiner for: C. Sebert (MsE, 10/2003), Y. Gao (MsE, 01/2003), S. Gupta (AS & T, 05/2003), A. Chakravartula (ME, 11/2003), J. Miao (MsE, 12/2003), J. Edd (ME, 04/2004), L. Parker (AS & T, 04/2004), J. Buckley (ME, 11/2004), B. Nadler (ME, 12/2004), X. Asay-Davis (AS & T, 12/2004), T. Li (MsE, 12/2004), R. Yuan (ME, 12/2004), S. Tajima (ME, 01/2005), R. Sauer (CE, 01/2005), S. Shetty (ME, 4/2005), W. He (ME, 05/2005), P. Hua (NE, 05/2005), B. Borrelli (NE, 05/2005), R. Gish (ME, 08/2005), D. Jones (ME, 09/2005), S. Gupta (AS & T, 11/2005), S. Timpe (ME, 12/2005), A. Gupta (ME, 01/2006), D. Chen (ME, 02/2006), P. Bhargava (ME, 4/2006), D. Wong (ME, 04/2006), J. Foulk (ME, 04/2006), G. Bevill (ME, 04/2006), S. Eswaran (ME, 05/2006), R. Cole (ME, 05/2006), C. Sparrey (ME, 11/2006). J. C. W. Yuan (MSE, 12/2006), M. Taylor (ME, 10/2006), A. Carbonaro (ME, 12/2006), H. Zhang (ME, 04/2007), S. Tripathi (ME, 04/2007), C. Huber (EPS, 04/2007), R. Holtzman (CE, 04/2007), Y. Huang (CE, 04/2007), S. Moseley (ME, 05/2007), G. Templet (AS & T, 08/2007), A. Vijayaraghavan (ME(10/2007) L. Pan (ME, 12/2007), N. Liu (ME, 12/2007), E. Yap (Bio-eng, 1/2008), K. Mandadapu (ME, 3/2008), H. Kam (EE, 4/2008), A. Sengupta (ME, 5/2008), M. Koplrow (ME, 12/2008), M. Barham (ME, 12/2008). Y. M. Chen (ME, 5/2009), Y. Hanlumyuang (MSE, 3/2009), A. Fields (ME, 4/2009), X. Yin (ME, 4/2009), H. Xu (ME, 4/2009), S. Easley (ME, 5/2009), R. Rai (ME, 5/2009), W. Li (ME, 8/2009), L. Croft (BioE, 10/2009)

UNIVERSITY COMMITTEE SERVICE:

Administrative committees: Advisory Committee for the Engineering Systems Research Center (2002-present) Member, Applied Science and Technology Graduate Group (2004-present), Executive Council for the Designated Emphasis Program in Computational Science and Engineering (2008-present)

Committees of the academic senate: Graduate Division's Fellowships Advisory Board (2006-present), UC Berkeley Graduate Council (2008-present)

College committees: Engineering Science Committee (2002-present), Computational Engineering Sciences Review Committee (2002-present), Ad Hoc Committee for a Computational Engineering Sciences Program in Engineering Science (2002-present), Committee for Summer Undergraduate Program in Engineering Research at Berkeley (SUPERB) (2006-present), IDS Committee of Ocean Engineering (2008-present) AS & T Admissions Committee (2006-present), CES undergraduate advisor (2005-present), AS & T Graduate Diversity Advisor (2007-present), AS & T (elected) Executive Committee (2007-present), College ABET Committee (2009-present), Col-

lege Undergraduate Studies Committee (2009-present), College Common First Year Committee (2009-present)

Departmental committees: ME Committee on awards (2005-2006), ME Committee on Undergraduate Study (2005-2006), ME Committee on computing software (2001-present), chair since (8/2005-present), ME Committee on seminars (2001-present), chair since (8/2005-present), ME Committee for NRC Review (2005-present), chair since (2005-present), ME Committee on Graduate Study (2005-present), ME Dept. Committee on Faculty and Student Affirmative Action (2005-present), ME Solid and Continuum Mechanics graduate group advisor (2005-present), ME undergraduate advisor (2005-present)

Academic Associates Administrator for UC Berkeley Campus for computing resources at the (UC System-wide) San Diego Supercomputing Center (2006-present)

ATHLETIC HONORS: Former Member of the United States Junior Table Tennis Team, Former U.S. Junior Olympic Table Tennis Silver Medalist, Former Louisiana State Mens Table Tennis Doubles and Singles Champion.

PRESENTATIONS AND INVITED LECTURES

1. Zohdi, T. I. (1992) Mathematical modeling of the dynamics of Wankel rotors. AIAA Southwest Student Conference. Dallas, Texas, USA. (Winner of best AIAA student technical lecture).
2. Oden, J. T., Zohdi, T. I. and Rodin, G. J. (1996) Hierarchical modeling of heterogeneous bodies. IUTAM World Congress, Kyoto, Japan.
3. Oden, J. T., Zohdi, T. I. and Cho, J. R. (1996) Hierarchical modeling, a-posteriori error estimation and adaptive methods in computational mechanics. ECCOMAS, Paris, France. (invited plenary lecture).
4. Oden, J. T. and Zohdi, T. I. (1997) Hierarchical modeling of highly heterogeneous materials. USNCCM, Conference, San Francisco, USA.
5. Oden, J. T., Vemaganti, K., Moes, N., and Zohdi, T. I. (1997) Analysis of composite materials. USNCCM, Conference, San Francisco, USA.
6. Zohdi, T. I. and Oden, J. T. (1997) Analysis and adaptive modeling of highly heterogeneous elastic structures. Workshop on Adaptive Finite Element Methods in Computational Mechanics, Universität Stuttgart, Germany.
7. Zohdi, T. I., Universität Stuttgart, Department of Mechanics, Germany, (1997) (invited lecture)
8. Zohdi, T. I., ETH Zürich, Department of Applied Mathematics, Switzerland, (1997) (invited lecture)
9. Zohdi, T. I., Universität Kiel, Department of Applied Mathematics, Germany, (1997) (invited lecture)

10. Zohdi, T. I. and Wriggers, P.(1998) Toward computationally rapid analysis and design of material microstructure and macrostructure GAMM conference, Bremen, Germany.
11. Zohdi, T. I. (1998) A method of model reduction for heterogeneous materials (Invited lecture). Workshop: Mathematical approaches to the continuum mechanics of fluids and solids. Wahlen, Germany. (invited lecture)
12. Zohdi, T. I., Universität Braunschweig, Department of Scientific Computation, Germany, (1998) (invited lecture)
13. Zohdi, T. I., Max Planck Institute, Leipzig, Department of Applied Mathematics, Germany, (1999) (invited lecture)
14. Zohdi, T. I., Ecole Polytechnique Fédérale, Lausanne, Department of Materials Science, Switzerland, 1999 (invited lecture)
15. Zohdi, T. I. and Wriggers, P.(1999) Thermo-chemo-mechanische Simulation der Degradation von Ingenieurwerkstoffen. Kolloquium: Gekoppelte Probleme der Fluid- und Festkörpermechanik. Hannover, Germany.
16. Zohdi, T. I. and Wriggers, P.(1999) Some aspects of computational testing and design of composite materials. European Conference on Computational Mechanics. Munich, Germany.
17. Oden, J. T., Vemaganti, K. and Zohdi, T. I.(1999) Local estimates and upper and lower bounds of modeling error and adaptive modeling of heterogeneous media. European Conference on Computational Mechanics. Munich, Germany. (invited keynote lecture)
18. Zohdi, T. I. (1999) A model for simulating the deterioration of structural-scale material responses of microheterogeneous solids. Euromech Colloquium 402: Micromechanics of Fracture Processes. Seeheim, Germany. (invited lecture)
19. Zohdi, T. I. (2000) Computational testing of microheterogeneous solids. Northwest German Colloquium for Mechanics. Hannover, Germany. (invited lecture)
20. Wriggers, P. and Zohdi, T. I. (2000) On the reliability of computational material tests at infinitesimal and finite strains. IUTAM World Congress, Chicago, USA.
21. Zohdi, T. I. (2000) Some approaches for modeling and simulation of thermo-chemo-mechano processes in microheterogeneous solids. 239. WE-Heraeus-Seminar: Modeling and algorithms for problems in solid mechanics. Bad Honeff, Germany. (invited lecture)
22. Zohdi, T. I. and Wriggers, P. (2000) A model for simulating the deterioration of structural-scale material responses of microheterogeneous solids. ECCOMAS/COMPLAS. September 11-14. Barcelona, Spain. (invited keynote lecture)
23. Zohdi, T. I., Universität Stuttgart, Stuttgart, Department of Mechanics, Germany, (2000) (invited lecture)
24. Zohdi, T. I., Chalmers University, Departments of Applied Mathematics and Mechanics, Göteborg, Sweden, (2000) (invited lecture)

25. Zohdi, T. I., Universität Stuttgart, Department of Structural Mechanics, Stuttgart, Germany, (2001) (invited lecture)
26. Zohdi, T. I., University of California, Department of Mechanical Engineering, Berkeley, USA, (2001) (invited lecture)
27. Zohdi, T. I., University of New Mexico, Department of Mechanical Engineering, Albuquerque, USA, (2001) (invited lecture)
28. Zohdi, T. I., Johns Hopkins University, Department of Civil Engineering, Baltimore, USA, (2001) (invited lecture)
29. Zohdi, T. I., Yale University, Department of Mechanical Engineering, New Haven, USA, (2001) (invited lecture)
30. Zohdi, T. I., University of California, Department of Materials Science, Berkeley, USA, (2001) (invited lecture)
31. Wriggers, P. and Zohdi, T. I. (2001) Computational testing of new materials. ECCM Conference. Cracow, Poland. (invited plenary lecture)
32. Zohdi, T. I. and Wriggers, P. (2001) Aspects of the computational testing of the mechanical properties of microheterogeneous material samples. USNCCM Conference, Dearborn, USA.
33. Zohdi, T. I. (2002) Genetic strings for nonconvex micro-macro material design. IUTAM Symposium on Micromechanics of Suspensions and Composites. Austin, Texas. (invited lecture)
34. Zohdi, T. I. (2002) Micro-macro genetic design of multiscale solids. 12th International Workshop on Computational Mechanics of Materials. Darmstadt, Germany. (invited keynote lecture)
35. Zohdi, T. I. (2002) Modeling and simulation of variably coupled time-transient thermo-chemo-mechanical processes in multiphase solids. Multiscale Computational Mechanics for Material and Structures, Cachan, France. (invited lecture)
36. Zohdi, T. I., Stanford University, Department of Mechanical Engineering, Palo Alto, USA, (2002) (invited lecture)
37. Zohdi, T. I., University of California, Department of Mechanical Engineering, San Diego, USA, (2003) (invited lecture)
38. Zohdi, T. I., Materials Research Institute, Chemistry and Materials Science Directorate, Lawrence Livermore National Lab, Livermore, USA, (2003).
39. Zohdi, T. I. (2003) Nonstandard inverse problems in micro-macro mechanics USNCCM Conference, Albuquerque, USA.
40. Zohdi, T. I. (2003) New particle-based models for granular flows. Second International Workshop on Geophysical Mass Flow Modeling and Simulations. Buffalo, New York. (invited lecture).

41. Zohdi, T. I. (2003) Nano-scale heterogeneous and multifunctional materials. ARO Workshop on Future Directions in Solid Mechanics. Arlington, Virginia. (invited lecture).
42. Zohdi, T. I., University of California, Department of Civil Engineering, Berkeley, USA, (2004) (invited lecture)
43. Zohdi, T. I., Lawrence Berkeley Labs, Berkeley, USA, 2004 (invited lecture)
44. Zohdi, T. I. (2004) Nonstandard inverse problems in micro-macro mechanics. Workshop on inverse problems in solid mechanics. The Center for Inverse Problems at Rensselaer Polytechnic Institute, Troy, New York. (invited lecture).
45. Szeri, A. J. and Zohdi, T. I. (2004) Lithotripter shock wave simulations and cavitation damage of kidney stones, Annual Program Project Meeting, sponsored by N.I.H., Indiana University School of Medicine, September 2, 2004 (invited lecture).
46. Szeri, A. J. and Zohdi, T. I. (2005) A model for damage of microheterogeneous kidney stones. Meeting of the Acoustical Society of America, Vancouver, May 16, 2005.
47. Zohdi, T. I. (2005) Modeling and simulation of nonstandard multifield granular flows. Berkeley-Stanford Computational Fest.
48. Zohdi, T. I. (2005) Light scattering properties of random particulate systems. USNCCM Conference, Austin, Texas, USA. (invited lecture).
49. Zohdi, T. I. (2005) Light scattering and coupled thermal processes in particulate clouds. Clouds, Aerosols, and Radiative Transfer Workshop. Space Sciences Laboratory, Berkeley, California, USA.
50. Zohdi, T. I., University of California, Los Angeles, Department of Mechanical Engineering, Los Angeles, USA, (2005) (invited lecture)
51. Zohdi, T. I., The Ohio State University, Department of Mechanical Engineering, Columbus, USA, (2005) (invited lecture)
52. Arbelaez, D. & Zohdi, T. (2006) Granular Flow Simulation of CMP. Eleventh International CMP Planarization for ULSI Multilevel Interconnection Conference. February 21 - 23, 2006 Fremont, Ca.
53. Arbelaez, D. & Zohdi, T. I. (2006) Modeling and simulation of CMP. Berkeley-Stanford Computational Fest.
54. Powell, D. & Zohdi, T. I. (2006) Modeling and simulation of Ballistic Fabric. Berkeley-Stanford Computational Fest.
55. Powell, D and Zohdi, T. I. (2007) Multiscale construction and large-scale simulation of dynamically loaded structural fabric, 9th US National Congress on Computational Mechanics, San Francisco, California, USA.
56. Arbelaez, D. and Zohdi, T. (2007) Simulation of charged particulate sprays striking a surface. 9th US National Congress on Computational Mechanics, San Francisco, California, USA.

57. Wenk, J., Papadopoulos, P. and Zohdi, T. (2007) On the sensitivity of critical plaque-cap stress in stenosed arteries. 9th US National Congress on Computational Mechanics, San Francisco, California, USA.
58. Zohdi, T. (2007) Modeling and simulation of multiphysical processes in particulate media. MSC Software Corporation, Mountain View, California
59. Zohdi, T. (2007) Modeling and simulation of multiphysical processes in particulate media. UC Berkeley Applied Math Series, Berkeley, California (invited lecture)
60. Zohdi, T. (January, 2008) Multiphysical granular flows: from particles to swarms. Midwest Mechanics Lecture Series. Northwestern University, Evanston, Illinois (invited lecture)
61. Zohdi, T. (March, 2008) Modeling and simulation of multiphysical processes in particulate media. University of Southern California (invited lecture)
62. Zohdi, T. (April, 2008) An Overview of Contemporary Topics in Multiscale Modeling. Department of Civil Engineering, UC Berkeley (invited lecture)
63. Zohdi, T. (May, 2008) Multiphysical particulate systems. Department of Mechanical Engineering, Stanford University (invited lecture)
64. Wenk, J., Papadopoulos, P., Zohdi, T. (June, 2008) Numerical Modeling of Stress Concentrations in Micro-Heterogeneous Bio-Tissue. 8th World Congress for Computational Mechanics
65. Powell, D., Zohdi, T., Farhat, C. (June, 2008) Multi-Scale Construction and Large-Scale Simulation of Dynamically Loaded Structural Fabric. 8th World Congress for Computational Mechanics
66. Powell, D., Zohdi, T., Farhat, C. (December, 2008) Multi-Scale Modeling and Large-Scale Transient Simulation of Ballistic Fabric. 26th Army Science Conference, Orlando, FL Dec 1-4, 2008
67. Farhat, C., Powell, D. and Zohdi, T. (April, 2009) Multi-Scale Modeling and Large-Scale Transient Simulation of Ballistic Fabric. Aberdeen Proving Grounds.
68. Arbelaez, D. and Zohdi, T. (April, 2009) Modeling of Composite Materials at Multiple Scales. Aberdeen Proving Grounds.
69. Arbelaez, D., Mseis, G. and Zohdi, T. (June, 2009) Modeling of Composite Materials at Multiple Scales. Army High Performance Computing Center Review, Stanford University.
70. Powell, D., Zohdi, T., and Farhat, C. (July, 2009) Multi-Scale Modeling and Large-Scale Transient Simulation of Ballistic Fabric. 10th US National Congress on Computational Mechanics, Columbus, Ohio, USA.