COMPLETE RESUME OF

J. N. REDDY

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SUMMARY

Dr. Reddy is a Distinguished Professor and inaugural holder of the *Oscar S. Wyatt Endowed Chair* in Mechanical Engineering at Texas A&M University, College Station, Texas. Dr. Reddy earned a Ph.D. in Engineering Mechanics in 1974. He worked as a Post-Doctoral Fellow at the University of Texas at Austin, Research Scientist for Lockheed Missiles and Space Company during l974-75, and taught at the University of Oklahoma from 1975 to 1980, Virginia Polytechnic Institute & State University from 1980 to 1992, and Texas A&M University from 1992 till now.

Dr. Reddy is the author of over 340 journal papers and 15 text books on theoretical formulations and finite-element analysis of problems in solid and structural mechanics (plates and shells), composite materials, computational fluid dynamics, numerical heat transfer, and applied mathematics. The books authored by Dr. Reddy include: *An Introduction to Nonlinear Finite Element Analysis*, Oxford University Press, 2004; *An Introduction to the Finite Element Method*, McGraw-Hill, 1984 (second edition, 1993; third edition will appear in 2005 with the postdate of 2006); *Energy Principles and Variational Methods in Applied Mechanics*, John Wiley, l984 (second edition 2002); *Applied Functional Analysis and Variational Methods in Engineering*, McGraw-Hill, 1986; *Mechanics of Laminated Composite Plates and Shells: Theory and Analysis*, CRC Press, 1997 (second edition, 2004); *Theory and Analysis of Elastic Plates*, Taylor & Francis, 1999; *Advanced Engineering Analysis*, (J. N. Reddy and M. L. Rasmussen), John Wiley, 1982; *The Finite Element Method in Heat Transfer and Fluid Dynamics* (J. N. Reddy and D. K. Gartling), CRC Press, 1994 (second edition, 2001); *An Introduction to the Mathematical Theory of Finite Elements* (J. T. Oden and J. N. Reddy), Wiley, l976 and *Variational Methods in Theoretical Mechanics* (J. T. Oden and J. N. Reddy), Springer-Verlag, 1976. Dr. Reddy advised, to date, 16 postdoctoral fellows, 44 Ph.D. students and 34 M.S. students.

Dr. Reddy is the first recipient of the University of Oklahoma College of Engineering's *Award for Outstanding Faculty Achievement in Research*, the *1984 Walter L. Huber Civil Engineering Research Prize* of the American Society of Civil Engineers (ASCE), the *1985 Alumni Research Award* at Virginia Polytechnic Institute, and *1992 Worcester Reed Warner Medal* and *1995 Charles Russ Richards Memorial Award* of the American Society of Mechanical Engineers (ASME). He received

German Academic Exchange (DAAD) and von Humboldt Foundation (Germany) research awards. Most recently, he received the 1997 *Melvin R. Lohmann Medal* from Oklahoma State University's College of Engineering, Architecture and Technology, the *1997 Archie Higdon Distinguished Educator Award* from the Mechanics Division of the American Society of Engineering Education, the 1998 *Nathan M. Newmark Medal* from the American Society of Civil Engineers, the 2000 *Excellence in the Field of Composites* and *2004 Distinguished Research Award* from the American Society for Composites, the *2000 Faculty Distinguished Achievement Award for Research* from Texas A&M University, the *2003 Texas A&M Bush Excellence Award for Faculty in International Research* award., and the 2003 *Computational Solid Mechanics* award from USACM.

Professor Reddy is a *fellow* of the American Academy of Mechanics (AAM), the American Institute of Aeronautics and Astronautics (AIAA), the American Society of Civil Engineers (ASCE), the American Society of Mechanical Engineers (ASME), the American Society for Composites (ASC), International Association of Computational Mechanics (IACM), U.S. Association of Computational Mechanics (USACM), and the Aeronautical Society of India (ASI). Dr. Reddy received a *Technical Achievement Award* from the National Academy of Engineering for "outstanding contributions to engineering education and research". He also received *Certificates of Teaching Excellence* at Virginia Polytechnic Institute and *Outstanding Graduate Teaching* award from Texas A&M University. He delivered over sixty plenary, keynote, or general lectures at national and international conferences.

Dr. Reddy serves on the editorial boards of about two-dozen journals, including *International Journal of Non-Linear Mechanics*, *International Journal for Numerical Methods in Engineering*, and *International Journal for Numerical Methods in Fluids*. He is the Editor-in-Chief of *Mechanics of Advanced Materials and Structures, International Journal of Computational Methods in Engineering Science and Mechanics* and *International Journal of Structural Stability and Dynamics*. Dr. Reddy served as the chair of the ASME (AMD) Committee on Computing in Applied Mechanics, the ASCE (EMD) Committee on Computational Mechanics, the Executive Committee and Advisory Board of the Engineering Mechanics Division of ASCE. Dr. Reddy is also a member of the International Association of Computational Mechanics (IACM), former co-editor of its bulletin, a founding member and former president of the U.S. Association of Computational Mechanics (USACM).

A more complete resume with links to journal papers can be found at (this web site lists only highly cited researchers in engineering around the world; Dr. Reddy is only one from TAMU listed there) **http://authors.isihighlycited.com/**

CURRICULUM VITAE

PERSONAL

Born on August l2, l945; married to Aruna; children: Anita and Anil; Naturalized U.S. citizen.

EDUCATION

- B.E. (5yrs. Course), Mechanical Engineering, Osmania University, Hyderabad, Andhra Pradesh, India, 1968.
- M.S., Mechanical Engineering, Oklahoma State University, Stillwater, Oklahoma, 1970.
- Ph.D., Engineering Mechanics (*Advisor:* Dr. J. T. Oden), University of Alabama in Huntsville, Alabama, 1973.
- Post Doctoral Fellow, Texas Institute for Computational Mechanics, University of Texas at Austin, 1973-1974.

INDUSTRIAL EXPERIENCE

- 1974-1975: *Research Scientist*, Lockheed Missiles and Space Company, Huntsville, Alabama.

ACADEMIC EXPERIENCE

- 1975-1978: *Assistant Professor*, School of Aerospace, Mechanical, and Nuclear Engineering, University of Oklahoma, Norman.
- 1978-1980: *Associate Professor*, School of Aerospace, Mechanical, and Nuclear Engineering, University of Oklahoma, Norman.
- 1980-1985: *Professor*, Engineering Science and Mechanics Department, Virginia Polytechnic Institute and State University, Blacksburg, Virginia.
- 1986-1992: *Clifton C. Garvin Professor* of Engineering Science and Mechanics, Virginia Polytechnic Institute and State University, Blacksburg, Virginia.
- 1992-present: *Oscar S. Wyatt, Jr. Chair* in Mechanical Engineering, Texas A&M University, College Station, Texas.
- 1998-present: *Distinguished Professor*, Texas A&M University, College Station, Texas (only about one percent of the university's faculty is appointed to this rank).

RESEARCH BACKGROUND AND INTERESTS

General: Formulation and analysis of problems in applied mechanics, solid and structural mechanics, computational fluid mechanics, computational heat transfer, computational solid mechanics, and applied mathematics. Specialization in the theory and applications of the finite element method, composite materials and structures, plate and shell theories, and energy and variational principles and computational methods.

Current Research Activities: Analysis of laminated composite plates and shells with actuators/sensors; health-monitoring of composite structures with damage; thermo-mechanical analysis of functionally graded materials; multiscale analysis of carbon nanotube-reinforced composite materials; formulation and numerical simulation of biomedical problems including stress and deformation of biological cells; numerical modeling of surface damage in polymers; and development of robust and efficient computational technology for the solution of critical problems of mechanics (e.g., least-squares based computational algorithms for the analysis of fluid flows and plate and shell structures).

HONORS AND AWARDS

Significant National and International Awards

- *Fellow* of the American Institute of Aeronautics and Astronautics, May 2005.
- *Distinguished Research Award* of the American Society for Composites, October 2004.
- *The Dow Chemical Best Paper Award* for the paper "Assessment of Plastic Failure of Polymers due to Surface Scratches," (with G. T. Lim and H.-J. Sue) in the General Category of the Failure Analysis and Prevention Special Interest Group at *ANATECH* 2004, Chicago, 2004.
- *Winner* of the Poster Competition in *the International Conference on Polyolefins,* Houston, Texas, 2004.
- *Computational Solid Mechanics* award of the US Association for Computational Mechanics, July 2003.
- *Fellow* of the American Society for Composites (ASC), October 2002.
- *Alumni of Achievement,* the University of Alabama in Huntsville, Alabama, February 4, 2002.
- *TANA Award for Excellence in Education and Research* from the Telugu Association of North America, July 2001, New York.
- *Distinguished Alumni (Engineering)* from the University of Alabama in Huntsville, Huntsville, Alabama, May 11, 2001.
- *Excellence in the Field of Composites Award* from the American Society for Composites, September 2000.
- The *Nathan M. Newmark Medal* from the American Society of Civil Engineers, October 1998.
- *Outstanding Educator Award* from the American Telugu Association (ATA), July 1998, Detroit, MI.
- *Fellow* of the International Association of Computational Mechanics (IACM), 1998.
- The *Melvin R. Lohmann Medal* from Oklahoma State University, Stillwater, Oklahoma, April 1997.
- The *Archie Higdon Distinguished Educator Award* from the American Society of Engineering Education, June 1997.

- The *Charles Russ Richards Memorial Award* of the American Society of Mechanical Engineers (ASME), 1995.
- Distinguished Visiting Professor, Institute for High Performance Computing (IHPC) and the National University of Singapore, 1998-1999.
- *Technical Achievement Award* of the National Academy of Engineering (NAE), 1995.
- *Fellow* of the U.S. Association of Computational Mechanics (USACM), 1995.
- Visiting Professor, Institute for Computer Applications and Design, University of Stuttgart, Germany, 1994.
- NATO Fellow, Middle East Technical University, Ankara, Turkey, 1994.
- *Associate Fellow* of the American Institute of Aeronautics and Astronautics (AIAA), 1994.
- *Fellow* of the American Society of Civil Engineers (ASCE), 1992.
- The *Worcester Reed Warner Medal* of the American Society of Mechanical Engineers (ASME), 1992.
- *Invited Speaker, Southwest Mechanics Lecture Series* (University of Oklahoma, Texas A&M University, Rice University, and University of Houston), 1991.
- *Fellow* of the Aeronautical Society of India, 1991.
- *Oscar S. Wyatt, Jr., Chair Lecture*, Texas A&M University, College Station, Texas, November 11, 1991.
- *Fellow* of the American Society of Mechanical Engineers (ASME), 1989.
- *Visiting Scientist*, Alcoa Laboratories Centennial Technical Seminars on Mechanics, Hilton Head, S.C., 1987.
- *Visiting Professor*, University of Missouri-Rolla, 1986.
- The *Alexander von Humboldt Foundation Research Fellowship*, Germany, 1986.
- The German Academic Exchange Service Research Grant, Germany, 1986.
- *Fellow* of the American Academy of Mechanics (AAM), 1985.
- The *Walter L. Huber Civil Engineering Research Prize*, The American Society of Civil Engineers (ASCE), 1983.
- *Who's Who in Computational Science and Engineering*, 2003.
- *Ralph R. Teetor Education Award*, Society of Automotive Engineers (SAE), l976.
- *2000 Outstanding Scholars of the 21st Century,* First Edition, 2001.
- *Who's Who in Executives and Professionals*, 2001.
- *Highly Cited Researchers*, 2000.
- *Outstanding Man of the 21st Century*, 2000.
- *Dictionary of International Biography*, 27th Edition, l998.
- *Five Hundred Leaders of Influence*, l998.
- *Five Thousand Personalities of the World*, 6th Edition, l998.
- *The International Directory of Distinguished Leadership*, l998, 2001.
- *Outstanding People of the 20th Century*, l998.
- *Who's Who in Engineering Education,* Academic Keys, 2005.
- *Who's Who in America*, 52nd Edition, l998.
- *Men of Achievement*, l994.
- *Most Admired Men & Women of the Year*, l994.
- *Who's Who Among Asian Americans*, l994.
- *Who's Who in Science and Engineering*, 2nd Edition, l994.
- *Who's Who in Technology*, 1979-present, 6th Edition, 1988.
- *Personalities of America*, 4th Edition, l985.

- *Outstanding Young Men of America*, 1979.
- *American Men and Women of Science*, 17th Ed., 1978.
- *Who's Who in the South and Southwest*, 1976-1996 (24th Ed.)
- *Who's Who in Computer Education and Research*, 1975.
- *Who's Who in America*, 2004 (59th edition).
- *American Medal of Honor* (American Biographical Institute), 2006.
- *2000 Outstanding Intellectuals of the 21st Century* (International Biographical Centre, Cambridge, England), 2006.

Significant Institutional Awards

- *Distinguished Achievement in Teaching* Award, Association of Former Students (AFS), Texas A&M University, 2007 (university level).
- *Distinguished Lecture* of the Sigma Xi, Texas A&M University, October 2005.
- *Distinguished Research Award* of the Sigma Xi, Texas A&M University, March 2005.
- *Texas A&M Bush Excellence Award for Faculty in International Research* award, 2003 (university level).
- *Distinguished Achievement in Teaching* Award, Association of Former Students (AFS), Texas A&M University, 2002 (college level).
- *Lockheed Martin Fort Worth Company Excellence in Teaching*, Texas A&M University, College Station, TX 2002 (college level).
- *Distinguished Achievement in Research* Award, Association of Former Students (AFS), Texas A&M University, 2000 (university level).
- *Outstanding Graduate Teaching* award, Department of Mechanical Engineering, Texas A&M University, 1995 (departmental level).
- *Oscar S. Wyatt, Jr. Chair*, Texas A&M University, 1992-present.
- *Clifton C. Garvin Professorship*, Virginia Polytechnic Institute and State University, 1985-1992.
- *Certificates of Teaching Excellence*, Virginia Polytechnic Institute and State University, 1981 and 1990.
- The *Alumni Research Award*, Virginia Polytechnic Institute and State University, 1985 (university level).
- Finalist for *Sporn Teaching Award*, Virginia Polytechnic Institute and State University, 1983 (university level).
- *Outstanding Faculty Achievement in Research* (the FIRST recipient), University of Oklahoma, 1979 (college level).
- *Purple Shaft Award* (given to a caring but tough faculty member) University of Oklahoma, 1978 (department level).

EDITORSHIP OF ARCHIVAL JOURNALS AND SERIES

1. **Editor-in-Chief**, *Mechanics of Advanced Materials and Structures* (formerly, *Mechanics of Composites Materials and Structures*), John Wiley & Sons, Chichester, U.K. (1994-1996); Taylor and Francis, Philadelphia (1997-present).

2. **Editor-in-Chief**, *International Journal for Computational Methods in Engineering Science and Mechanics*, Taylor and Francis, Philadelphia (2005-present); formerly, *International Journal of Computational Engineering Science (IJCES,* Imperial College Press, World Scientific, Singapore (2000-2004).

3. **Editor-in-Chief** (with Y. B. Yang and C. M. Wang) *International Journal of Structural Stability and Dynamics (IJSSD),* World Scientific, Singapore, (2001-present).

4. **Series Editor** *Computational Mechanics and Applied Mathematics*, CRC Press, Boca Raton, Florida, (1995-present).

5. **Editor**, USACM Newsletter, the U.S. Association of Computational Mechanics (USACM) 1988-1993.

6. **Associate Editor,** *Journal of Applied Mechanics*, American Society of Mechanical Engineers, New York (1992-1998).

7. **Associate Editor,** *Journal of Engineering Mechanics*, the American Society of Civil Engineers (ASCE), New York, (1992-1994).

8. **Associate Editor,** *Applied Mechanics Reviews*, American Society of Mechanical Engineers, New York (1997-present).

MEMBERSHIP ON EDITORIAL BOARDS OF JOURNALS (past and present)

1. *Asian Journal of Structural Engineering*, The Building and Housing Research Centre and Iran University of Science and Technology, Tehran, Iran, 1993-present.

2. *Communications in Applied Numerical Methods*, John Wiley, London (1984-present).

3. *Computational Mechanics Advances*, an official publication of the International Association for Computational Mechanics (IACM), North-Holland, The Netherlands (1992-1996).

4. *Computer Methods in Applied Mechanics and Engineering*, Elsevier Science, England (1997-present).

5. *Computers & Structures*, Pergamon Press, London (1985-2002).

6. *Engineering Computations*, MCB University Press, West Yorkshire, England (1984-present).

7. *Engineering Structures*, Elsevier Science, Oxford, England (1997-present).

8. *Finite Elements in Analysis and Design* (the international journal of applied finite elements and computer aided engineering), Elsevier, London; member of the editorial board, 2001-present.

9. *International Journal for Numerical Methods in Engineering*, John Wiley, London (1984-present).

10. *International Journal for Numerical Methods in Fluids*, John Wiley, London (1984-2002).

11. *Journal of Applied Mechanics, the American Society of Mechanical Engineers*, ASME, New York, (Associate Editor, 1992-1999).

12. *Journal of Composites Technology & Research, the American Society of Testing of Materials*, ASTM, Philadelphia (1990-1994).

13. *Journal of Mathematical and Physical Sciences*, the Indian Institute of Technology, Madras, India (1989-present).

14. *Journal of the Aeronautical Society of India*, the Aeronautical Society of India, New Delhi, India (1995-present).

15. *Journal of Aerospace Sciences and Technologies*, the Aeronautical Society of India, Bangalore, India (2003-present)

16. *Mathematical Modeling and Scientific Computing*, the International Association for Mathematical and Computer Modeling, Principia Scientia, St. Louis, 1993-1995.

17. *Modeling and Computational Experiment in Engineering and Technology*, University of Kocaeli, Izmit, Turkey, 1994-1996.

18. *IACM Bulletin*, Newsletter of the International Association of Computational Mechanics, IACM, John Wiley, London, (Editor, 1992-1996).

19. *USACM Newsletter*, the U.S. Association of Computational Mechanics (USACM), (Editor, 1988-1993).

20. *Meccanica*, International Journal of the Italian Association of Theoretical and Applied Mechanics, Kluwer, Netherlands (1989-1994).

21. *International Journal of Non-Linear Mechanics* (Contributing Editor and Editor of Software Survey Section, 1982-1992, Pergamon Press, London; member of the editorial board 1996-present.

22. *Chinese Journal of Solid Mechanics*, (English version of *Acta Mechanica Solida Sinica*,) 1996-present.

23. *Iranian Journal of Science and Technology* (Transactions: Technology), School of Engineering, Shiraz, Iran, 1996-present.

24. *IACM Expressions*, magazine of the International Association of Computational Mechanics, IACM, IACM Secretariat, Barcelona, Spain, (member, 1996-present).

25. *The Institution of Engineers*, Singapore, six journals published by IES, (International Advisory Panel member, 1998-present).

26. *International Journal for Multiscale Computational Engineering*, Begell House, Inc., NY, (Editorial Board member, 2000-present).

27. *Asian Journal of Civil Engineering* (*Building and Housing*), The Building and Housing Research Centre, Tehran, Iran, 1999-present.

28. *Structural Engineering and Mechanics*, Techno-Press, S. Korea, 1999-present.

29. *Acta Mechanica Solida Sinica*, Huazhong University of Science and Technology, Wuhan, Hubei, 430074, 2000-present.

30. *Sadhana* (Academy Proceedings in Engineering Sciences), Indian Academy of Sciences, Bangalore, India, 2001-present.

31. *International Journal of Computational and Numerical Analysis and Applications*, Bulgaria, 2001-present.

32. *International Journal of Mechanics and Materials in Design*, University of Toronto, Canada; member of the editorial board (2002-present).

33. *Manufacturing Technology & Research, An International Journal*, Birla Institute of Technology, Mesra, Ranch, INDIA; member of the editorial board (2003-present).

34. *Interaction and Multiscale Mechanics: an International Journal (IMMIJ)*, Techno-Press, member of the Editorial Board.

GENERAL AND KEY-NOTE LECTURES DELIVERED

1. "Recent Developments in the Analysis of Composite Plates and Shell Structures," *Symposium on Mechanics of Structures*, Faculty of Engineering, University of Rome II, Italy, May 4-7, 1982.

2. "Nonlinear Analysis of Layered Composite Structures," *FEMSA/83 Symposium*, Jan. 10-12, 1983, University of Cape Town, South Africa.

3. "A Shear Deformable Shell Element for Laminated Composites," *NASA Lewis/University/* Industry Workshop on Nonlinear Analysis for Engine Structures, April 19-20, 1983, NASA Lewis Research Center, Cleveland, OH.

4. "On the Transient Response of Laminated Anisotropic Shells," the *17th Israel Convention on Mechanical Engineering*, July 12-14, 1983, Tel Aviv University, Tev Aviv, Israel.

5. "Unilateral Contact Approach to Laminated Plates," the *CISM Symposium on Unilateral Problems in Structural Analysis*, September 22-24, 1983, Ravello, Italy.

6. "On Mixed and Displacement Finite Element Models of a Refined Shear Deformation Theory for Laminated Anisotropic Plates," *Fourth International Conference on Applied Numerical Modeling*, National Cheng Kung University, Tainan, Taiwan, Dec. 28-31, l984.

7. "On Computational Schemes for Global-Local Stress Analysis," *Workshop on Computational Methods for Structural Mechanics and Dynamics*, NASA Langley Research Center, Hampton, VA, June 20-21, 1985.

8. "Finite Element Models of Fluid Flow," *International Symposium on Variational Methods in Geosciences*, University of Oklahoma, October 15-17, 1985.

9. "Finite Element Models of Plates and Shells," *Applications of Mathematics in Mechanics, Ecole Nationale dÍngenieurs de Tunis*, Monastir, Tunisia, July 17-19, 1986.

10. "A Mixed, Updated Lagrangian Computational Model for Plane Elastic Contact Problems," *Symposium on Unilateral Problems in Mechanics*, The International Society for the Interaction of Mechanics and Mathematics, Universita di Roma 2, April 6-8, 1987.

11. "On Refined Theories of Composite Laminates," Alcoa Laboratories, Centennial Technical Seminar on Mechanics: Micromechanics to Product Design Symposium, Hilton Head, SC, April 8-11, 1987.

12. "An Overview of Computational Methods in Composites," invited General Lecture presented at the *10th Conference on Computer Methods in Mechanics*, May 22-28, 1989, Rytro, Poland.

13. "A Computational Model for Study of Local Effects," *International Conference on Engineering Software*, December 4-7, 1989, Indian Institute of Technology, New Delhi, India.

14. "Finite Element Modeling of Structural Vibrations: Recent Developments," a **Keynote Lecture** delivered at the *International Congress on Recent Developments in Air- and Structure-Borne Sound and Vibration*, March 6-8, 1990, Auburn University, AL.

15. "On New Developments in the Refined Theories of Plates," *New Developments in Structural Mechanics*, University of Catania, Italy, July 4-6, 1990.

16. "Modeling of Delamination in Composite Laminates Using a Layer-Wise Plate Theory," *Indo-US Workshop on Composites for Aerospace Applications*, Bangalore, India, July 23-27, 1990.

17. "Current Research in the Modeling of Laminated Composite Structures," *EMRC's Conference and Lecture Program*, Engineering Mechanics Research Corporation, Troy, MI, Oct. 3, 1990.

18. "On the Modeling of Thick Composite Laminates," a **Keynote Lecture** presented at the *First U. S. National Congress on Computational Mechanics*, Chicago, IL, July 21-24, 1991.

19. "Advances in the Modeling of Laminated Plates," a **Keynote Lecture** Presented at the *First International Conference on Computational Structures Technology*, Heriot-Watt University, Edinburg, U.K., August 20-22, 1991.

20. "Global-Local Analysis of Composite Laminates Using Hierarchical Finite Elements and Mesh Superposition," an invited General Lecture presented at the *IBM Europe Institute on Structural Analysis*, Oberlech, Austria, July 20-24, 1992.

21. "Analysis of Composite Laminates Using Variable Kinematic Finite Elements," an invited General Lecture presented at the *7th Brazilian Symposium on Piping and Pressure Vessels,* October 7-9, 1992, Florianopolis, Santa Catarina, Brazil.

22. "The Modeling of Composite Laminates: Intuition to Generality and Theory to Practice," **the Neelakantam Memorial Lecture** presented at the Annual Convention of the Aeronautical Society of India, December 11, 1992, Bangalore, India.

23. "Global-Local Computational Methodologies for the Analysis of Composite Laminates," a **Keynote Lecture** presented at the *International Congress on Computational Method in Engineering*, Shiraz, Iran, May 3-5, 1993.

24. "On Computational Strategies for the Analysis of Thick Composites," an invited General Lecture presented at the *Advanced Technology on Design and Fabrication of Composite Materials and Structures*, Politecnico di Torino, Torino, Italy, May 24-28, 1993.

25. "Recent Developments in the Modeling of Laminated Composite Structures". A **Keynote Lecture** presented at the *Nonlinear Finite Element Analysis and ADINA*, Boston, MA, June 23-25, 1993.

26. "An Evaluation of Equivalent-Single-Layer and Layerwise Theories of Composite Laminates," **Keynote Lecture** presented at the *Seventh International Conference on Composite Structures*, University of Paisley, Scotland, 5-7 July 1993.

27. "Modeling of Composite Structures". An **Opening Lecture** presented at the *Advanced Study Institute on Computational Methods for Engineering Analysis and Design*, Indian Institute of Technology, Madras, India, August 2-11, 1993.

28. "A Multiple Model Approach for Laminated Composite Structures," **a General Lecture** presented at the *First Pan-Pacific Conference on Computational Engineering*, Korea Advanced Study Institute of Science and Technology, Seoul, Korea, November 1-5, 1993.

29. "An Hierarchical Mulit-Model Approach to the Analysis of Laminated Composite Structures," a **Keynote Lecture** presented at the *Third World Congress on Computational Mechanics (WCCM III),* Chiba, Japan, August 1-5, 1994.

30. "Recent Developments in the Modeling of Composite Structures". A **Keynote Lecture** presented at the *Energy Technology Conference & Exhibition (ETCE),* Houston, January 28-February 2, 1996.

31. "A Computational Methodology for Global-Local Analysis of Composite Structures". A **Keynote Lecture** presented at the *Mathematics of Finite Elements and Applications IX (MAFELAP 1996),* Brunel University, Uxbridge, U.K., June 25-28, 1996.

32. "Refined Theories and Computational Procedures for the Modeling of Smart Composite Structures". A **Keynote Lecture** presented at the *First International Conference on Composite Science and Technology,* Durban, South Africa, June 18-20, 1996.

33. "Computational Structural Dynamics: Present and Future". **Keynote Lecture** presented at the *67th Shock & Vibration Symposium*, Monterey, CA, November 18-22, 1996.

34. "Recent Developments in Mechanics of Composite Materials". **Keynote Lecture** presented at the *Second International Conference on the Application of Numerical Methods in Engineering,* Universiti Pertanian Malaysia, Malaysia, June 23-25, 1997.

35. "Developments in Computational Structural Dynamics". **Keynote Lecture** presented at the *Sixth International Conference on Recent Advances in Structural Dynamics,* The Institute of Sound and Vibration Research, University of Southampton, England, July, 14-17 1997.

36. "Recent Developments in Mechanics of Smart Structures". An **Opening Lecture** presented at the *Symposium on Mechanics of Composite Materials (Simpósio em Mecânica dos Materialis Compósitos),* Instituto de Engenharia Mecânica (IDMEC), Instituto Superior Tcnico (IST), Lisbon, Portugal, July 22, 1997.

37. "Theoretical Models and Computational Procedures for the Analysis of Plate Structures," **Karunesh Memorial Lecture** of the *42nd Congress of the Indian Society of Theoretical and Applied Mechanics (ISTAM),* Regional Engineering College, Surat, Gujrat, India, December 28-31, 1997.

38. "Computational Mechanics: Current Trends and Future Directions," **Keynote address** of the *20th World Conference on the Boundary Element Method (BEM20)* University of Central Florida, Orlando, FL, August 19-21, 1998.

39. "Computational Modeling of Local Stress Fields and Delamination Failures in Composite Laminates," **Key Note Lecture** of the *Integrity · Reliability · Failure, An International Conference* University of Porto, Portugal, July 19-22, 1999.

40. "An Overview and Recent Developments in Vibrations of Laminated Composite Plates and Shells," **Keynote Lecture** of the *Asia-Pacific Vibration Conference '99 (A-PVC`99),* Nanyang Technological University, Singapore, December 12-14, 1999.

41. "Future Directions in Computational Methods and Simulations," **Keynote Lecture** of the *Fourth Asia-Pacific Conference on Computational Mechanics (APCOM`99),* National University of Singapore, Singapore, December 14-16, 1999.

42. "Recent Developments and Future Directions in Theoretical and Computational Mechanics," **Keynote Lecture** of the *Twentieth Southeastern Conference on Theoretical and Applied Mechanics (SECTAM XX),* Callaway Gardens, Pine Mountain, Georgia, April 16-18, 2000.

43. "Developments in Structural Dynamics with Special Focus on Shear Deformation Theories of Plates and Shells," **Keynote Lecture** of the *International Conference on Structural Stability and Dynamics,* Taipei, Taiwan, December 7-9, 2000.

44. "Developments in Theoretical and Computational Mechanics of Composite Materials and Structures," **Keynote Lecture** of the *National Conference on Theoretical and Applied Mechanics,* Taipei, Taiwan, December 10-11, 2000.

45. ``A New Mathematical and Computational Basis for BVP and IVP," (with K. S. Surana), **Keynote Lecture** at the *Fifth World Congress on Computational Mechanics,* Vienna, Austria, July 7-12, 2002.

46. "On Computational Modeling of Functionally Graded Materials and Smart Structures," **Keynote Lecture** of the *Second World Engineering Congress,* Kuching, Sarawak, Malaysia, July 22-25, 2002.

47. ``Computational Modeling of Advanced Materials and Structures," *C. S. Krishnamoorthy Memorial Lecture*, Indian Institute of Technology, Madras, December 10, 2002.

48. "The *k*-Version Finite Element Method: A New Computational Methodology for Boundary Value Problems," (with K. S. Surana) **Plenary Lecture,** *International Conference on Smart Materials Structures and Systems*, Indian Institute of Science, Bangalore, India, December 12-14, 2002.

49. "An Accurate and Robust Computational Methodology for Structural Dynamics Problems," (with K. S. Surana) **Plenary Lecture** of the *International Conference on Structural Stability and Dynamics,* Singapore, December 16-18, 2002.

50. "An Overview of Recent Developments in Computational Mechanics," **Keynote Lecture** of the *Joint EACE and AAU International Conference on Earthquake Engineering, Computational Mechanics Geotechnical and Transportation Engineering,* Addis Ababa, Ethiopia, January 6-10, 2003.

51. "Computational Modeling of Advanced Materials and Structures," **Keynote Lecture** of the *VII National Congress on Applied and Computational Mechanics,* Évora, Portugal, April 14-16, 2003.

52. ''Novel Computational Procedures for Modeling of Problems of Mechanics," *Seth Memorial Lecture*, 48th ISTAM (Indian Society of Theoretical and Applied Mechanics) Congress, Dec. 18-21, 2003, Birla Institute of Technology (BIT) Mesra, Ranchi, INDIA.

53. "A Robust Computational Methodology for Numerical Simulation of Physical Processes," **Guest and Plenary Lecture** (and Guest of Honor) at the *International Conference on Theoretical, Applied, Computational and Experimental Mechanics* (ICTACEM 2004), Indian Institute of Technology, Kharagpur, India, December 28-30, 2004.

54. "Computational Modeling of Materials and Structures and New Computational Methodology," **Invited Lecture** at the *US-Africa Workshop on Mechanics and Materials,* University of Cape Town, South Africa, January 23-28, 2005.

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347. V. Prabhakar and J. N. Reddy, "Spectral/hp Penalty Least-squares Finite Element Formulation for Unsteady Incompressible Flows," *International Journal of Numerical Methods for Fluids*, in review.

348. D. H. Robbins, Jr. and J. N. Reddy, "Adaptive Hierarchical Kinematics in Modeling Progressive Damage and Global Failure in Fiber-Reinforced Composite Laminates," *Composites Science and Technology*, in review.

349. J. N. Reddy and S. D. Pang, ``Nonlocal Continuum Theories of Beams for the Analysis of Carbon Nanotubes,'' ASCE *Journal of Engineering Mechanics*, in review.

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351. G. U. Unnikrishnan, V. U. Unnikrishnan, and J. N. Reddy, "Analysis of Fluid Biphasic Interface Boundary and its Applications to Soft Tissue Mechanics," *Journal of Biomechanical Engineering*, in review.

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353. V. U. Unnikrishnan, D. Banerjee, and J. N. Reddy, "Atomistic-Mesoscale Thermal Analysis Of Carbon Nanotube Systems," *International Journal of Thermal Sciences*, in review.

354. Rakesh Ranjan and J.N. Reddy, "Convective Heat Transfer in Porous Materials," Encyclopedia of Agricultural and Biological Engineering, in review.

DETAILS ON BOOKS AUTHORED BY J. N. REDDY

The following books, which deal with modern topics in applied mechanics, engineering analysis, and applied mathematics, were authored and co-authored by Professor J. N. Reddy. Comments in quotes were taken from the published reviews of the books.

- *Variational Methods in Theoretical Mechanics*, by J. T. Oden and J. N. Reddy, Springer-Verlag, New York, 1976; 2nd Edition, 1982; xi, 309 pages. One of the most frequently referenced books on variational methods.

- *A Mathematical Theory of Finite Elements,* by J. T. Oden and J. N. Reddy, Wiley-Interscience, New York, 1976; xii, 429 pages; the book is printed in highly respected Wiley-Interscience Series on Pure and Applied Mathematics, founded by Richard Courant and it is widely referenced by applied mechanics and mathematics researchers.

- *Advanced Engineering Analysis*, by J. N. Reddy and M. L. Rasmussen, John Wiley, New York, 1982; xiv, 488 pages; Krieger Publishing Co., Melbourne, FL, 1990; used as a textbook at several universities.

- *An Introduction to the Finite Element Method*, by J. N. Reddy, McGraw-Hill, New York, 1984; xiii, 495 pages. Fifth printing, 1988. Second edition, 1992; xix, 684 pages. Third Edition, 2006, x*vi,* 766 pages. Also printed as an International Student Edition; Solution manuals for three editions were developed. The book contains source listings of Fortran computer programs. The reviewers acclaimed it as ``an authoritative introduction to the finite element method." The book has received international recognition as one of the leading textbooks in undergraduate and graduate courses on the finite element method. The *differential equation approach* used in the book is well-liked by students, researchers and practitioners in various fields of engineering as well as applied sciences. The book is adopted as a textbook by over hundred and fifty universities over the world.

- *Energy and Variational Methods in Applied Mechanics*, by J. N. Reddy, John Wiley, New York, 1984; xiii, 545 pages. Used as a textbook at several universities; solution manual is available. Received excellent review as a book which ``sets new standards for the subject area." The book is adopted as a textbook at several universities. An extensively revised second edition of the book along with a solutions manual is published in 2002 under the title *Energy Principles and Variational Methods in Applied Mechanics.*

- *Applied Functional Analysis and Variational Methods in Engineering*, by J. N. Reddy, McGraw-Hill, New York, 1986; xiii, 545 pages; Krieger Publishing Co., Melbourne, FL, 1991. Also printed as an international student edition. This is considered to be the most innovative and modern textbook that bridges the gap between the applied mathematician and the engineer. Reviewer comments include: ``Of the numerous texts that have attempted to introduce engineers to functional analysis and its applications, this book *ranks among the very best*"

- *The Finite Element Method in Heat Transfer and Fluid Dynamics,* by J. N. Reddy and D. K. Gartling, CRC Press, Boca Raton, FL, 1994; xiv, 389 pages; Second Edition, 2001, xvi, 469 pages. Received Honorable Mention at the 1994 Association of American Publishers Annual Awards Competition. It is the first book devoted to the *applied* finite element analysis of conduction, convection and radiation heat transfer, viscous incompressible Newtonian and non-Newtonian flows, and coupled heat transfer and fluid mechanics.

- *Mechanics of Laminated Composite Plates: Theory and Analysis*, by J. N. Reddy, CRC Press, Boca Raton, FL, 1997; xiv, 782 pages, and covers basic mechanics of composite materials, theories of laminated plates, and analytical, variational, and finite element analysis of laminated beams and plates. It is the most comprehensive textbook ever published on the subject. According to a review published in *Applied Mechanics Reviews* (**50**, No. 5, May 1997), ``This book is written clearly and illustrated very well. It includes exercises at the end of 12 of (14) chapters, over 500 references to the literature, and a good subject index. *Mechanics of Laminated Composite Plates* should be in the library of every serious analyst in the area of composite structures. There is no other monograph in its class at the present time." The second edition of this book is expanded to include shells. The second edition of the book is titled *Mechanics of Laminated Plates and Shells. Theory and Analysis*, 2004. It is 831 pages and contains additional chapters on theory and analysis of shells.

- *Theory and Analysis of Elastic Plates* by J. N. Reddy, Taylor & Francis, Philadelphia, PA, 1999; covers basic equations of the classical and shear deformation theories elastic plates, and presents analytical and variational solutions. According to a review published in *Applied Mechanics Reviews*, "This new book by J. N. Reddy digests more than two decades of research by him in plate theories (specially for thick plates and laminated composites), variational methods and finite elements into an excellent textbook which can be used very well by beginning or advanced graduate students, or by many engineers who deal with aerospace, automotive and civil engineering structures. That is, the material is presented carefully and reasonably thoroughly, in language that is easy to follow. This is the best textbook that this reviewer has seen for understanding the most important aspects of plate theory, and containing modern, important aspects of plate theory which Timoshenko hardly could touch upon at all (in some cases they were not yet recognized topics); especially thick plates, laminated composites, and finite elements. And yet Reddy's book accomplishes good, useful introductions to all these topics in a mere 540 pages. Theory and Analysis of Elastic Plates is a textbook that clarifies the important aspects of plate theory, emphasizing its most important modern ones. For this purpose it is the best book available, in this reviewer's experience. As such it belongs on the bookshelves of every technical library, and every graduate student or engineer seriously interested in plates, and should become a widely used textbook in graduate level courses."

- *An Introduction to Nonlinear Finite Element Analysis* by J. N. Reddy, Oxford University Press, Oxford, UK, 2004; The objective of this book is to present the theory and computer implementation of the finite element method as applied to simple nonlinear problems of heat transfer and similar field problems, fluid mechanics, and solid mechanics. Both geometric as well as material nonlinearities are considered, and static and transient (i.e. time-dependent) responses are studied. The guiding principle in writing the book was to make the presentation suitable for (a) adoption as a text book for a first course on nonlinear finite element analysis or for a second course following an introductory course on the finite element method, and (b) for use by engineers and scientists from various disciplines for self study and practice. The motivation and encouragement that led to the writing of the present book have come from the users of the author's book, *An Introduction to the Finite Element Method* (McGraw—Hill, Third Edition, 2006), who have found the approach presented there to be most suitable for any one -- irrespective of their scientific background -- interested in learning the method, and also from the fact that there does not exist a book that is suitable as a textbook for a first course on nonlinear finite element analysis. The same approach as that used in the aforementioned book, namely, the *differential equation approach*, is adopted in the present book to introduce the theory, formulation, and computer implementation of the finite element method as applied to nonlinear problems of science and engineering. "It is this reviewer's opinion that J. N. Reddy has captured the essence of the field of nonlinear continuum mechanics in this textbook. The potential readership would be graduate students and researchers involved in constructing solutions to problems inherent to the nonconservative world, and there are many of these problems out there. The mechanics profession, because of computer capabilities, can not only consider these problems but also carry out their solutions." (*AIAA Journal*, 2004).

OTHER RESEARCH ACTIVITIES

INVITED LECTURES, PAPERS, AND SEMINARS PRESENTED

1. "A General Treatment of Complementary Variational Principles in Mathematical Physics", *Seminar on Approximations in Nonlinear Mechanics*, University of Alabama in Huntsville, January 1972.

2. "Mixed Finite Element Approximations for Nonlinear Boundary Value Problems by the Method of Conjugate Projections", (with J. T. Oden) *1972 SIAM Fall Meeting*, Austin, Texas, October 1972.

3. "Accuracy and Convergence of Mixed Finite Element Approximations of Thin Bars, Membranes and Plates on Elastic Foundation", Proc. of the *Fourth Southwestern Graduate Research Conference in Applied Mechanics*, Paper 1B.5., 1973.

4. "Some Mathematical Properties of Certain Mixed Galerkin Approximations in Nonlinear Elasticity", *Computational Methods in Nonlinear Mechanics*, J. T. Oden *et al.* (ed.), University of Texas at Austin, Austin, pp. 627-635, October 1974.

5. "Mathematical Consideration of Mixed Finite Element Approximations in Mechanics", *Solid Mechanics Seminar Series*, Division of Engineering, Brown University, Providence, Rhode Island, February 4, 1974.

6. "Consistency, Stability and Convergence of Mixed Finite Element Approximations", *TICOM Seminar*, Texas Institute for Computational Mechanics, The University of Texas at Austin, March 14, 1974.

7. "Dual Complementary Variational Principles in Mechanics", *Seminar*, School of Aerospace, Mechanical and Nuclear Engineering, University of Oklahoma, Norman, July 25, 1974.

8. "A Finite Element Solution of Nonlinear PDE's in the Hydrodynamics of Hypervelocity Impact", Advances in Computer Methods for Partial Differential Equations, R. Vichnevetsky (ed.), Rutgers University, pp. 220-224, 1975.

9. "On Mixed Hybrid Finite Element Approximations of the Biharmonic Equation", *SIAM-SIGNUM 1975 Fall Meeting*, San Francisco, Dec. 3-5, 1975.

10. "Some Computational Aspects of Mixed Finite Element Approximations", *Proceedings, 12th Annual Meeting of the Society of Engineering Science*, University of Texas, Austin, pp. 965-980, October 1975.

11. "On Hydrodynamics of Hypervelocity Impact by the Finite Element Method", *ASCE National Structural Engineering Convention*, New Orleans, April 14-18, 1975, Meeting Preprint No. 2417.

12. "On Mixed Finite Element Approximations in Continuum Mechanics: Theory and Practice," *The 14th International Union of Theoretical and Applied Mechanics*, Delft, The Netherlands, Aug. 30-Sept. 4, 1976.

13. "A Finite Element Formulation of High-Velocity Impact", *Proceedings of the AIAA/ASME/SAE 17th Structures, Structural Dynamics and Materials Conference*, King of Prussia, Pennsylvania, May 5-7, pp. 313-323, 1976.

14. "Alternate Finite Element Formulation of Incompressible Fluid Flow with Application to Geological Folding" (with K. H. Patil), *Applications of Computer Methods in Engineering*, Vol. I, L. C. Wellford, Jr. (ed.), University of Southern California, Los Angeles, pp. 179-190, 1977.

15. "Numerical Solution of Linear Integral Equations by the Finite Element Method" (with V. D. Murty), *15th Midwestern Mechanics Conference*, Chicago, IL, March 23-25, 1977.

16. "Dynamic Response of a Geometrically Nonlinear Composite Elastic-Viscoelastic Cylinder" (with A. K. Neighbors and T. L. Cost), *CANCAM 77*, Vancouver, B.C., May 30-June 3, 1977.

17. "Stability of Thin Rectangular Plates Using a Simplified Finite Element" (with Chen-Shyh Tsay), *15th Midwestern Mechanics Conference*, Chicago, IL, March 23-25, 1977.

18. "Mixed Rectangular Finite Elements for Plate Bending" (with C. S. Tsay), *Proceedings of the Oklahoma Academy of Science*, Vol. 57, pp. 144-148, 1977.

19. "Large Deflection and Large Amplitude Free Vibrations of Thin Rectangular Plates Using Mixed Isoparametric Elements" (with J. D. Stricklin), *Applications of Computer Methods in Engineering*, Vol. II, L. C. Wellford, Jr. (ed.), University of Southern California, Los Angeles, pp. 1323-1335, 1977.

20. "Free Vibration of Thin Rectangular Plates by a Mixed Finite Element" (with C. S. Tsay), *Sixth ASME Mechanical Vibrations Conference*, Chicago, Illinois, Sept. 26-28, 1977, ASME Paper No. 77-DET-143.

21. "Mathematical Theory of Mixed and Penalty Finite Element Methods Applied to Thin Elastic Plates and Incompressible Fluid Flow Problems", *Seminar*, Institute of Mathematics, University of Rome, Italy, November, 1977.

22. "Mixed Finite Elements in Bending, Stability, and Vibration of Thin Plates", *Seminar*, Institute of Structural Engineering, Univ. of Rome, Italy, Nov., 1977.

23. *"Theory of Finite Elements", a series of lectures delivered to the Department of Structures, University of Calabria, Cosenza, Italy, November, 1977.

24. *"Design of Stable Numerical Schemes in Atmospheric Models", presented at the *Joint IUTAM/IUGG Symposium on Monsoon Dynamics*, December 5-9, 1977, New Delhi, India.

25. "The Finite Element Method in Engineering Science and Mechanics", *Mathematics Colloquium*, Oklahoma State University, Stillwater, 1978.

26. "Primitive Variable Finite Element Formulations of Incompressible Fluid Flow: Theory and Application" (with K. H. Patil), *Developments in Theoretical and Applied Mechanics (proceedings of Ninth SECTAM*) Vanderbilt University, Nashville, pp. 113-123, 1978.

27. "On the Finite Element Method with Penalty for Incompressible Fluid Flow Problems", *Proceedings of MAFELAP* (The Mathematics of Finite Elements and Applications III J. R. Whiteman (ed.), Academic Press, London, pp. 227-235, 1979), Brunel University, Uxbridge England, April 1978.

28. "Penalty Velocity-Stream Function Finite Element Models for Free Convection Heat Transfer Problems" (with D. R. Mamidi), *Recent Advances in Engineering Science*, R. L. Sierakowski (ed.), University of Florida, Gainesville, pp. 381-386, 1978.

29. "Simple Finite Elements with Relaxed Continuity for Nonlinear Analysis of Plates", *Finite Element Methods in Engineering* (Proc. 3rd Int. Conference in Australia on Finite Element Methods), A. P. Kabaila and V. A. Pulmano (eds.), The University of New South Wales, Sydney, pp. 265-281, 1979.

30. "Penalty Finite Element Methods for the Solution of Advection and Free Convection Flows", *Finite Element Methods in Engineering*, (``Proc. 3rd Int. Conference in Australia on Finite Element Methods), A. P. Kabaila and V. A. Pulmano (eds.), The University of New South Wales, Sydney, pp. 583-598, 1979.

31. *"Mathematics of Finite Elements", a series of lectures delivered at Tata Institute of Fundamental Research, Bangalore (on the campus of the Indian Institute of Science), July 1979.

32. "On the Existence and Accuracy of Solutions to Penalty Finite Element Models of Viscous Incompressible Flows," paper presented at the *l6th Annual Meeting of the Society of Engineering Science*, Northwestern University, Evanston, Sept. 5-6, 1979.

33. "Penalty-Finite Elements for Nonlinear Problems with Linear Equality Constraints", invited by the Mathematical Methods Committee of the *Third ASCE/EMD Specialty Conference*, University of Texas, Austin, Texas, Sept. 17-19, 1979.

34. "A Penalty Finite Element for Nonlinear Analysis of Thin and Moderately Thick Plates", *Developments in Mechanics*, Vol. 10 (Proceedings of the 16th Midwestern Mechanics Conference), S. C. Sinha, et al. (eds.), Kansas State University, Manhattan, Sept. 19-21, pp. 213-217, 1979.

35. "Finite Element Analysis of Free Convection in Enclosures", *Seminar on Numerical Methods in Engineering*, Wichita State University, Wichita, Kansas, October 1979.

36. * "Analysis of Plates Constructed of Fiber Reinforced Bimodulus Materials", (with C. W. Bert), *Mechanics of Bimodulus Composite Materials*, session at the Winter Annual Meeting of ASME, New York City, New York, December 2-7, 1979. *Mechanics of Bimodulus Materials* (edited by C. W. Bert), ASME AMD Vol. 33, pp. 67-83, 1979. Appeared in *Mechanics of Bimodulus Materials* (edited by C. W. Bert), ASME AMD Vol. 33, pp. 67-83, 1979.

37. "A Comparison of Closed-Form and Finite-Element Solutions of Layered Composite Plates", *Seminar*, Department of Engineering Science and Mechanics, Virginia Polytechnic Institute and State University, Blacksburg, VA, February, 1980.

38. "The Finite Element Analysis of Thick Laminated Anisotropic Rectangular Plates", *Solid Mechanics Seminar*, Department of Applied Mechanics and Engineering Sciences, University of California, San Diego, May, 1980.

39. "Analysis of Thick Rectangular Plates Laminated of Bimodulus Composite Material" (with C. W. Bert, V. S. Reddy, and W. C. Chao), *AIAA/ASME/ASCE and AHS 21st Structures, Structural Dynamics and Materials Conference,* Seattle, May 12-14, 1980.

40. "On the Mathematical Theory of Penalty-Finite Elements for Navier-Stokes Equations", *Third Int. Conf. on Finite Elements in Flow Problems*, Banff, Alberta, Canada, June 10-13, pp. 146-154, 1980.

41. "A Finite Element Approach to Combined Conductive and Radiative Heat Transfer in a Planar Medium" (with R. Fernandes and J. Francis), *15th AIAA Thermophysics Conference*, July 14-16, 1980, Snowmass, Colorado.

42. "Large Deflection and Large Amplitude Free Vibrations of Laminated Composite-Material Rectangular Plates" (with W. C. Chao), *Symposium on Computational Methods in Nonlinear Structural and Solid Mechanics*, George Washington Unviversity, October 6-8, pp. 371-376, 1980.

43. "On the Development of a Shear Deformable Finite Element for the Analysis of Layered Composite Plates and Shells", *17th Annual Meeting of the Society of Engineering Science*, December 10-12, 1980, Georgia Institute of Technology, Atlanta.

44. "Thermal Bending of Thick Rectangular Plates of Bimodulus Composite Materials" (with C. W. Bert et al.), *17th Annual Meeting of the Society of Engineering Science*, December 10-12, 1980, Georgia Institute of Technology, Atlanta.

45. * "The Finite Element Method in Incompressible Fluid Flow", lectures delivered at a short course, *Advances in Computational Fluid Dynamics*, The University of Tennessee Space Institute, TN, December, 1980.

46. "Numerical Solution of Three-Dimensional Navier-Stokes Equations by a Penalty Function Formulation", *Seventeenth Midwestern Mechanics Conference*, May 6-8, 1981, The University of Michigan, Ann Arbor, Michigan.

47. "Bending and Free Vibration of Thick Beams Made of Bimodulus Materials", (with C. W. Bert and A. D. Tran) *Seventeenth Midwestern Mechanics Conference*, University of Michigan, Ann Arbor, MI, May 6-8, 1981.

48. "A Finite-Element Analysis of Bimodulus Composite Plates and Shells", *Proc. IX th International Congress on the Application of Mathematics in Engineering*, June 28-July 5, 1981, Weimar, DDR (East Germany), pp. 30-34, 198l.

49. "The Finite Element Method in the Analysis of Incompressible Fluid Flows", *Seminar*, Bhabha Atomic Research Center, Bombay, India, June 30, 1981.

50. "Finite-Element Analysis of Three-Dimensional Navier-Stokes Equations by the Penalty Function Method", *Seminar*, Department of Chemical Engineering, University of Naples, Italy, July 2, 1981.

51. "On the Nonlinear Analysis of Layered Composite-Plates: A Review of Recent Advances", *Seminar,* Department of Structures, University of Calabria, Cosenza, Italy, July 4, 1981.

52. "On Thermal Bending of Layered Composite Plates and Shells of Bimodulus Materials" (with C. W. Bert and Y. S. Hsu), *Numerical Methods in Thermal Problems*, Vol. II, R. W. Lewis, *et al*. (eds.), Pineridge Press, Swansea, U.K., 1981, pp. 384-395 (paper presented at the Second Int. Conf. Numer. Meth. in Thermal Problems, July 7-10, 1981, Venice, Italy).

53. "On the Finite-Element Analysis of Ordinary and Bimodulus-Material Plates and Shells", *Seminar*, The International Center for Mechanical Sciences, Udine, Italy, July 9, 1981.

54. "Natural Convection Between Concentric (Horizontal) Circular Cylinders by a Penalty-Finite Element Method", (with A. Satake), *Numerical Methods in Laminar and Turbulent Flow*, C. Taylor and B. A. Shrefler (eds.), Pineridge Press, Swansea, U.K., 1981, pp. 969-980 (paper presented at the Second Int. Conf. in Numer. Meth. in Laminar and Turbulent Flows, July 10-13, 1981, Venice, Italy.)

55. "Large-Deflection Vibration of Cross-Ply Laminated Rectangular Plates with Certain Edge Conditions", (with W. C. Chao), *18th Annual Meeting of the Society of Engineering Science*, September 2-4, 1981, Brown University, RI.

56. "Nonlinear Vibration of Layered Composite Plates Including Transverse Shear and Rotatory Inertia", *1981 (ASME) Vibration Conference*, September 20-23, 1981, Hartford, Connecticut ASME Paper No. 81-DET-144.

57. "Large Deflection Analysis of Thick, Orthotropic, Axisymmetric Annular Plates", presented at *ASME Winter Annual Meeting*, November 15-20, 1981, Washington, D.C., ASME Paper No. 81-WAM/DE-3.

58. "Nonlinear Oscillations of Laminated, Anisotropic, Thick Rectangular Plates", (with W. C. Chao), *Symposium on Structures and Materials II: Impact and Vibrations of Composites and*

Structures, ASME Winter Annual Meeting, November 15-20, 1981, Washington, D.C.; Advances in Aerospace Structures and Materials, AD-01, pp. 115-125, 1981.

59. "A Finite-Element Analysis of Large-Deflection Bending of Laminated Anisotropic Shells", *Symposium on Nonlinear Finite-Element Analysis of Shells, 1981 ASME Winter Annual Meeting*, November 15-20, 1981, Washington, D.C.; Nonlinear Finite Element Analysis of Plates and Shells, AMD-Vol. 48, pp. 249-264, 1981.

60. "Vibration and Buckling of Thick Cylindrical Shells of Bimodulus Composite Materials", (with C. W. Bert), *Symposium on Structures and Materials II: Impact and Vibrations of Composites and Structures,* ASME Winter Annual Meeting, November 15-20, 1981, Washington, D.C.; Advances in Aerospace Structures and Materials, AD-01, pp. 109-114, 1981.

61. "Nonlinear Transient Analysis of Composite Plates", *Seminar*, Department of Mechanical Engineering, Texas A&M University, College Station, Texas, January 29, 1982.

62. "Analysis of Bimodular-Material Composite Plates", *Solid Mechanics Seminar*, Division of Applied Mechanics, Stanford University, Stanford, CA, Feb. 4, 1982.

63. "Finite Element Simulation of Three-Dimensional Viscous Incompressible Fluid Flows" *Fluid Mechanics Seminar*, Department of Aeronautics and Astronautics, Stanford University, Stanford, CA, Feb. 2, 1982.

64. "Finite Element Applications to Incompressible 3D Fluid Flow Problems", *Seminar in the Joint Inst. for Aeronaut. and Acoust.*, Stanford University, Feb. 1, 1982.

65. "Nonlinear Vibration of Rectangular Composite Plates with Rectangular Cutouts", *Proc. Eleventh Southeastern Conference on Theoretical and Applied Mechanics*, April 8-9, 1982, Developments in Theoretical and Applied Mechanics, T. J. Chung and G. R. Karr (eds.), University of Alabama in Huntsville, pp. 329-240, 1982.

66. "A Penalty-Finite Element with Variable Penalty Parameter for Incompressible Fluid Flow", *Eleventh Southeastern Conference on Theoretical and Applied Mechanics*, April 8-9, 1982, University of Alabama in Huntsville, Alabama.

67. "Computational Aspects of the Large Deformation Dynamic Response of Structures Subjected to Intense Impulsive Loading", *ARO Workshop on Computational Aspects of Penetration Mechanics*, Ballistic Research Laboratory, Aberdeen Proving Ground, Maryland, 27-29 April, 1982.

68. "Finite-Element Analysis of Bimodular Composite Plates", *Symposium on Finite Element Methods and Their Applications*, International Congress on Technology and Technology Exchange, 3-6 May 1982, Pittsburgh(PA).

69. "Mechanics of Bimodular Composite Structures", (with C. W. Bert) in *Mechanics of Composite Materials: Recent Advances*, Z. Hashin and C. T. Herakovich (eds.), Pergamon

Press, pp. 323-337, 1983 (Proc. IUTAM Symp. held at Virginia Polytechnic Institute, June 1982).

70. "Transient Analysis of Layered Composite Plates Using a Shear Deformation Theory", (with D. J. Mook) *Computational Methods and Experimental Measurements*, G. A. Keramidas and C. A. Brebbia (eds.), Springer-Verlag, Berlin, pp. 737-748, June 30-July 2, 1982, Washington, D. C.

71. "Finite-Element Simulation of Natural Convection in Three-Dimensionl Enclosures", *AIAA/ASME Fluid, Plasma, Thermophysics, and Heat Transfer Conference*, June 7-9, 1982, St. Louis, Mo., ASME Paper No. 82-HT-71.

72. * "Finite-Element Analysis of Three Dimensional Incompressible Flows by Penalty Function Methods", *Fourth International Symposium on Finite Element Methods in Flow Problems*, July 26-29, 1982, Tokyo, Japan.

73. "On Penalty Function Finite Element Models for the Analysis of Three-Dimensional Flows", *10th IMACS World Congress on Systems Simulation and Scientific Computation*, August 8-13, 1982, Montreal, Canada.

74. "Nonlinear Transient Response of Layered Composite Plates", *International Conference on Finite Element Methods*, August 2-6, 1982, Shanghai, Peoples' Republic of China.

75. * "Nonlinear Transient Analysis of Composite Plates", *Mechanics of Composites Review*, The Materials Laboratory, Wright-Patterson Air Force Base, October 5-7, 1982.

76. "Computational Strategy for Nonlinear Analysis of Bimodular-Material Structures", *ASCE National Convention*, New Orleans, October 25-29, 1982.

77. * "Forced Motions of Anisotropic Composite Plates", *Dynamics of Composite Materials*, session at the 19th Annual Meeting of the Society of Engineering Science, University of Missouri-Rolla, October 27-29, 1982.

78. "On an Isoparametric Finite Difference Energy Method and a Five-Node Finite Element for the Solution of Fluid Flow Problems", (with R. Tam), *19th Annual Meeting of the Society of Engineering Science*, October 27-29, 1982, University of Missouri-Rolla, Rolla.

79. * "Large Deflection Bending of Laminated Shells", (with W. C. Chao), *19th Annual Meeting of the Society of Engineering Science*, October 27-29, 1982, University of Missouri-Rolla, Rolla.

80. "Geometrically Nonlinear Analysis of Layered Composite Shells", (with W. C. Chao), *Advances in Aerospace Structures and Materials*, AD-03, pp. 25-28, 1982 Winter Annual Meeting of ASME, Phoenix, Arizona, Nov. 14-19, 1982.

81. "Three-Dimensional Finite-Element Analysis of Layered Composite Plates", (with N. S. Putcha), *Advances in Aerospace Structures and Materials*, AD-03, pp, 29-35, 1982 Winter Annual Meeting of ASME, Phoenix, Arizona, Nov. 14-19, 1982.

82. "Penalty Function Methods in Mechanics: A Review of Recent Advances", *Penalty Finite Element Methods in Mechanics*, AMD-Vol. 51 pp. 1-20, 1982, The American Society of Mechanical Engineers, New York.

83. * "Nonlinear Analysis of Layered Composite Plates", *Proceedings of FEMSA-83 International Symposium on Design and the Finite Element Method*, University of Cape Town, Jan. 10-12, 1983.

84. *Four lectures on "The Techniques and Formulations in Finite Element Analysis of Composite Structures and Fluid Dynamics", *National Research Institute for Mathematical Sciences*, Council for Scientific and Industrial Research, Pretoria, South Africa, Jan. 17-21, 1983.

85. * "Application of Penalty Function-Finite Elements to Problems in Fluids and Solids", *Mechanical and Aerospace Engineering Department*, West Virginia University, April, 1983.

86. "A Shear Deformable Shell Element for Laminated Composites", (with W. C. Chao) *Proceedings of the NASA Lewis/University/Industry Workshop on Nonlinear Analyses for Engine Structures*, NASA Lewis Research Center, April 19-20, 1983.

87. * "On a Refined Theory of Plates", *Seminar,* Department of Mechanical Engineering, The City College of the City University of New York, New York, May 1984.

88. "On Exact Solutions of Cross-Ply Laminated Thick Shells", *Proc. of the l8th Midwestern Mechanics Conference*, University of Iowa, Iowa City, May 16-18, 1983.

89. "Dynamic Response of Layered Anisotropic Composite Plates by a 3-D Element", (with N. S. Putcha) ASCE/EMD Speciality Conference, May 23-25, 1983, Purdue University, West Lafayette, Indiana.

90. "A Unilateral Contact Approach to Debonding in Layered Composite Plates", (with A.Grimaldi), *Second U.S.-Japan Conference on Composite Materials*, June 6-8, 1983, NASA Langley Research Center, Hampton, Virginia.

91. "Mechanical Behavior of Bimodular-Material Composite Plates Under Dynamic Loads", *Ninth U.S. National Congress of Applied Mechanics*, June 21-25, 1983, Cornell University, Ithaca, New York.

92. * "Elastic-Plastic and Nonlinearly-Elastic Analysis of Laminated Composites", (with T. Kuppusamy) *Int. Symposium on Current Theories of Plasticity and Their Applications*, University of Oklahoma, Norman, July 30-August 3, l984.

93. "A Unilateral-Contact Approach to Delamination in Plates", (with A. Grimaldi) *Proc. Fourth International Conference on Mathematical Modelling*, Zurich, Switzerland, August 15-17, 1983.

94. "On Delamination in Plates: A Unilateral Contact Approach", (with A. Grimaldi), *Proceedings of the Second Meeting on Unilateral Problems in Structural Analysis*, Ravello, Italy, September 22-24, 1983.

95. "Large Deformation Analysis of Layered Composite Shells", (with W. C. Chao), *Mechanics of Composite Materials and Structures*, AMD-Vol. 58, pp. 19-31, Winter Annual Meeting of ASME, November 15-18, 1983, Boston.

96. "A Mixed Shell Finite Element for Laminated Composites", (with N. S. Putcha, *Advances in Aerospace Structures, Materials and Dynamics*, AD-06, pp. 31-39, Winter Annual Meeting of ASME, November 15-18, 1983, Boston.

97. "An Accurate Prediction of Natural Frequencies of Laminated Plates by a Higher-Order Theory", *Advances in Aerospace Structures, Materials and Dynamics*, AD-06, pp. 157-162, Winter Annual Meeting of ASME, November 15-18, 1983, Boston.

98. "Influence of Rotatory Inertia and Transverse Shear Deformation on Flexural Vibration of Plates", (with N. D. Phan) *12th Southeastern Conf. on Theoret. and Appl. Mech.*, Callaway Gardens, GA, May 10-11, 1984.

99. "On Extensions of Hencky-Kromm Theories of Plates", *12th Southeastern Conf. on Theoret. and Appl. Mech.*, Callaway Gardens, GA (hosted by Auburn University), May 10-11, 1984.

100. "On the Numerical Study of Non-Newtonian Fluids in Two-Dimensional Enclosures", (with D. G. Baird), *12th Southeastern Conference on Theoretical and Applied Mechanics*, Callaway Gardens, GA (hosted by Auburn University), May 10-11, 1984.

101. "Numerical Experiments with the Five-Node Rectangular Element in the Analysis of Incompressible Fluids", *1984 ASCE Spring Convention*, May 14-16, 1984, Atlanta, GA.

102. "A Refined Shear Deformation Theory for Laminated Anisotropic Plates", *Second Army Conference on Applied Mathematics and Computing*, Rensselaer Polytechnic Institute, Troy, New York, May 22-25, l984.

103. "Dynamic Analysis of Laminated Plates Using a Higher-Order Theory", (with N. D. Phan) *25th Structures, Structural Dynamics and Materials Conference*, Palm Springs, CA, May l4-l6, l984, pp. 20l-205.

104. "A Refined Higher-Order Theory of Laminated Composite Shells", *1984 ASCE-EMD Specialty Conference*, University of Wyoming, August 1984.

105. "Elastic-Plastic and Nonlinearly-Elastic Analysis of Laminated Composites", (with T. Kuppusamy) *Int. Symp. on Current Theories of Plasticity and Their Applications*, University of Oklahoma, Norman, OK, July 30 - Aug. 3, l984.

106. "A Refined Transverse Shear Deformation Theory for Laminated Anisotropic Plates", *Mechanical Engineering Seminar*, Yale University, New Haven, Connecticut, September 1984.

107. "A Refined Shear Deformation Theory for Laminated Composite Plates", *Seminar, Department of Mechanical Engineering*, Florida State University, Tallahassee, FL, September, 1984.

108. "Nonlinear Material Models for Laminated Composite Plates and Shells", (with K. Chandrashekhara) *21st Annual Meeting of the Soc. Of Engng. Sci.*, VPI&SU, Blacksburg, Oct. 15-17, 1984.

109. "A Refined Shear Deformation Theory for Laminated Shells", (with C. F. Liu) *21st Annual Mtg. of the Soc. of Engng. Sci.*, VPI&SU, Blacksburg, Oct. 15-17, 1984.

110. "Free Edge Stress Reduction in a Capped Laminate", (with P. R. Heyliger) *21st Annual Mtg. of the Soc. of Engng. Sci.*, VPI&SU, Blacksburg, Oct. 15-17, 1984.

111. "On Dynamics of Laminated Anisotropic Plates Using a Refined Mixed Plate Element", (with N. S. Putcha), *Dynamics and Vibrations*, 1984 ASME Winter Annual Meeting, New Orleans, Dec. 1984.

112. "On Modeling of Delamination in Laminated Plates", (with A. Grimaldi and D. Frederick), *Advances in Fracture Research*, Vol. 4, edited by S. R. Valluri, *et al.*, (*Proc. of the Sixth Int. Conf. on Fracture*, New Delhi, India, Dec. 4-l0, l984), pp. 2923-293l.

113. "On Mixed and Displacement Finite Element Models of a Refined Shear Deformation Theory for Laminated Anisotropic Plates", *Proc. Fourth International Conference on Applied Numerical Modeling*, National Cheng Kung University, Tainan, Taiwan, Dec. 27-29, l984, pp. 64-72, l984.

114. "The Finite Element Method -- A Child of the Computer Age", *Seminar*, Wright State University, Dayton, Ohio, March 1985.

115. "The Finite Element Method in Engineering Science", *Seminar*, Chemical and Metallurgial Engineering Department, University of Nevada, Reno, March 1985.

116. "Computational Models of Contact Stress Problems", *ONR Workshop on Computational Methods and Shell Structures*, Stanford University, Stanford, CA, March 26-27, l985.

117. "Penalty Function Method in the Finite-Element Analysis of Problems in Mechanics", *Seminar*, Department of Mechanical Engineering, Auburn University, Auburn, Alabama, April 1985.

118. "Computational Solid Mechanics: Global/Local Analysis", *Seminar*, George Washington University on NASA Langley Research Center, Hampton, VA, May 1985.

119. "On the Solvability and Computational Aspects of a Higher-Order Shear Deformation Theory of Plates", *Third Army Conference on Applied Mathematics and Computing*, Georgia Institute of Technology, Atlanta, GA, May l3-l6, l985.

120. "Analysis of Adhesive Joints: Computational Methods and Experiments", (with D. Post), Adaptive Mesh Refinements and Nonlinear Analyses session of Recent Advances in Computational Mechanics, *Joint ASME/ASCE Mechanics Conference*, Albuquerque, New Mexico, June 24-26, l985.

121. "On Mixed Formulations of Various Plate Theories", Reduced Integration and Mixed Elements session of Recent Advances in Computational Mechanics, *Joint ASME/ASCE Mechanics Conference*, Albuquerque, New Mexico, June 24-26, l985.

122. "Recent Developments and Trends in Computational Natural Convection", (with D. Pelletier and J. Schetz) Computational Fluid Mechanics session of Recent Advances in Computational Mechanics, *Joint ASME/ASCE Mechanics Conference*, Albuquerque, New Mexico, June 24-26, l985.

123. "On Computational Schemes for Global-Local Stress Analysis", *Workshop on Computational Methods for Structural Mechanics and Dynamics*, W. J. Stroud, *et al.* (eds.), Conference Publication 3034, pp. 123-134, NASA Langley Research Center, Hampton, VA, June 29-21, 1985.

124. "On a Higher Order Shear Deformation Theory for Laminated Plates", *Seminar*, L.T.A.S. Dynamique des Constructions Mechaniques, Universite de Liege, June 1985.

125. "Mixed Formulations of Various Plate Theories", *Seminar*, School of Aerospace, Mechanical and Nuclear Engineering, University of Oklahoma, October, 1985.

126. "Stress Prediction in Composite Panels", *Seminar*, NASA Langley Research Center, Hampton, VA, November 15, 1985.

127. "On Higher-Order Shear Deformation Plate Theories and Mixed Finite Element Models", *Seminar*, Civil and Environmental Engineering, University of Rhode Island, Kingston, Rhode Island, November, 1985.

128. "Finite Element Methods of Fluid Flow", *Seminar*, Defense Metallurgical Research Laboratory, Hyderabad, India, Nov. 25, 1985.

129. "Nonlinear Analysis of Composite Laminates", *Seminar*, Defense Metallurgical Research Laboratory, Hyderabad, India, Nov. 26, 1985.

130. "Nonlinear Material Models of Composite Plates and Shells", *Seminar*, Bhabha Atomoic Research Center, Trombay, India, Dec. 5, 1985.

131. "Nonlinear Finite Element Models of Laminated Plates and Shells", (with K. Chandrashekhara), *Int. Conference on Finite Elements in Computational Mechanics*, Indian Institute of Technology, Bombay, India, Dec. 2-6, 1985.

132. * "The Finite Element Method: Intuition to Generality and Practice", *The Clifton C. Garvin Distinguished Professorship Lecture*, Dec. 10, 1985, Virginia Polytechnic Institute, Blacksburg, VA 24061.

133. "The Finite Element Method: A Decade of Innovation and Maturity", *Seminar*, The City College of New York and Columbia University Joint Seminars in Engineering Mechanics (the first seminar), Feb. 19, 1986.

134. * "Some Ideas on the Modeling of Thick-Section Composites", *Navy Workshop on Stiffened Shell Structures*, Washington, D.C., March 17-18, 1986.

135. * "On Kinematic and Constitutive Models of Laminated Composite Plates", *ARO Workshop on Constitutive Models*, Virginia Polytechnic Institute and State University, Blacksburg, March 24-26, 1986.

136. "Penalty Variational Formulation of Viscous Incompressible Fluid Flows", *Variational Methods in Geosciences*, Y. K. Sasaki (ed.), Elsevier, Amesterdam, 1986.

137. "Mixed Variational Formulations of Various Theories of Laminated Composite Plates", *Computational Mechanics '86 Theory and Applications*, Vol. 1 (G. Yagawa and S. N. Atluri, eds.), pp. IV-213 to IV-223, Springer-Verlag, Tokyo, 1986.

138. "On a Third-Order Shear Deformation Theory for Laminated Composite Shells", (with C. F. Liu), *Proc. Int. Symp. on Composite Materials and Struct.*, Beijing, China, June 10-13, 1986, pp. 288-294.

139. "Nonlinear Analysis of Composite Laminates Accounting for Elastic-Plastic Material Behavior", (with K. Chandrashekhara), *Proc. Int. Symp. on Composite Materials and Struct.*, Beijing, China, June 10-13, 1986, pp. 162-167.

140. * "On Refined Theories of Laminated Composite Plates", *Space Science and Technology Colloquia*, ISRO-IISC Space Technology Cell, Indian Institute of Science, Bangalore, India, 25 June 1986.

141. "Current Research Trends in Composite Mechanics", *Seminar*, ISRO Satellite Center, Bangalore, India, June 27, 1986.

142. "Finite Element Models of Fluid Flow with Heat Transfer", Seminar, Indian Institute of Technology, Madras, India, June 30, 1986.

143. "Nonlinear Vibrations of Laminated Composite Plates Using Mixed Shear Deformable Elements", (with C. F. Liu), *1986 Joint ASME PVP and Computer Engng. Div. Conference and Exhibition*, July 20-24, 1986, Chicago, Illinois.

144. "Analysis of Laminated Composite Plates Using Higher-Order Shear Deformation Theories", *Seminar*, Technical University of Munich, West Germany, July 24, 1986.

145. "Nonlinear Analysis of Laminated Composite Plates and Shells", *Seminar*, University of Wuppertal, West Germany, August 14, 1986.

146. "Transient Analysis of Laminated Plates and Shells with Elastic-Plastic Material Behavior", (with K. Chandrashekhara) *23rd Annual Meeting of the Society of Engineering Science*, State University of New York, Buffalo, August 25-27, 1986.

147. "A First-Ply-Failure Analysis of Composite Laminates", (with A. Pandey), *23rd Annual Meeting of the Society of Engineering Science*, State University of New York, Buffalo, August 25-27, 1986.

148. "On the Solutions of Shear Deformation Theories of Plates", (with A. Khdeir and L. Librescu), *23rd Annual Meeting of the Society of Engineering Science*, State University of New York, Buffalo, August 25-27, 1986.

149. * "A Critical Review and Generalization Shear Deformable Plate Theories", (with L. Librescu) *EUROMECH Colloquium 219 On Refined Dynamical Theories of Beams, Plates, and Shells and Their Applications*, Gesamthochschule Kassel Universität, West Germany, Sept. 23-26, 1986.

150. "A Generalization of the Theory of Anisotropic Laminated Composite Plates", (with L. Librescu), *First Conference on Composite Materials*, Dayton, OH, October 7-9, 1986.

151. "On Refined Kinematic Modeling of Thick Laminated Composite Plates", *Solid Mechanics Seminar Series*, Department of Mechanical and Industrial Engineering, Clarkson University, Potsdam, TN, December 9, 1986.

152. "Some Recent Developments in the Modeling of Thick Laminated Composite Plates", *Graduate Mechanics Seminar*, Department of Engineering Science and Mechanics, University of Tennessee, Knoxville, TN, October 14, 1986.

153. "On Refined Theories of Laminated Composite Plates", *Seminar*, Department of Engineering Mechanics, Ohio State University, Columbus, OH, October 17, 1986.

154. "On the Numerical Modeling of Laminated Composite Structures", *Seminar*, General Motors Research Laboratories, January 9, 1987.

155. "Nonlinear Viscoelastic Analysis of Adhesively Bonded Joints",(with S. Roy) *Tire Society Meeting*, University of Akron, OH, March 1987.

156. * "A Mixed, Updated Lagrangian Computational Model for Plane Elastic Contact Problems", *Symposium on Unilateral Problems in Mechanics*, The International Society for the Interaction of Mechanics and Mathematics, Universita di Roma 2, April 6-8, 1987.

157. "A Post-First-Ply Failure Analysis of Composite Laminates", (with A. K. Pandey), *28th AIAA/ASME/ASCE/AHS Structures, Structural Dynamics and Materials Conference*, Monterey, CA, April 6-8, 1987.

158. "Geometric and Material Nonlinear Analysis of Laminated Composite Plates and Shells", (with D. Rourk), *28th Structures, Structural Dynamics and Materials Conference*, Monterey, CA, April 6-8, 1987.

159. "A Locally Implicit Scheme for Navier-Stokes Equations", (with K. C. Reddy and S. Nayani), *Fifth SSME CFD Working Group Meeting*, NASA Marshall Space Flight Center, Alabama, April 21-23, 1987.

160. "Penalty Finite-Element Analysis of Free Surface Flows of Power-Law Fluids", (with M. Iga), *The Mathematics of Finite Elements and Applications*, Brunel University, Uxbridge, England, April 28-May 1, 1987.

161. "A Refined Nonlinear Theory of Laminated Composite Plates", *The 5th Army Conference on Applied Mathematics and Computing*, U.S. Military Academy, West Point, June 15-18, 1987 (Transactions, pp. 183-202).

162. "A Penalty Finite Element Model for Flows of Non-Newtonian Fluids", (with A. Padhye and M. Iga), *Numerical Methods in Laminar and Turbulent Flow*, Part 2, C. Taylor, W. G. Habashi and M. M. Hafez (eds.), pp. 1153-1165, Concordia University, Montreal, July 6-10, 1987.

163. *"Finite Element Models of Fluid Flow", *First Int. Conf. on Industrial and Applied Mathematics*, Paris, France, June 29-July 3, 1987.

164. "Small Strain and Moderate Rotation Shear Deformation Theories for Anisotropic Plates and Shells", *First Int. Conf. on Industrial and Applied Mathematics*, Paris, France, June 29-July 3, 1987.

165. "On a Moderate Rotation Theory of Elastic Anisotropic Shells", (with R. Schmidt and L. Librescu), *Proc. 20th Midwestern Mechanics Conference*, Purdue University, W. Lafayette, August 31-Sept. 2, 1987, pp. 616-622.

166. "Geometric and Viscoelastic Nonlinear Analysis of Adhesive Joints", (with S. Roy and H. F. Brinson), *Mechanical Behavior of Adhesive Joints (EUROMECH 227)*, Saint-Etienne, France, Aug. 31-Sept. 2, 1987.

167. *"On a Generalization of Refined Plate Theories", *Joint Colloquium*, Department of Mechanical Engineering and Center for Space Structures and Controls, The University of Colorado at Boulder, Sept. 18, 1987.

168. "On Refined Theories of Laminated Anisotropic Composite Plates", *1987 Annual Meeting of the Society of Engineering Science*, University of Utah, Salt Lake City, Sept. 20-23, 1987.

169. "NOVA: A Nonlinear Viscoelastic Analysis Program", (with S. Roy), *Proceedings of the 19th International SAMPE Technical Conference on the Nation's Future Material Needs*, edited by T. Lynch, et al., SAMPE, Crystal City, VA, October 15-17,1987, pp. 87-99.

170. "On a Penalty Function Method in the Finite-Element Analysis of Problems in Mechanics", *Graduate Seminar*, Department of Mechanical Engineering, University of Pittsburgh, Pittsburgh, PA, October 23, 1987.

171. "A General Shear Deformation Theory of Laminated Composite Plates", Graduate *Seminar*, Department of Mechanical Engineering and Applied Mathematics, University of Virginia, Charlottesville, VA, Nov. 20, 1987.

172. "A General Theory of Laminated Composite Plates", *Winter Seminar Series*, CCMS, VPI&SU, Blacksburg, VA, December 1987.

173. "A Small Strain and Moderate Rotation Theory of Elastic Anisotropic Plates", *ASME Winter Annual Meeting*, Boston, December 13-18, 1987.

174. "The Diffusion of Gases and Vapors in Polymers: Effect of Strain and Boundaries with Applications to the Durability of Adhesive Joints", (with D. R. Lefebvre, S. Roy, D. A. Dillard, and H. F. Brinson), *1988 Adhesion Society Meeting*, February, Charleston, NC.

175. "Finite Element Models of Laminated Composite Plates", *Seminar*, Swanson Analysis Systems, Inc., April, 1988.

176. "On Recent Developments in Refined Theories of Composite Laminates", *Colloquium*, Department of Aerospace Engineering and Mechanics, University of Minnesota, Minneapolis, April, 1988.

177. "On Computational Models of Fluid Flow and Composite Laminates", *Seminar*, ICASE, NASA Langley, Hampton, VA, April, 1988.

178. "A Plate Bending Element Based on a Generalized Laminate Plate Theory", (with E. J. Barbero and J. L. Teply), *29th Structures, Structural Dynamics and Materials Conference*, April 18-20, Williamsburg, VA (paper no. AIAA 88-2322, pp. 927-943 of the proceedings).

179. "A Direct Incorporation of the Aboudi Micromechanical Constitutive Model into Lamination Theory", (with R. T. Arenburg) ASCE/EMD *Specialty Conference*, Virginia Poltechnic Institute, Blacksburg, VA, May 22-25, 1987.

180. "An Accurate Prediction of Stress and and Natural Frequencies in Laminated Composite Plates", (with E. J. Barbero) ASCE/EMD *Specialty Conference*, Virginia Polytechnic Institute, Blacksburg, VA, May 23-25, 1987.

181. "On Dynamic Stability of Plates Using Shear Deformation Theories", (with E. Yogeswaren), ASCE/EMD *Specialty Conference*, Virginia Polytechnic Institute, Blacksburg, VA, May 23-25, 1987.

182. "A Moderate Rotation Plate Finite Element for Composite Laminates", (with F. A. Palmerio and R. Schmidt), *ASCE/EMD Specialty Conference*, Virginia Polytechnic Institute and State University, Blacksburg, VA, May 23-25, 1987.

183. "On Computational Models for the Nonlinear Analysis of Bolted and Adhesively Bonded Joints", *Applied Mechanics Seminar Series*, Montana State University, Bozeman, Montana, May 1988.

184. "Modeling of Composite Laminates", *Composites Seminar*, David Taylor Research Center, Annapolis, June 1988.

185. "Predictive Modeling of Adhesively Bonded Joints", (with S. Roy), *Thirty-Fifth Sagamore Materials Research Conference*, June 26-30, 1988, Manchester, New Hampshire.

186. "On Analytical Modeling of Thick Composites", (with E. J. Barbero and J. L. Teply), *Third Int. Conf. on CAD/CAM Robotics & Factories of the Future*, August 14-17, 1988, Southfield, Michigan.

187. "Finite-Element Analysis of Shell Structures", *Seminar*, Nuclear Systems Division, Indira Gandhi Center for Atomic Research, Kalpakkam, Tamilnadu, India, August 1988.

188. "Recent Advances in the Finite Element Analysis of Composite Structures", *Seminar*, Structural Engineering Research Center (CSIR), Taramani, Madras, India, August 1988.

189. "A Layer-Wise Shear Deformation Theory for Composite Laminates", *Seminar*, Aeronautical Development Agency, Bangalore, India, August 1988.

190. "An Overview of Shear Deformation Plate Theories", *Seminar*, Department of Aerospace Engineering, Indian Institute of Science, Bangalore, August, 1988.

191. "Analysis of Composite Structures", *Seminar*, The Aeronautical Society of India (Madras Branch), Madras, India, August 1988.

The following lectures were delivered at the *Advanced Study Institute on Finite Element Analysis for Engineering Design*, Aug. 1-10, 1988, Indian Institute of Technology, Madras, India:

192. "A Review of the Equations of Mechanics."

193. "Variational Formulations and Methods."

194. "An Introduction to the Finite Element Method."

195. "Two-Dimensional Theories of Plates."

196. "Mechanics of Composite Structures."

197. "Analysis of Laminated Composite Structures"

198. "The Finite Element Method in Engineering Science", *Seminar* Chaitanya Bharati Institute of Technology, Hyderabad, India, August 1988.

199. "Numerical Simulation of Viscoelastic Flows Using a Penalty Finite Element Model", (with M. Iga), *International Conference on Computational Methods in Flow Analysis, (ICCMFA '88)*, Sept. 5-8, 1988, Okayama, Japan (pp. 257-265 of the proceedings).

200. "A Refined Small Strain and Moderate Rotation Theory of Elastic Anisotropic Shells", (with R. Schmidt), *1988 Winter Annual Meeting of ASME*, November 27-Dec. 2, 1988, Chicago, IL.

201. * "Effect of Moisture Diffusion on Stress Distributions in Adhesive Joints", (with S. Roy), in session on *Advances in Adhesively Bonded Joints, 1988 Winter Annual Meeting of ASME*, November 27-December 2, 1988, Chicago, IL.

202. "A Review and Generalization of Displacement Based Theories", *First Pan American Congress of Applied Mechanics (PACAM)*, Rio de Janeiro, Brazil, January 3-6, 1989, pp. 597-600.

203. "On the Finite Element Modeling of Problems in Solid and Fluid Mechanics", *Seminar*, Laboratorion National de Computacao Cientifica (LNCC), Rio de Janeiro, Brasil, January 5, 1989.

204. "On Penalty Finite Element Models in Fluid and Structural Problems", *Seminar*, COPPE, Federal University of Rio de Janeiro, Brazil, January 6, 1989.

205. "On Refined Theories of Laminated Composite Plates", *Seminar*, Department of Mechanical Engineering, Florida State University, Tallahassee, Florida, March 27, 1989.

206. "Nonlinear Analysis of Composite Laminates Using a Generalized Laminated Plate Theory", (with E. J. Barbero), *Sixth Annual Review*, Center for Composite Materials and Structures, Virginia Tech., Blacksburg, April 9-11, 1989.

207. * "The Penalty Function Method in the Formulation of Incompressible Fluids and Shear Deformable Plates", *Civil Engineering/Applied Mechanics Seminar*, University of Virginia, Charlottesville, VA, May 2, 1989.

208. "A General Nonlinear Theory of Laminated Anisotropic Composite Plates", (with E. J. Barbero and J. L. Teply) *The First USSR-USA Symposium on Mechanics of Composite Materials*, May 23-26, 1989, Riga, Latvian SSR, USSR, (pp. 177-186 of the proceedings).

209. "On Modeling of Delamination in Composite Laminates", *Seminar*, General Dynamics, Ft. Worth Division, July 6, 1989.

210. "Applications of the Aboudi Micromechanics Theory to Metal Matrix Composites", (with R. T. Arenburg), *The Third-Joint ASCE/ASME Mechanics Conference*, July 9-12, 1989,

University of California, San Diego, CA; paper appeared in: *Mechanics of Composite Materials and Structures*, J. N. Reddy and J. L. Teply (eds.), AMD-Vol. 100, pp. 33-40, The American Society of Mechanical Engineers, New York, 1989.

211. "An Accurate Determination of Stresses in ARALL Laminates Using a Generalized Laminate Plate Theory", (with E. J. Barbero and J. L. Teply), *The Third-Joint ASCE/ASME Mechanics Conference*, July 9-12, 1989, University of California, San Diego, CA; paper appeared in: *Mechanics of Composite Materials and Structures*, J. N. Reddy and J. L. Teply (eds.), AMD-Vol. 100, pp. 55-62, The American Society of Mechanical Engineers, New York, 1989.

212. "Probabilistic Micromechanics for Metal-Matrix Composites", (with S. P. Engelstad), *The Third-Joint ASCE/ASME Mechanics Conference*, July 9-12, 1989.

213. "On Finite Element Models of the Buckling and Vibration of Composite Laminates", *The 1989 ASME Pressure Vessels and Piping Conference*, July 23-27, 1989, Honolulu, Hawaii; paper appeared in: *Dynamics of Plates and Shells-1989*, H. Chung, G. Yamada and Y. Narita (eds.), PVP-Vol. 1 78, pp. 1-16, The American Society of Mechanical Engineers, New York, 1989.

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215. "An Application of the Generalized Laminate Plate Theory to Delamination Buckling", (with E. J. Barbero), *Fourth Technical Conference on Composite Materials*, American Society for Composites, Virginia Tech., Blacksburg, October 3-6, 1989.

216. "Numerical Stress Intensity Factor Determination of Notched Laminated Specimens", (with D. Turlier), *Mechanics and Mechanisms of Damage in Composites and Multimaterials*, St. Etienne, France, Nov. 15-17, 1989.

217. "A Computational Model for Study of Local Effects", (with E. J. Barbero), *International Conference on Engineering Software-89*, Indian Institute of Technology, Delhi, India, December 4-9, 1989.

218. "Vibrations of Laminated Composite Plates Using a Generalized Laminated Plate Theory", (with E. J. Barbero), *1989 ASME\Winter Annual Meeting*, Dec. 14, 1989, San Francisco.

219. "A Critical Review of the Third-Order Theories of Laminated Composite Plates", *Seminar*, National Aeronautical Laboratory, Bangalore, India, December 15, 1989.

220. "A Study of Delamination in Composite Laminates with a Layer-Wise Laminate Plate Theory", *Seminar*, Indian Institute of Science, Bangalore, India, December 15, 1989.

221. "Characterization of Delamination in Thick Composite Laminates", *Seminar*, Bell Helicopter Textron, Inc., Fort Worth, TX, January 19, 1990.

222. "On a Layerwise Laminate Plate Theory with Application to Delamination", *Seminar*, Mechanics of Materials Branch, NASA Langley Research Center, Hampton, VA, January 22, 1990.

223. "Finite-Element Analysis of Structural Vibrations: Recent Developments", *Proceedings of the International Congress on Recent Developments in Air & Structure Borne Sound and Vibration*, edited by M. J. Crocker, pp. 291-305, Auburn University, Alabama, 1990.

224. "A Study of Delamination Buckling in Composite Laminates Using the Generalized Laminate Plate Theory", (with E. J. Barbero), *SECTAM XV (Southeastern Conference on Theoretical and Applied Mechanics)*, Georgia Institute of Technology, Atlanta, GA, March 22-23, 1990.

225. "Dynamic Instability of Composite Plates Using the First-Order Shear Deformation Theory", (with J. Moorthy and R. H. Plaut), *SECTAM XV (Southeastern Conference on Theoretical and Applied Mechanics)*, Georgia Institute of Technology, Atlanta, GA, March 22-23, 1990.

226. "Computational Aspects of Finite Elements", *Seminar on Engineering and Scientific Computing*, Department of Mathematics, Virginia Polytechnic Institute and State University, Blacksburg, VA, March 26, 1990.

227. "On the Finite Element Modeling of Physical Processes", *Seminar*, General Electric Company, Evendale, Ohio, May 9, 1990.

228. * "A Unified Formulation of Micromechanics Models of Fiber-Reinforced Composites", (with J. L. Teply), *IUTAM Symposium on Elastic Behavior of Composite Materials*, May 29-June 1, 1990, Renesselaer Polytechnic Institute, *Troy, NY.* Appeared in *Inelastic Deformation of Composite Materials*, G. J. Dvorak (Ed.), Springer-Verlag, New York, pp. 341-370.

229. "On a Layer-Wise Plate Theory for Composite Laminates", *Engineering Mechanics Seminar*, Ohio State University, June 1, 1990.

230. "On Recent Developments in the Refined Theories of Composite Laminates", *Seminar*, University of Rome, Italy, June 26, 1990.

231. "On a Layer-Wise Laminate Plate Theory for Thick Composites", *Seminar*, University of Rome 2, 'Tor Vergata,' Rome, June 27, 1990.

232. "Penalty Finite-Element Analysis of Non-Newtonian Fluids in Three-Dimensional Enclosures", *Seminar*, University of Rome 2, June 28, 1990.

233. "Advances in the Analysis of Laminated Composite Plates", *Seminar*, Salerno, Italy, July 2, 1990.

234. "On New Developments in the Refined Theories of Plates", *New Developments in Structural Mechanics*, University of Catania, Italy, July 4-6, 1990.

235. * "Characterization of Local Effects in Laminated Composite Plates", *Workshop on Composite Materials*, Indian Institute of Technology, Delhi, India, July 20, 1990.

236. "Modeling of Delamination in Composite Laminates Using a Layer-Wise Plate Theory", (with E. J. Barbero), *Indo-US Workshop on Composites for Aerospace Applications*, Bangalore, India, July 23-27, 1990.

237. "Interlaminar Shear Stress Effects on the Postbuckling Response of Graphite-Epoxy Panels", (with S. P. Engelstad and N. F. Knight, Jr.), *Advances in Structural Testing*, *Analysis and Design*, (Proc. Int. Conf. on Structural Testing, Analysis and Design, July 29-Aug. 3, 1990, Bangalore, India), Tata McGraw-Hill, New Delhi, pp. 102-107, 1990.

238. * "On the Modeling of Thick Composites Using a Layer-Wise Laminate Theory", *Int. Conf. on Mechanics, Physics and Structure of Materials*, Thessaloniki, Greece, Aug. 19-24, 1990.

239. "A Computational Model for Smart Composite Structures with Embedded Actuators", (with D. H. Robbins, Jr.) *Second World Congress on Computational Mechanics*, University of Stuttgart, West Germany, August 27-31, 1990.

240. "On the Kinematic Modeling of Thick Composite Laminates", *Joint Seminar*, Center for Composite Materials and Structures, Rensselaer Polytechnic Institute, Troy, New York, October 11, 1990.

241. "On the Modeling of Local Stress Fields in Composite Laminates", *Seminar*, Department of Aerospace Engineering, University of Maryland, College Park, MD, Oct. 12, 1990.

242. "On Buckling and Post-Buckling of Circular Cylindrical Shells with and without Stiffeners", *Seminar*, General Dynamics, Space Systems Division, San Diego, CA, Nov. 26, 1990.

243. "Buckling of Stiffened Circular Cylindrical Shells Using a Layer-Wise Shell Theory", *Seminar*, Madras Institute of Technology (MIT), Madras, Jan. 7, 1991.

244. "Postbuckling Response and Failure Prediction of Flat Rectangular Graphite-Epoxy Plates Loaded in Axial Compression", (with S. P. Engelstad and N. F. Knight, Jr.), *32nd Structures, Structural Dynamics and Materials (SDM) Conference*, April 8-10, 1991, Baltimore, Maryland (AIAA-91-0910-CP, pp. 888-895, Part 2 of the proceedings).

245. "Modeling of Actuators in Intelligent Structures", (with D. H. Robbins, Jr.), 1991 *Spring Meeting of Materials Research Society*, Anaheim, California, April 29-May 3, 1991.

246. * "Energy and Variational Methods in Applied Mechanics", Lecture 1 at Instituto de Aeronautica e Espaco (Institute for Aeronautics and Space)- CTA, Sao Jose does Campos-SP, Brasil, May 6, 1991.

247. * "Finite Element Analysis of Problems in Solid Mechanics, Fluid Mechanics, and Heat Transfer", Lecture 2 at Instituto de Aeronautica e Espaco (Institute for Aeronautics and Space)-CTA, São Jose dos Campos-SP, Brasil, May 7, 1991.

248. * "On Refined Theories of Plates and Shells", Lecture 3 at Instituto de Aeronautica e Espaco (Institute for Aeronautics and Space)-CTA, São Jose dos Campos-SP, Brasil, May 8, 1991.

249. * "Mechanics of Anisotropic Plates and Shells", Lecture 4 at Instituto de Aeronautica e Espaco (Institute for Aeronautics and Space)-CTA, São Jose does Campos-SP, Brasil, May 9, 1991.

250. * "Recent Advances on the Modeling of Laminated Composite Structures", *Seminar* at Universidade de São Paulo (University of São Paulo), Department of Civil Engineering, São Paulo, Brasil, May 10, 1991.

251. "Accurate Determination of Stresses in Arall^{tm} Laminates", (with D. H. Robbins, Jr. and J. L. Teply), *International Aerospace Congress* 1991, May 12-16, Melbourne, Australia.

252. "Nonlinear Probabilistic FEM for Composite Shells", (with S. P. Engelstad), *ASCE Engineering Mechanics Specialty Conference*, May 19-22, 1991, Columbus, OH.

253. "Computational Models for the Stress Analysis of Woven Composite Structures", *Seminar*, Computational Mechanics Branch, NASA Langley Research Center, Hampton, VA, May 24, 1991.

254. "Probabilistic Micromechanics for Metal Matrix Composites", (with S. P. Engelstad and D. A. Hopkins), 1991 ASME Applied Mechanics and Biomechanics Summer Conference, June 17-19, 1991, Columbus, Ohio; appeared in *Mechanics of Composites at Elevated and Cryogenic Temperatures*, S. N. Singhal, W. F. Jones, and C. T. Herakovich (eds.), AMD-Vol. 118, ASME, New York, 1991, pp. 181-193.

255. "On Solution Methods for Nonlinear Equations", *Seminar Series in Engineering Mechanics*, Ohio State University, Columbus, OH, June 20, 1991.

256. "Analysis of Laminated Composite Plates Using First- and Second-Order Moderate Rotation Theories", (with E. Sacco), *International Conference on Industrial and Applied Mathematics*, (ICIAM 91), July 8-12, 1991, Washington, D.C.

257. "Axisymmetric Flows Through a Sudden Enlargement with Heat Transfer Using Consistent Penalty FEM", (with G. Subhas Babu *et al.) Seventh Int. Conf. on Numerical Methods in Thermal Problems*, Stanford University, Stanford, CA, July 8-12, 1991.

258. "Numerical Simulation of Fluid Flow and Heat Transfer During Forming Processes", (with M. P. Reddy), *Seventh Int. Conf. on Numerical Methods in Thermal Problems*, Stanford University, CA, July 8-12, 1991.

259. "Nonlinear Probabilistic Finite Element Modeling of Composite Shells", (with S. P. Engelstad), *First U. S. National Congress on Computational Mechanics*, Chicago, IL, July 21-24, 1991.

260. "A Critical Evaluation of Plate and Shell Elements with Shear and Membrane Constraints", (with R. Averill), *First U. S. National Congress on Computational Mechanics*, Chicago, IL, July 21-24, 1991.

261. "A Study of Local and Strain Fields in Composites", (with J. L. Teply), *First U. S. National Congress on Computational Mechanics*, Chicago, IL, July 21-24, 1991.

262. "A Layer-Wise Plate Bending Finite Element for Composite Laminates", (with D. H. Robbins, Jr.), *First U. S. National Congress on Computational Mechanics*, Chicago, IL, July 21-24, 1991.

263. "On Three-Dimensional Elasticity Solutions of Laminated Composite Plates", (with M. Savoia), *First International Conference on Computational Structures Technology*, Heriot-Watt University, Edinburgh, U.K., August 20-22, 1991.

264. * "Element-by-Element Methods for the Solution of Incompressible, Three-Dimensional Flows", (with M. P. Reddy), *Second North American-Soviet Workshop on Computational Aerodynamics*, Montreal Canada, Sept. 3-5, 1991.

265. "A Probabilistic Postbuckling Analysis of Composite Shells", (with S. P. Engelstad), *First Int. Conf. on Computational Stochastic Mechanics*, Corfu, Greece, Sept. 17-19, 1991; *Computational Stochastic Mechanics*, P. D. Spanos and C. A. Brebbia (eds.), Elsevier, pp. 839-850, 1991.

266. "On Refined Theories of Laminated Composite Plates", *Seminar*, Technical University of Athens, Greece, Sept. 19, 1991.

267. * "A Layer-Wise Plate Bending Finite Element for Composite Laminates", (with D. H. Robbins), *Twenty-Second Midwestern Mechanics Conference*, University of Misouri-Rolla, Rolla, MO, Oct. 6-9, 1991.

268. "Stability of Thick Composite Laminates Using the Layer-Wise Theory", (with J. L. Teply), *Sixth Technical Conference on Composite Materials*, American Society for Composites, Albany, NY, Oct. 7-9, 1991.

269. "A Penalty FEM and EBE\ Solution Methods for Incompressible Three-Dimensional Flows", *Seminar*, McDonell-Douglas Aircraft Co., St. Louis, MO, Oct. 7, 1991.

270. "Accurate Prediction of Stresses and Failures in Thick Composite Laminates", (with D. H. Robbins, Jr. and Y. S. N. Reddy) *Second USSR- U. S. Symposium on Mechanics of Composite Materials*, Albany, NY, Oct. 10-11, 1991.

271. "A Layer-Wise Laminate Theory for the Simulation of Imbedded Actuators and Local Failures", (with D. H. Robbins and Y. S. N. Reddy), *IUTAM Symposium on Local Mechanics Concepts for Composite Material Systems*, Blacksburg, VA, Oct. 27-31, 1991.

272. "Modeling of Thick Composite Laminates Using Multiple Assumed Displacement Fields", *Oscar S. Wyatt, Jr. Chair Seminar*, Texas A&M University, College Station, TX, Nov. 11, 1991.

273. "FEM\ Analysis of Heat Transfer in a Developing Turbulent Pipe Flow -- A Comparative Study of Nine Models", (with M. S. Ravisankar, K. N. Seetharamu, P. A. Aswatha Narayana), *The Eleventh National Conference on Heat and Mass Transfer*, Madras, India, December 1991.

274. "On the Modeling of Delamination in Thick Composites", (with D. H. Robbins and A. V. Krishna Murty) in *Engineering Analysis Techniques for Composite Materials*, L. Schwer, J. N. Reddy and A. Mal (eds.), NDE-Vol. 10, American Society of Mechanical Engineers, New York, 1991.pp. 133-149.

275. "A 3-D Penalty Finite Element Model of Forming Processes", (with M. P. Reddy and H. U. Akay) in *Advances in Finite Element Analysis in Fluid Dynamics*, M. N. Dhaubhadel, M. S. Engelman, J. N. Reddy (eds.), FED-Vol. 123, American Society of Mechanical Engineers, New York, 1991 (Proc. of the Symposium held at ASME Winter Annual Meeting, Atlanta, GA, Dec. 4-6, 1991), pp. 61-76.

276. "Numerical Simulation of Solidification of Aluminum Alloy Castings", (with G. S. Reddy and W. J. Mascarendhas), in *Advances in Finite Element Analysis in Fluid Dynamics*, M. N. Dhaubhadel, M. S. Engelman, J. N. Reddy (eds.), FED-Vol. 123, American Society of Mechanical Engineers, New York, 1991 (Proc. of the Symposium held at ASME Winter Annual Meeting, Atlanta, GA, Dec. 4-6, 1991), pp. 39-46.

277. "A Finite Element Simulation of Mold Filling Processes", (with M. P. Reddy) in *Advances in Finite Deformation Problems in Materials Processing and Structures*, N. Chandra and J. N. Reddy (eds.), AMD-Vol. 125, American Society of Mechanical Engineers, New York, 1991 (Proc. of the Symposium held at ASME\ Winter Annual Meeting, Atlanta, GA, Dec. 4-6, 1991), pp. 65-74.

278. "Modeling of Laminated Composite Plates and Shells Using a Layer-Wise Shell Theory", *Asian Pacific Conference on Computational Mechanics*, University of Hong Kong, Hong Kong, Dec. 11-13, 1991; also appeared in *Computational Mechanics*, Vol. 2, Y. K. Cheung, J. H. Law and A. Y. T. Leung (eds.), A. A. Balkena, Netherlands, 1991, pp. 1031-1036.

279. "Computational Models of Inelasticity in Composite Laminates", (with S. P. Engelstad and R. T. Arenburg), *COMPLAS\ III: Third Int. Conf.on Computational Plasticity Fundamentals and Applications*, Barcelona, Spain, April 6-10, 1992.

280. "On the Application of Incremental Theory of Plasticity with Endochronic Hardening Rule", (with S. P. Engelstad and S. K. Jain), *COMPLAS\ III: Third Int. Conf.on Computational Plasticity Fundamentals and Applications*, Barcelona, Spain, April 6-10, 1992.

281. "Global/Local Analysis of Laminated Composite Plates Using Variable Kinematic Elements", (with D. H. Robbins, Jr.), *AIAA/ASME/ASCE/AHS/ASC 33rd Structures, Structural Dynamics, and Materials (SDM) Conference*, April 13-15, 1992, Dallas, Texas.

282. "Recent Developments in the Kinematic Modeling of Laminated Composite Plates and Shells", *Sixteenth South Eastern Conference on Theoretical and Applied Mechanics*,, University of Tennessee Space Institute, Nashville, April 16, 1992.

283. "Variable Kinematic Models and Mesh Superposition Techniques for the Analysis of Composite Laminates", *Seminar*, Lockheed Aeronautical Systems Company, Marietta, Georgia, April 22, 1992.

284. "Modeling of Thick Composite Laminates Using Multiple Assumed Displacement Fields", *Structural Mechanics Seminar*, Georgia Tech, April 23, 1992.

285. "Consistent Definition of Unit Cell for Nonlinear Analysis of Fibrous Composites", (with J. L. Teply) *1992 ASME Applied Mechanics, Materials and Aerospace Summer Meeting,* April 28-May 1, 1992, Scottsdale, Arizona.

286. "Nonlinear Analysis of Composite Structures by the Finite Element and Boundary Element Methods", (with F. Kokkinos), *Third National Congress on Mechanics*, June 25-27, 1992, Athens, Greece.

287. "Failure Prediction in Composite Laminates According to the Layerwise Plate Theory", (with Y. S. N. Reddy), *First World Congress of Nonlinear Analysts*, August 19-26, 1992, Tampa, Florida.

288. "Analysis of Composite Laminates Using Variable Kinematic Finite Elements", (with D. H. Robbins, Jr.), *Proceedings of the 7th Brazilian Symposium on Piping and Pressure Vessels (SIBRAT),* C. A. C. Selke and C. S. Baecellos (eds.), University of Santa Catarina, Florianopolis, Brazil, pp. 47-68, 1992.

289. "A Global-Local Computational Procedure for the Analysis of Thick Composite Laminates", *TAM Seminar*, Department of Theoretical and Applied Mechanics, Cornell University, Ithaca, October 14, 1992.

290. "Analysis of Thick Composite Laminates Using Variable Kinematic Finite Elements", *Seventh Technical Conference on Composite Materials*, American Society for Composites, October 14-17, 1992, Pennsylvania State University, State College, PA.

291. "A Global-Local Computational Procedure Based on Layerwise Theory of Composite Laminates", *TICOM Seminar*, University of Texas at Austin, October 22, 1992.

292. * "An Adaptive, Multilevel Numerical Scheme for the Solution of the Navier-Stokes Equations", (with R. M. Fithen) the ASME Winter Annual Meeting, Anaheim, CA,

November 9-13, 1992. Appeared in *Adaptive, Multilevel and Hierarchical Computational Strategies,* AMD-Vol. 157, A. K. Noor (ed.), ASME, New York, pp. 275-292, 1992.

293. "Geometrically Nonlinear Analysis of Laminated Composite Shells Using a Macro-Micro Cumulative Damage Model", (with R. C. Averill) the ASME Winter Annual Meeting, Anaheim, CA, November 9-13, 1992. *Damage Mechanics in Composites,* AMD-Vol. 150 and AD-Vol. 32, D. H. Allen and D. C. Lagoudas (eds.), ASME, New York, pp. 255-273, 1992.

294. * "A Macro-Micro Mechanics Procedure for Geometrically Nonlinear Analysis of Laminated Composite Shells with Cumulative Damage", (with R. C. Averill) *Symposium on Damage Mechanics*, at the ASME Winter Annual Meeting, Anaheim, CA, November 9-13, 1992.

295. "The Finite Element Method in Engineering Science", *Seminar*, Department of Mechanical Engineering, Indian Institute of Science, Bangalore, India, December 4, 1992.

296. * "On the Modeling of Composite Laminates: Intuition to Generality and Theory to Practice", *the Neelakantam Memorial Lecture* at the Annual Convention of the Aeronautical Society of India, December 11, 1992, Bangalore, India.

297. * "Global-Local Hierarchical Modeling of Composite Laminates Using Variable Kinematic Finite Elements and Mesh Superposition", (with D. H. Robbins, Jr.), *Proceedings of the IMACS International Symposium on Mathematical Modelling and Scientific Computing*, S. K. Dey and E. J. Kansa (eds.), Bangalore, India, pp. 209-228, 1992.

298. "A Layerwise Laminate Theory and Global-Local Computational Schemes", *Seminar*, Sandia National Laboratory, Albuquerque, NM, February 1, 1993.

299. "A Study of the Effect of Embedded Piezoelectric Layers in Composite Cylinders", (with J. A. Mitchell) *SPIE's 1993 North American Conference on Smart Structures and Materials,* Albuquerque, New Mexico, February 1-4, 1993.

300. "On the Modeling of Actuators in Laminated Composite Structures", (with D. H. Robbins, Jr.) *SPIE's 1993 North American Conference on Smart Structures and Materials,* Albuquerque, New Mexico, February 1-4, 1993.

301. "A Hierarchical Computational Procedure for Accurate Modeling of Local Effects in Composite Laminates", *AFOSR/NA Seminar*, Air Force Office of Scientific Research, Bolling AFB, February 12, 1993.

302. "Global-Local Computational Procedures Based on Variable Kinematic Finite Elements and Mesh Superposition Techniques", *Seminar*, Dept. of Civil Engineering, University of Minnesota, March 5, 1993.

303. "A Simultaneous Multiple Model Approach for Laminated Composite Structures", *Joint Seminar* by the Center for Mechanics of Composites, Texas A & M University, College Station, Texas, April 6, 1993.

304. "The Finite Element Method in Engineering Science", *Seminar*, Department of Civil Engineering, Texas Tech University, Lubbock, April 13, 1993.

305. "Free Vibration Analysis of Laminated Plates Using a Layer-Wise Theory", (with A. Nosier and R. K. Kapania), *AIAA/ASME/ASCE/AHS/ASC 34th Structures, Structural Dynamics, and Materials (SDM) Conference*, April 1993, La Jolla, CA, Paper No. AIAA-93-1320-CP.

306. "Thermomechanical Postbuckling Analysis of Laminated Composite Shells", (with R. C. Averill), *AIAA/ASME/ASCE/AHS/ASC 34th Structures, Structural Dynamics and Materials (SDM) Conference*, La Jolla, CA, April 1993.

307. "On a Hierarchical Computational Model for the Analysis of Composite Laminates", *Seminar*, University of Bologna, Bologna, May 22, 1993.

308. "Stability of Laminated Cylindrical Shells According to the Layerwise Shell Theory", *Seminar*, University of Rome II, May 28, 1993.

309. * "Mechanics of Composite Laminates and Associated Computational Models", a series of lectures presented at University of Naples, Naples, Italy, May 30-June 2, 1993.

310. * "A Simultaneous Multiple Model Approach for Accurate Modeling of Composite Laminates", *Seminar*, University of Rome II, June 3, 1993.

311. "Buckling and Postbuckling Behavior of Eccentrically Stiffened Laminated Cylinders Under Axial Extension", (with M. Savoia) *Seventh Italian Convention on Computational Mechanics,* Trieste, Italy, June 1-3, 1993.

312. * "Through-Thickness Effects Thermomechanical Postbuckling of Laminated Structures", (with R. C. Averill), *MEET'N'93: ASME-AMD, ASCE-EMD, and SES Conference*, June 6-9, Charlottesville, VA 1993.

313. * "Postbuckling Analysis of Composite Shells Using Probabilistic Finite Elements", (with S. P. Engelstad), *MEET'N'93: ASME-AMD, ASCE-EMD, and SES Conference*, June 6-9, Charlottesville, VA 1993.

314. * "Application of Finite Element Method to Composite Materials", (with J. L. Teply), *MEET'N'93: ASME-AMD, ASCE-EMD, and SES Conference*, June 6-9, Charlottesville, VA 1993.

315. * "Analysis of Discretely Stiffened Laminated Cylindrical Shells", (with S. Kassegne), *MEET'N'93: ASME-AMD, ASCE-EMD, and SES Conference*, June 6-9, Charlottesville, VA 1993.

316. * "A Novel Computational Procedure for the Analysis of Thick Composite Laminates", (with D. H. Robbins, Jr.), *MEET'N'93: ASME-AMD, ASCE-EMD, and SES Conference*, June

6-9, Charlottesville, VA 1993. Appeared in *Mechanics of Thick Composites*, Y. D. S. Rajapakse (ed.), AMD-Vol. 162, American Society of Mechanical Engineers, New York, pp. 51-66, 1993

317. * "Structural Response of Composite Laminates with Piezoelectric Layers", (with J. A. Mitchell), *MEET'N'93: ASME-AMD, ASCE-EMD, and SES Conference*, June 6-9, Charlottesville, VA 1993.

318. * "Buckling and Postbuckling of Eccentrically Laminated Cylinders", (with M. Savoia), *MEET'N'93: ASME-AMD, ASCE-EMD, and SES Conference*, June 6-9, Charlottesville, VA 1993.Appeared in *Mechanics of Composite Materials-Nonlinear Effects,* M. W. Hyer (ed.), AMD-Vol. 159, American Society of Mechanical Engineers, New York, pp. 127-142, 1993.

319. * "Finite Element Analysis of Viscous Incompressible Flows Using Primitive Variables", *Proceedings of the 9th ADINA Conference*, MIT, Cambridge, MA, 23-25 June, 1993.

320. "On Hierarchical Finite Elements and Mesh Superposition Techniques", *Seminar*, L. G. Mouchel & Partners Ltd., Consulting Engineers, Weybridge, Surrey, U. K., June 29, 1993.

321. "A Computational Model for Composite Laminates", *Research Colloqium*, Department of Civil Engineering, University College of Swansea, Swansea, Wales, U. K., July 1, 1993.

322. "A Global-Local Computational Procedure for Composite Laminates", *Seminar*, British Aerospace, Warton, U. K., July 2, 1993.

323. "Refined Theories of Laminated Plates and Shells", *Seminar*, Department of Mathematical Applications, Zaragoza University, Zaragoza, Spain, July 8, 1993.

324. "Theory and Analysis of Laminated Plates and Shells", *Seminar*, Department of Mathematical Applications, Zaragoza University, Zaragoza, Spain, July 8, 1993.

325. "Computational Fluid Dynamics-An Overview", *Seminar*, Department of Mathematical Applications, Zaragoza University, Zaragoza, Spain, July 9, 1993.

326. "Finite Element Analysis of Convective Heat Transfer", *Seminar*, Department of Mathematical Applications, Zaragoza University, Zaragoza, Spain, July 9, 1993.

327. "Hierarchical Plate Elements and Mesh Superposition for Determination of Local Stress Fields in Composite Laminates", (with D. H. Robbins), *Second U. S. National Congress of Computational Mechanics,* Hyatt Regency Hotel, Washington, D. C ., August 16-18, 1993.

328. "Homogenization Techniques Using the Finite Element Method", (with J. L. Teply), *Second U. S. National Congress of Computational Mechanics*, Hyatt Regency Hotel, Washington, D. C., August 16-18, 1993.

329. "Free Vibration and Impact Response of Laminated Composites Using a Layer-Wise Theory", (with A. Nosier and R. K. Kapania), *Army Symposium on Solid Mechanics 1993*, Plymouth, MA, August 17-19, 1993.

330. "An Accurate Prediction of Failures in Composite Laminates Using a Layerwise Theory", (with Y. S. N. Reddy) *Ninth International Conference on Composite Materials (IICM-9),* Madrid, Spain, 12-16 July 1993.

331. "Global-Local Computational Procedures for the Analysis of Composite Laminates", *Seminar*, Department of Engineering Science & Mechanics, Penn State University, State College, PA, December 8, 1993.

332. "Variable Kinematic Finite Elements and Mesh Superposition Method for the Analysis of Composite Laminates", *Graduate College Seminar on Modeling and Discretization of Continua*, University of Stuttgart, Stuttgart, Germany, December 16, 1993.

333. * "Postbuckling Behavior of Stiffened Cylindrical Shells According to the Layerwise Theory", (with M. Savoia), *ASCE Space `94,* Albuquerque, NM, February 17-19, 1994.

334. "An Accurate Stress Analysis Procedure for Laminated Systems", *Seminar*, Intel Corporation, Phoenix, March 1, 1994.

335. "On Global Local Computational Models for Laminated Structures", *Aeronautical and Astronautical Engineering Seminars*, University of Illinois, Urbana, March 16, 1994.

336. * "A New Strain Energy Release Rate Concept for Interfacial Cracks", (with A. V. Krishna Murty and H. K. Harikumar), *Fracture Mechanics,* Proceedings of the Indo-German Workshop held at the Indian Institute of Science, Bangalore, India, March 28-April 1, 1994.

337. "On a Practical Analysis Procedure for Laminated Composite Structures", *Seminar to Ford Finite Element User Group*, Ford Motor Company, Dearborn, Michigan, May 13, 1994.

338. * "An Hierarchical Global-Local Computational Procedure for the Analysis of Laminated Composite Plates with Piezoelectric Layers", *Twelfth U.S. National Congress of Applied Mechanics,* University of Washington, Seattle, June 26-July 1, 1994.

339. "An Hierarchical Multi-Model Approach to the Analysis of Laminated Composite Structures", *Third World Congress on Computational Mechanics,* Chiba, Japan, August 1-5, 1994.

340. "Modeling of Composite Laminates with Piezoelectric Laminae." A *seminar* presented at the *Centre for Computational Mechanics,* National University of Singapore, August 4, 1994.

341. * "Stiffness Reduction in Composite Laminates due to Transverse Matrix Crack Damage", (with G. N. Praveen), *IUTAM Symposium on Microstructure-Property Interactions in Composite Materials,* Aalborg, Denmark, August 23-25, 1994.

342. "Non-Darcy Natural Convection in a Porous Cavity with Constant Heatflux on One Vertical Wall", (with K. N. Seetharamu, B. V. K. Satya Sai, and P.A. Aswatha Narayana), *Tenth Int. Heat Transfer Conf.,* Brighton, UK, August, 1994.

343. "Recent Advances in Modeling of Composite Structures", *NISA Users' Conference,* Detroit, October 3-4, 1994.

344. * "BEM and Penalty FEM Models for Viscous Incompressible Fluids", (with F. Kokkinos) *Society of Engineering Science 31st Annual Technical Meeting,* Texas A&M University, College Station, October 10-12, 1994.

345. * "Global-Local Finite Element Modeling of Wave Propagation in Composite Laminates", (with G. Rengarajan) *Society of Engineering Science 31st Annual Technical Meeting,* Texas A&M University, College Station, Oct. 10-12, 1994.

346. * "Stiffness reduction in Composite Laminates due to Transverse Matrix Cracks", (with G. N. Praveen) *Society of Engineering Science 31st Annual Technical Meeting,* Texas A&M University, College Station, Oct. 10-12, 1994.

347. * "A Continuum Formulation for the Analysis of Laminates with Piezoelectric Lamina", (with J. A. Mitchell) *Society of Engineering Science 31st Annual Technical Meeting,* Texas A&M University, College Station, October 10-12, 1994.

348. * "Thermal Postbuckling of Stiffened Multilayered Cylinders", (with M. Savoia), *Symposium on Buckling and Postbuckling of Composite Structures* session at the ASME Winter Annual Meeting, Chicago, November 6-11, 1994.

349. * "Finite Element Analysis of Composite Materials", a course given at the Middle East technical University, Ankara, Turkey, December 5-9, 1994.

The following four seminars were presented in a course on "Mechanics of Composite Materials" in *Graduate College Seminar on Modeling and Discretization of Continua*, University of Stuttgart, Germany:

350. "Higher-Order Shear Deformation Theories", December 13, 1994.

351. "Analytical Solutions of Laminate Theories", December 14, 1994.

352. "Finite Element Models of Laminate Theories", December 15, 1994.

353. "Layerwise Theory and Finite Element Models", December 16, 1994.

354. "Analytical Solutions for the Response of Laminated Composites with Piezoelectric Laminae", (with J. A. Mitchell), *Finite Element Modeling of Active Systems* session at the 1995 North American Conference on Smart Structures and Materials, San Diego, February 16-March 3, 1995.

355. * "Nonlinear Formulations of Laminated Plates with Piezoelectric Laminae", (with J. A. Mitchell), *Smart Materials and Structures* session at the ASCE/EMD Conference, Boulder, Colorado, May 21-24, 1995.

356. "Hierarchical Modeling of Laminated Composite Structures", *Seminar in Mechanics,* University of Paderborn, Paderborn, Germany, July 3, 1995.

357. "Variable Kinematic Models for Global-Local Analysis of Laminated Composite Structures", *Seminar,* Institute of Structural Mechanics, German Aerospace Research Establishment, Braunschweig, Germany, July 4, 1995.

358. * "Computational Approaches for Nonlinear Analysis of Laminated Composite Structures", *SIAM International Conference,* Hamburg, Germany, July 6-8, 1995.

359. "Evaluation of the Shear Deformation Plate Theories of Composite Laminates", (with P. Bose), *Computational Methods for Composite Structures* session at the *International Conference on Computational Engineering Science,* Hawaii, 30 July-3 August, 1995.

360. * "Recent Developments in the Modeling of Composite Structures", *Energy Technology Conference & Exhibition (ETCE),* Houston, Texas, January 28-February 2, 1996 (see *Composite Materials Design & Analysis,* Book V, Volume I, pp.1-36), ASME International.

361. "Hierarchical Global-Local Modeling of Composite Structures", *Seminar,* Center for Computational Mechanics, National University of Singapore, February 1996.

362. "Global-Local and Hierarchical Computational Procedures for Laminated Composite Structures", *Seminar,* Department of Mechanical and Production Engineering, Nanyang Technological University, Singapore, April 4, 1996.

363. * "Refined Theories and Computational Procedures for the Modeling of Smart Composite Structures", *First International Conference on Composite Science and Technology,* Durban, South Africa, 18-20 June 1996. (see *Composites Science and Technology*, S. Adali and V. E. Verijenko (eds.), University of Natal, Durban, South Africa, pp. 421-429).

364. * "Recent Advances in Numerical Modeling of Composites and Smart Structures", *Seventh Workshop on Composite Materials*, University of Zaragoza, Spain, 24 June 1996.

365. * "A Computational Methodology for Global-Local Analysis of Composite Structures", *Mathematics of Finite Elements and Applications IX (MAFELAP 1996),* Brunel University, Uxbridge, U.K., 25-28 June 1996. Appeared in *The Mathematics of Finite Elements and Applications, Highlights 1996*, J. R. Whiteman (ed.), John Wiley, Chichester, UK, pp. 313-331, 1997.

366. * "FEM Modeling of the Thermomechanical Response of a Composite Laminate with Shape Memory Alloy Layers", (with D. C. Lagoudas, *et al.*) *Second National Congress on Computational Mechanics,* Greek Association of Computational Mechanics, University of Patras, Patras, Greece, July 26-28, 1996.

367. "Variable Kinematic Models for Global-Local Analysis of Structures", *Seminar,* National Aerospace Laboratory, Bangalore, India, July 20, 1996.

368. "Developments in Global-Local Modeling of Composite Structures", *Seminar,* Reactor Design & Development Group, Bhabha Atomic Research Centre, Trombay, Mumbai, India, August 3, 1996.

369. "Finite Element Solutions for Some Problems Involving Smart Materials", (with G. Rengarajan) *Inelastic Behavior of Materials,* session at *33rd Annual Technical Meeting of the Society of Engineering Science,* October 20-23, 1996, Arizona State University, Tempe, AZ.

370. * "Crystal Inelasticity of Shape Memory Alloy Single Crystals - A Micromechanics Model", (with G. Rengarajan) *Smart Structures and Materials,* session at *33rd Annual Technical Meeting of the Society of Engineering Science,* October 20-23, 1996, Arizona State University, Tempe, AZ.

371. "On Locking-Free Finite Elements", *TICAM Seminar,* Department of Aerospace Engineering and Engineering Mechanics, The University of Texas at Austin, November 7, 1996.

372. "Recent Developments and Future Directions in Computational Structural Dynamics", *Seminar* presented in the Center for Computational Mechanics, National University of Singapore, December 5, 1996.

373. * "Numerical Modeling of Shape Memory Behavior Using a Continuum Constitutive Model", (with G. Rengarajan) *SPIE Far East and Pacific Symposium on* **Smart Materials, Structures, and MEMS,** December 11-14, 1996, Indian Institute of Science, Bangalore, India.

374. * "Quasicontinuum Analysis of Phase Transformations in Shape Memory Alloys", (with G. Rengarajan) *SPIE Far East and Pacific Symposium on* **Smart Materials, Structures, and MEMS,** December 11-14, 1996, Indian Institute of Science, Bangalore, India.

375. * "Locking-Free Finite Elements of Shear Deformation Beams and Circular Plates", *Advances in Computational Mechanics,* The University of Texas, Austin, January 13-15, 1997.

376. * "Interlaminar Stress Recovery Near Free Edge Using a Layerwise Element with Enhanced Strains", (with C. M. Dakshina Moorthy and J. A. Mitchell) *Energy Week '97,* Houston, January 28-30, 1997 (Proceedings of the *8th Annual International Energy Week Conference & Exhibition,* Houston, Texas, Book IV, Energy Engineering I, pp. 50-59).

377. "Global-Local Modeling of Composite Laminates Using Variable Kinematic Elements", *Seminar*, Polytechnic University (`Brooklyn Poly'), February 7, 1997.

378. "Hierarchical Modeling of Composite Laminates: Computational Procedures for Global-Local Analysis", *Seminar*, Mechanical Engineering and Materials Science Department, Rice University, February 24, 1997.

379. "Accurate Determination of Stresses and Failures in Composite Laminates", *Seminar*, Metallurgical and Materials Seminar, Metal Casting Technology Center, University of Alabama, Tuscaloosa, Alabama, March 13, 1997.

380. "Finite Element Analysis of Coupled Fluid Flow and Heat Transfer", *Seminar*, Thermal and Fluid Sciences, Texas A&M University, March 24, 1997.

381. "Global-Local Modeling of Laminated Plates Using Variable Kinematic Finite Elements and Mesh Superposition", *Semina*r, College of Engineering, Architecture, and Technology, Oklahoma State University, Stillwater, April 21, 1997.

382. "Thermomechanical Behavior of Functionally Graded Materials", *Seminar*, The Centre for Computational Mechanics, Mechanical and Production Engineering, National University of Singapore, June 3, 1997.

383. "Modeling Delamination Using a Layerwise Element with Enhanced Strains", (with C. M. Dakshina Moorthy) *McNU'97,* Northwestern University, Evanston, IL, 29 June-July 2, 1997.

384. *"On the Nonlinear Transient Thermomechanical Response of Functionally Gradient Plates Subjected to Surface Heating", (with G. N. Praveen) *McNU'97,* Northwestern University, Evanston, IL, 29 June-July 2, 1997.

385. "Buckling of Circular Plates Based on Reddy Plate Theory", (with C.M. Wang and K.H. Lee) *ASME ASIA'97 Congress and Exhibition,* Singapore, September 30-October 2, 1997.

386. "Kinematic Models and Computational Procedures for the Analysis of Laminated Composite Structures", *Seminar*, Department of Mechanical Engineering and Applied Mechanics, University of Michigan, Ann Arbor, October 10, 1997.

387. "Hierarchical Computational Procedures for the Global-Local Analysis of Laminated Composite Structures", *Seminar*, Department of Mechanical Engineering, University of Delaware, Newark, October 30, 1997.

388. "On the Role of Microstructure in Modeling Inelastic Behavior of Shape Memory Alloys", (with G. Rengarajan) *IMECE'97* (1997 International Mechanical Engineering Congress & Exposition), Dallas, November 16-21, 1997.

389. "Nonlinear Transient Thermoelastic Analysis of Functionally Graded Ceramic-Metal Plates", (with G. N. Praveen) *IMECE'97* (1997 International Mechanical Engineering Congress & Exposition), Dallas, November 16-21, 1997.

390. "Thermoelastic Analysis of Functionally Graded Cylinders and Plates", (with G. N. Praveen) *12th Engineering Mechanics Conference*, San Diego, CA, May 17-20, 1998.

391. "On Locking-Free Finite Elements and Interdependent Interpolations", *Graduate College Seminar on Modeling and Discretization of Continua and Structures*, University of Stuttgart, Germany, June 4, 1998.

392. "Thermomechanical Analysis of Functionally Graded Materials", *Graduate College Seminar on Modeling and Discretization of Continua and Structures*, University of Stuttgart, Germany, June 8, 1998.

393. "A Micromechanical Study of Inelastic Behavior of Silicon", (with G. Rengarajan) *Thirteenth US National Congress of Applied Mechanics*, June 21-26, 1998, University of Florida, Gainesville, Florida.

394. "On Modeling of FGMs and Blown Films", *Graduate Seminar*, June 25, 1998, Department of Engineering Science and Mechanics, Virginia Polytechnic Institute and State University, Blacksburg, Virginia.

The following lectures were presented at the *NATO Advanced Study Institute on Mechanics of Composite Materials and Structures*, 12-24 July 1998, Tróia, Portugal:

395. "Mechanics of Composite Materials".

396. "Classical and Refined Shear Deformation Theories of Laminated Plates".

397. "Linear and Nonlinear Finite Element Analysis of Composite Laminates".

398. "Hierarchical Modeling of Laminated Composite Plates".

399. "On Laminated Composite Plates with Integrated Sensors and Actuators".

400. "Thermomechanical Analysis of Functionally Graded Plates".

401. "Nonlinear Thermomechanical Analysis of Functionally Graded Plates", *Seminar*, Bhabha Atomic Research Center (BARC), Trombay, India, August 3, 1998.

402. "On Timoshenko Beam Finite Elements", *Seminar*, Department of Mechanical Engineering, Indian Institute of Technology, Bombay, India, August 4, 1998.

403. "Recent Developments in Computational Solid Mechanics", *Seminar*, Defense Research and Development Laboratory (DRDL), Hyderabad, India, August 5, 1998.

404. An Introduction to the Finite Element Method", *Seminar*, Department of Mathematics, Bangalore University, Bangalore, India, August 10, 1998.

405. "A Nonlinear Thermomechanical Formulation of Through-Thickness Functionally Gradient Plates ", *Seminar*, Department of Mechanical Engineering, Indian Institute of Science, Bangalore, India, August 11, 1998.

406. "An Alternate Derivation of the Superconvergent Timoshenko Beam Finite Element", *Seminar*, Space Science and Technology Colloquia (138th Session), Indian Institute of Science, Bangalore, India, August 12, 1998.

407. "Global-local Analysis of Composite Plates", *Seminar*, U.S. Army TACOM (Tank Automotive Command), Detroit, MI, October 23, 1998.

408. "An Overview of Shear Deformation Theories and Their Relationships to the Classical Theory", *Symposium on Micromechanics and Laminate Analysis*, (in honor of Dr. Nicholas J. Pagano's 65th Birthday), **IMECE'98**, Anaheim, CA, Nov. 16-20, 1998.

409. "A Constitutive Model for Ferroelectric Ceramics", *Symposium on Phase Transformations and Active Composites*, **IMECE'98**, Anaheim, CA, Nov. 16-20, 1998.

410. "On the Derivation of Locking-Free Timoshenko Beam Finite Element", *Numerical Analysis Seminar*, Department of Mathematics, Texas A&M University, College Station, Dec. 9, 1998.

411. "On Alternative Formulations of the Locking-Free Superconvergent Timoshenko Beam Finite Element", *Seminar*, Institute for High Performance Computing, Singapore, January 15, 1999.

412. "Vibration Suppression of Magnetostrictive Beams and Plates", *Seminar*, Institute for High Performance Computing, and Faculty of Engineering at National University of Singapore, Singapore, January 25, 1999.

413. "On the Dynamic Behavior of the Locking-Free Superconvergent Timoshenko Beam Finite Element", *Seminar*, Department of Civil Engineering, University of California, Davis, February 25, 1999.

414. "A Procedure for the Recovery of Interlaminar Stresses", (with C. M. Dakshina Moorthy) invited paper presented at *3rd National Congress on Computational Mechanics*, Volos, Greece, 24-26 June, 1999.

The following invited lectures were presented at the *Fifth SERC School on Advanced Geophysical Fluid Dynamics*, June 15-July 15, 1999, National Geophysical Research Institute, Hyderabad, India:

415. "An Introduction to the Finite Element Method", June 29, 1999.

416. "Finite Element Models of Flows of Viscous Incompressible Fluids", July 2, 1999.

417. "Vibration Suppression of Composite Laminates with Magnetostrictive Layers" (with J. I. Barbosa), invited paper presented at *International Conference on Smart Materials, Structures and Systems*, 7-10 July 1999, Indian Institute of Science, Bangalore, India.

418. "On the Penalty Function Formulation of Viscous and Viscoleastic Flows", *seminar* presented at CMMS, National Aerospace Laboratories, Bangalore, India, July 9, 1999.

The following invited lectures were presented at the *Symposium on Mechanics of Composite Materials and Structures*, July 15, 1999, Departamento de Engenharia Civil and Departamento de Engenharia Mecânica, Faculdade de Ciências e Tecnologia da, Polo II-UC, Universidade de Coimbra, Coimbra, Portugal:

419. "Thermomechanical Analysis of Functionally Graded Plates", July 15, 1999.

420. "Analysis of Laminated Beams and Plates with Embedded Magnetostrictive Layers", July 15, 1999.

421. "Mindlin Plate Solutions of Functionally Graded Circular Plates", (with C. M. Wang) *Fifth U. S. National Congress on Computational Mechanics*, University of Colorado, Boulder, August 4-6, 1999.

422. "Nonlinear Finite Element Analysis of Functionally Graded Plates", *Fifth U. S. National Congress on Computational Mechanics*, University of Colorado, Boulder, August 4-6, 1999.

423. "A Hierarchical Iterative Procedure for the Analysis of Composite Laminates", *Fifth U. S. National Congress on Computational Mechanics* (with J.A. Mitchell), University of Colorado, Boulder, August 4-6, 1999.

424. "Relationships Between Classical and Shear Deformation Beam and Plate Theories", *Seminar*, Faculty of Mechanical Engineering, Electrical and Electronics, University of Guanajuato (Universidad de Guanajuato), Salamanca, Mexico, October 27, 1999.

425. "Nonlinear Thermomechanical Analysis of Functionally Graded Plates", *Fifth International Meeting of Mechanical Engineering*, Instituto Tecnologico de San Luis Potosi, Mexico, October 27-29, 1999.

426. "Nonlinear Thermomechanical Analysis of Through-Thickness Graded Plates", *Seminar*, Department of Mechanical Engineering, Tulane University, New Orleans, November 12, 1999.

427. "Development of Locking-Free Elements Using a Modified First-Order Shear Deformation Theory of Laminated Composite Beams and Plates", paper presented at the Symposium Honoring the 70th Birthdays of Profs. Charles W. Bert and Jack R. Vinson, *IMECE'99*, Nashville, November 15, 1999.

428. "The Penalty Function Method in the Numerical Simulation of Viscous Incompressible Fluids and Shear Deformable Plates", *Seminar*, Department of Computational Science, National University of Singapore, 6 January 2000.

429. "Relationships Between Classical and Shear Deformation Theories for the Development of Locking-Free Finite Elements", *Workshop on Recent Research Activities in Computational Mechanics*, Center for Advanced Computation in Engineering Sciences (ACES), National University of Singapore, 6 January 2000.

430. "Control of Composite Laminates Using Magnetostrictive Layers", *Seminar*, The Institute of High Performance Computing and Singapore-MIT Alliance (SMA), National University of Singapore, 12 January 2000.

431. "Exact Relationships Between Classical and Shear Deformation Plate Theories", *Structural Engineering Seminar Series*, Department of Civil Engineering, University of Illinois, Urbana-Champaign, 27 March 2000.

432. "Relationships Between Classical and Shear Deformation Beams and Plate Theories, with Application to the Development of Locking-Free Finite Elements", *Seminar*, School of Aerospace Engineering, Georgia Institute of Technology, Atlanta, GA, 18 April 2000.

433. "Finite Element Analysis of Film Blowing Process", *Finite Elements in Fluids* (with R. Mayavaram), University of Texas at Austin, May 1-5, 2000.

434. "Recent Advances in Shear Deformation Plate Solutions: Relationships to the Classical Plate Theory," *Seminar*, University of Zaragoza, Zaragoza, Spain, June 9, 2000.

435. "Vibration Control of Laminated Composite Plates and Adaptive Structures," *Seminar*, Technical University of Lisbon, Portugal, June 15, 2000.

436. "Relationships Between the Solutions of Shear Deformation Plate Theories and the Classical Plate Theory," *Seminar*, Technical University of Lisbon, Portugal, June 15, 2000.

437. "Finite Element Analysis of Non-Isothermal Viscoelastic Fluid Using a Conformation Tensor Model" (with Achuth Rao), *Forum on Finite Element Applications in Fluid Dynamics* at the **2000 Fluids Engineering Summer Meeting**, June 2000, Boston, MA.

438. "Modeling of Molecular Orientation and Phase Transition in Polymers During the Film Blowing Process" (with Achuth Rao), *ASME National Heat Transfer Conference*, August 2000, Pittsburgh, PA.

439. "Bending Solutions of the Levinson Plate Theory in Terms of the Classical Plate Theory" (with C. M. Wang and G. T. Lim), *15th Annual Technical Conference of the American Society of Composites*, September 24-27, 2000, Texas A&M University, College Station, TX.

440. "Reddy, J. N., "Advances in Computational Modeling of Composite Materials and Multiscale Computations," *Seminar*, Department of Mechanical Engineering, Aeronautical Engineering and Mechanics, Rensselaer Polytechnic Institute, October 17, 2000.

441. "Vibration Control of Laminated Composite Plates Using Magnetostrictive Layers", (with S. Krishnan) Proceedings of *Adaptive Structures and Material Systems,* IMECE 2000, November 5-10, Walt Disney Dolphin, Orlando, FL, 2000.

442. "Relationships Between the Solutions of Shear Deformation Plate Theories and the Classical Plate Theory" *Workshop on Structural Mechanics,* December 5, 2000, National Taiwan University, Taipei, Taiwan.

443. "On Health-Monitoring of Composite Structures Using Embedded Smart Layers" *Workshop on Structural Mechanics,* December 5, 2000, National Taiwan University, Taipei, Taiwan.

444. "Analysis of Shear Deformation in Plate Structures," *Seminar*, National Institute for Aviation Research, Wichita State University, March 2, 2001.

445. "Recent Advances and Future Directions in Computational Modeling of Advanced Materials", *Seminar,* Mechanical and Aerospace Engineering Department, North Carolina State University, Raleigh, NC, April 2, 2001.

446. "Development of Locking-Free Beam Finite Elements", *Seminar,* Dipartimento di Meccanica, Strutture, Ambiente e Territorio, University of Cassino, Cassino, Italy, April 23, 2001.

447. "Thermomechanical Modeling of Functionally Graded Plates", *Seminar,* Dipartimento di Meccanica, Strutture, Ambiente e Territorio, University of Cassino, Cassino, Italy, April 24, 2001.

448. "Relationships Between Shear Deformation Theories and the Classical Theory and Their Use in the Development of Locking-Free Finite Elements", *Seminar,* Dipartimento di Meccanica, Strutture, Ambiente e Territorio (Department of Industrial Engineering), University of Cassino, Cassino, Italy, April 24, 2001.

449. "Modeling of Materials with Special Focus on Functionally Graded Plates and Smart Structures", *Seminar,* Department of Civil Engineering, University of Rome, Tor Vergata, Italy, Rome, Italy, April 26, 2001.

450. "On Shear Deformable Finite Elements", *Seminar,* Department of Mechanical Engineering, University of Zaragoza, Zaragoza, Spain, May 14, 2001.

451. "Relationships Between Classical and Shear Deformable Plate Solutions", *Seminar,* Departmento de Ingeniería Mecánica, Universidad Carlos III de Madrid, Madrid, Spain, May 16, 2001.

452. "Vibration control of laminated composite plates using shear deformation theories", *Symposium on Modeling, Testing and Damage Identification of Adaptive Composite Structures,* IDMEC/IST - Instituto Superior Téchnico, Technical University of Lisbon, P'olo I.S.T., Lisbon, Portugal, May 21, 2001.

453. "Canonical forms of the bending relationships between various shear deformation theories and the classical plate theory", *Symposium on Modeling, Testing and Damage Identification of Adaptive Composite Structures,* IDMEC/IST - Instituto Superior Téchnico, Technical University of Lisbon, P'olo I.S.T., Lisbon, Portugal, May 21, 2001.

454. ``Vibration Suppression of Laminated Composite Plates Using Magnetostrictive Inserts,'' (with S. C. Pradhan, K. Y. Lam, T. Y. Ng*) *First MIT Conference on Computational Mechanics*, MIT, Cambridge, MA, June 2001.

455. ``Recent Advances in Computational Modeling of Advanced Materials,'' (*seminar*) Hong Kong Institution of Engineers (HKIE), Civil Division, Hong Kong, June 21, 2001.

456. ``An Overview of Research in Modeling of Materials and Structures," (*seminar*), Department of Civil Engineering, The National University of Singapore, Singapore, July 12, 2001.

457. ``Recent Developments in Smart Structures," (*seminar*), Department of Civil Engineering, The National University of Singapore, Singapore, July 19, 2001.

458. ``Finite Element Modeling of Convective Heat Transfer with Particle Tracking," (*seminar*), National Geophysical Research Institute (NGRI), Hyderabad, India, July 30, 2001.

459. ``Parallel Optimization in a Structural Mechanics Code Applied to the Problem of Fatigue in Metals: Part I, A Parallel 3D Meshless Code," (with P. Schembri and D. Crane*), Sixth U.S. National Congress on Computational Mechanics Conference (USNCCM VI),* Hyatt Regency Dearborn, Dearborn, MI, August 1-3, 2001.

460. ``On Least Squares Finite Element Models of Boundary Value Problems with Applications to Plate Bending," (*seminar*), National University of Singapore, Singapore, January 10, 2002.

461. ``On Least-Squares Finite Element Formulations of Compressible Flows," (*seminar*), Institute for High Performance Computing, Singapore, January 12, 2002.

462. ``Vibration Suppression of Cross-Ply Laminated Plates with Magnetostrictive Layers," (with F. Rostam-Abadi and S. J. Lee*), 21st South Eastern Conference on Theoretical and Applied Mechanics (SECTAM XXI),* University of Central Florida, Orlando, FL, May 19-21, 2002.

463. ``Laminated SMA Beam Finite Elements," (with S. Marfia and E. Sacco*), Fifth World Congress on Computational Mechanics (WCCM V),* Vienna, Austria, July 7-12, 2002.

464. ``Modelling of Adaptive Structures Using Layerwise Finite Element Shell Model," (with J. E. Semendo Garcao, C. M. Mota Soares, C. A. Mota Soares*), Fifth World Congress on Computational Mechanics (WCCM V),* Vienna, Austria, July 7-12, 2002.

465. ``Computational Mechanics: Present and Future," *DCISSE and CSAM Colloquium Series,* University of Arkansas at Littlerock, Littlerock, AR, September 27, 2002.

466. ``A Computational Framework for the Analysis of Engineering Problems," *Seminar* (with K. S. Surana), Wright-Patterson Air Force Base, Ohio, October 7, 2002.

467. ``Computational Models for Composite Materials," Lecture 1 in a One-Day Workshop on *Modeling of Advanced Materials and Structures*, Indian Institute of Science, Bangalore, December 9, 2002.

468. ``Theories and Analysis of Composite Plates," Lecture 2 in a One-Day Workshop on *Modeling of Advanced Materials and Structures*, Indian Institute of Science, Bangalore, December 9, 2002.

469. ``Analysis of Functionally Graded Plates and Laminates with Smart Material Layers," Lecture 3 in a One-Day Workshop on *Modeling of Advanced Materials and Structures*, Indian Institute of Science, Bangalore, December 9, 2002.

470. ``The *k*-Version of the Finite Element Method, A New Computational Technology," Lecture 4 in a One-Day Workshop on *Modeling of Advanced Materials and Structures*, Indian Institute of Science, Bangalore, December 9, 2002.

471. ``Computational Modeling of Advanced Materials and Structures," *C. S. Krishnamoorthy Memorial Lecture*, Indian Institute of Technology, Madras, December 10, 2002.

472. ``Future Directions in the Computational Modeling of Materials and Structures," *Nanyang Professor Lecture*, Nanyang Technological University, Singapore, December 23, 2002.

473. ``Least-Squares Finite Element Formulations of the Navier-Stokes Equations," *Seminar in Singapore-MIT Alliance (SMA) Program,* National University of Singapore, Singapore, March 13, 2003.

474. ``Mixed Plate Bending Elements Based on Least-Squares Formulation," *Seminar,* Institute for High Performance Computing, Singapore, March 14, 2003.

475. ``Modeling of FGM and Smart Plate Structures and a New Computational Methodology," *Workshop on Advanced Materials*, Rio de Janeiro, Brazil, June 9-13, 2003.

476. ``Variationally Consistent Higher-Order Global Differentiability Finite Element Processes for Elastic Wave Propagation in Laminated Composites," (with K. S. Surana et al) *US National Congress of Computational Mechanics*, Albuquerque, NM, July 27-31, 2003.

477. ``A High-Order Space-Time Coupled Least-Squares Finite Element Formulation for Incompressible Fluid Flows," (with J. P. Pontaza) *US National Congress of Computational Mechanics*, Albuquerque, NM, July 27-31, 2003.

478. ``Pollution Free Finite Element Processes for Helmholtz Equation for any Wave Number," (with K. S. Surana et al) *US National Congress of Computational Mechanics*, Albuquerque, NM, July 27-31, 2003.

479. ``Computational Mechanics: Present and Future," *Seminar*, Mechanical Engineering Academy Seminar Series, Texas Tech University, Lubbock, Texas, October 3, 2003.

480. ``Numerical Simulations of Materials and Mechanics," *Seminar*, Mechanical Engineering Department Faculty Seminar Series, Texas A&M University, College Station, Texas, October 13, 2003.

481. ``Some Thoughts on Effective Technical Writing," Lecture presented in MEEN 689 Course on *Technical Writing* (taught by Ted Hartwig), Texas A&M University, College Station, Texas, November 3, 2003.

482. "Nonlinear Thermoelastic Analysis of Functionally Graded Plates," (with W. Aliaga) *Modeling and Design of Functionally Graded Materials* Symposium at International Mechanical Engineering Conference and Exhibition (IMECE), November 17, 2003.

483. "Mechanical modeling and experimental observation of surface damage phenomena of polymers," (with Lim, G.T., Sue, H.-J., Wong, M., Moyse A.), *Proceedings of the International Conference on Polyolefins*, Houston, pp. 577-584, 2003.

484. "Scratch damage phenomena of polyolefin materials," (with M. Wong, M., Lim, G.T., Rood, P.R., Moyse A., and Sue, H.-J.), *Proceedings of the TPOs in Automotives,* Netherlands, 2003.

485. "Mechanical modeling and surface characterization of scratch in polymers," (with G. T. Lim, H.-J. Sue, M. Wong, and A. Moyse), *Annual Technical Conference - ANTEC, Conference Proceedings*, Vol. 3, pp. 3618-3622, 2003.

486. "Novel Computational Techniques for Numerical Simulation of Flow and Deformation," *Institute Lecture*, at Natinal Institute of Technology (NIT), Warangal, India, January 1, 2004.

487. "Hierarchical Modeling of Damage in Composite Structures," (with D. H. Robbins, Jr. and F. Rostam-Abadi), *45th AIAA/ASME/ASCE/AHS/ASC Structures, Structural Dynamics*, Plam Springs, CA, April 19-22, 2004.

488. "Assessment of plastic failure of polymers due to surface scratches," (with G. T. Lim, H.-J. Sue, and J. N. Reddy,) *Annual Technical Conference,* Chicago, 2004 (pp. 4044-4048).

489. "On Least-Squares Based Finite Element Models for Problems of Mechanics," *Seminar*, Department of Mechanical Engineering, Indiana University-Purdue University at Indianapolis (IUPUI), Indianapolis, June 11, 2004.

490. "On K-version Finite Element Method for Problems of Engineering," *Seminar*, Department of Mechanical Engineering, Indiana University-Purdue University at Indianapolis (IUPUI), Indianapolis, June 11, 2004.

491. "Mechanics of Carbon Nanotube Based Composites with Molecular Dynamics and Mori-Tanaka Methods," (with V. U. Unnikrishnan and F. Rostam-Abadi), *International Conference on Scientific and Engineering Computation,* June 30th – July 2, 2004, Singapore.

492. "Mechanical and Thermal Buckling of Functionally Graded Ceramic-Metal Plates," (with R. A. Arciniega), *U.S.-South America Workshop on Mechanics and Advanced Materials in Research and Education*, Rio de Janeiro, Brazil, August 3-6, 2004.

493. "Mechanics of Carbon Nanotube Based Composites with Molecular Dynamics and Mori-Tanaka Methods," (with V. U. Unnikrishnan) *U.S.-South America Workshop on Mechanics and Advanced Materials in Research and Education*, Rio de Janeiro, Brazil, August 3-6, 2004.

494. "Vibration control of composite structures using smart material layers," Seminar, China Academy of Sciences, Railway Science and Technology & Research & Development Center, August 30, 2004.

495. "A least-squares based computational models of problems in mechanics," Seminar, China Academy of Sciences, Railway Science and Technology & Research & Development Center, August 31, 2004.

496. "Relationships Between The Classical And Shear Deformation Theories," *Seminar* 1, Institute of Auto-Body and Die Engineering, Jilin University, Nanling Campus, Changchun, China, September 2, 2004.

497. "A least-squares based finite element analysis of plate and shell structures," *Seminar* 2, Institute of Auto-Body and Die Engineering, Jilin University, Nanling Campus, Changchun, China, September 2, 2004.

498. "Computational modeling of advanced materials and structures," *Seminar* 3, Institute of Auto-Body and Die Engineering, Jilin University, Nanling Campus, Changchun, China, September 3, 2004.

499. "On least-squares finite element models of problems in fluid mechanics," *Seminar* 4, Institute of Auto-Body and Die Engineering, Jilin University, Nanling Campus, Changchun, China, September 3, 2004.

500. "Least-squares finite element formulations for shear-deformable plates and shells," (with J. P. Pontaza), Sixth World Congress of Computational Mechanics, Beijing, China, September 5-9, 2004.

501. "Vibration control of composite laminates using smart material layers ," (with F. Rostam-Abadi), Sixth World Congress of Computational Mechanics, Beijing, China, September 5-9, 2004.

502. "On Least-Squares Finite Element Models of Problems in Solid Mechanics," *Seminar*, Department of Solid Mechanics, Royal Technical Institute (KTH), Stockholm, Sweden, October 4, 2004.

503. ``On Least-Squares Finite Element Models of Solid and Fluid Mechanics," *Seminar*, Lockheed Martin, Marietta, Georgia, October 19, 2004.

504. "On Least-Squares Finite Element Models of Problems in Solid Mechanics," *Seminar*, Department of Solid Mechanics, Royal Technical Institute (KTH), Stockholm, Sweden, October 4, 2004.

505. "Finite Element Models of Fluid and Solid Mechanics Problems Based on Least-Squares Variational Principles," *Seminar*, Department of Mechanical Engineering, University of Illinois, Chicago, October 29, 2004.

506. "Computational Modeling of Materials and Structures," Invited lecture presented at the *US-Africa Workshop on Mechanics and Materials*, University of Cape Town, South Africa, January 24-28, 2005.

507. "Computational Modeling of Smart and FGM Materials and Structures," *Seminar* in the Small Smart Systems Center, Department of Mechanical Engineering at University of Maryland, College Park, May 11, 2005.

508. "Computational Models for the Analysis of Materials and Structures," *Seminar* presented in Aerospace Engineering Department at the Indian Institute of Science, Bangalore, INDIA, May 30, 2005.

509. "Computational Engineering Science Degree Program," *Public Lecture* presented in the Faculty of Engineering at the National University of Singapore, Singapore, June 9, 2005.

510. "The k-Version of Finite Element Method for Initial Value Problems: Mathematical and Computationa Framework," (K.S. Surana, S. Allu, and J. N. Reddy), 8th *U.S. National Congress of Computational Mechanics*, University of Texas at Austin, Austin, Texas, July 25-27, 2005.

511. "On the Divergence-Free Constraint and Proper Velocity-Pressure Coupling for Least-Squares Formulations of Incompressible Flow," (J.P. Pontaza and J. N. Reddy), 8th *U.S. National Congress of Computational Mechanics*, University of Texas at Austin, Austin, Texas, July 25-27, 2005.

512. "Homogenization of an Adherent Cell Using Rule of Mixtures," (Ginu Unnikrishnan and J. N. Reddy), 8th *U.S. National Congress of Computational Mechanics*, University of Texas at Austin, Austin, Texas, July 25-27, 2005.

513. "Multiscale Analysis of Carbon Nanotube Reinforced High Density Polyethylene Composites," (V. Unnikrishnan and J. N. Reddy), 8th *U.S. National Congress of Computational Mechanics*, University of Texas at Austin, Austin, Texas, July 25-27, 2005.

514. "*h, p, k* Galerkin/Weak Form and Least Squares Finite Element Processes for 1-D and 2-D Helmholtz Equations," (K. Surana, P. Gupta, J. N. Reddy, and P. TenPas), 8th *U.S. National Congress of Computational Mechanics*, University of Texas at Austin, Austin, Texas, July 25-27, 2005.

515. "Computational Mechanics: The Third Scientific Methodology ," SixmaXi Distinguished Scientist Lecture, Texas A&M University, October 26, 2005.

516. "Computational Models of Materials and Structures," *Seminar* presented at Indian Institute of Technology, Madras, Chennai, India, November 30, 2005.

517. "Least-squares Based Finite Element Models of Viscous Incompressible Flows," *Seminar* presented at the Ramaiah School of Advanced Studies, Bangalore, India, December 2, 2005.

518. "Nonlinear Analysis of Composite and Functionally Graded Shell Structures," *Seminar* presented at the Indian Institute of Technology, Bangalore, India, December 2, 2005.

519. "Linear and Nonlinear Analysis of Shells," Lecture delivered at the *Workshop on Computational Methods in Structural Mechanics and Fluid Flows* (COSMECFLOWS), Osmania University, Hyderabad, India, December 5, 2005.

520. "Least-squares Finite Element Formulations for Viscous Incompressible and Compressible Flows," Lecture delivered at the *Workshop on Computational Methods in Structural Mechanics and Fluid Flows* (COSMECFLOWS), Osmania University, Hyderabad, India, December 5, 2005.

521. "A Finite Deformation Shell Formulation for the Analysis of Composite and Functionally Graded Material Structures," **Invited Lecture** presented at *Symposium on Physics and Mechanics of Advanced Materials*, January 18-20, 2006, Singapore.

522. "Role of Computational Engineering Science in Modeling of Physical Phenomena," **Invited Lecture** presented at *Symposium on Engineering Science*, April 20, 2006, Singapore.

523. "A Consistent Finite Element Model for Nonlinear Analysis of Composite and Functionally Graded Shell Structures," **Opening Plenary Lecture** presented at ***I**nternational **C**onference on **C**omposite Materials and Nano-**S**tructures* (IC2MS-06), April 26-29, 2006, Shah Alam (Kaula Lumpur), Malaysia.

524. "A New Mathematical and Computational Framework for Finite Element Processes for BVP & IVP Based on *h, p, k*," Seminar presented at the Army Research Office, Research Triangle Park, NC, May 10, 2006.

525. "Nonlinear Analysis of Composite and FGM Shell Structures Using Tensor-Based Shell Elements," *III European Conference on Computational Mechanics, Solids, Structures and Coupled Problems in Engineering*, LNEC, Lisbon, Portugal, June 5-8, 2006.

526. "Mixed Finite Elements based on Least-Squares Formulation for the Static Analysis of Laminated Composite Plates," F. Moleiro, C. M. Mota Soares, C. A. Mota Soares, J. N. Reddy, *III European Conference on Computational Mechanics, Solids, Structures and Coupled Problems in Engineering*, LNEC, Lisbon, Portugal, June 5-8, 2006.

527. "Finite Element Simulations in Structures and Beyond ," Lecture presented at Institution of Engineers Singapore (IES), IStructE Joint Committee (Singapore Division) on July 6, 2006.

528. "Nonlinear Analysis of Functionally Graded Shell Structures Using Tensor-Based Shell Element," Key Note Lecture, *5th International Conference on Mechanics and Materials in Design* ***(M2D'2006),*** Porto, Portugal, July 24-26, 2006.

529. "On Nonlinear Analysis of Composite and Functionally Graded Shell Structures," Invited Lecture, *Tenth East Asia Pacific Conference on Structural Engineering and Construction*, August 2-4, 2006, Bangkok, Thailand.

530. "Computational Models of Viscous Flows and Shell Structures," Invited Lecture presented at *International Conference on Enhancement and Promotion of Computational Methods in Engineering Science and Mechanics* (CMESM 2006), Changchun, China, August 10-12, 2006.

531. "A Tensor-Based Element for Nonlinear Analysis of Shell Structures," Seminar presented in the Department of Mechanical and Materials Engineering at Univerisiti Kebangsaan Malaysia (UKM) , August 28, 2006.

532. "Simulation-Based Computational Engineering Science," Seminar presented in the Engineering Science Programme, National University of Singapore, August 25, 2006.

533. "Nonlinear Analysis Of Shell Structures Using Tensor-Based Shell Finite Element," Seminar in the School of Civil and Environmental Engineering, Cornell University, Sept. 5, 2006.

534. "Numerical Simulation-Based Engineering Science: The Third Scientific Methodology," Public Lecture presented on behalf of the national University of Singapore at Woodlands Public Library, September 23, 2006.

535. "Nonlinear Analysis of Composite and FGM Shell Structures Using Tensor-Based Shell Elements," *International Workshop in Mechanics of Composites*, Bad Herrenab, Germany, November 26-29, 2006.

536. "Nonlinear Analysis of Composite and FGM Shell Structures Using Tensor-Based Shell Elements," *International Workshop in Mechanics of Composites*, Bad Herrenab, Germany, November 26-29, 2006.

537. "Forty Years of Significant Developments in Mechanics of Composite Materials and Structures" Special invited lecture, *International Workshop in Mechanics of Composites*, Bad Herrenab, Germany, November 26-29, 2006.

538. "Computational Engineering Science: The Third Scientific Methodology for the 21st Century and Beyond," **B. R. Seth Memorial Lecture** at the *51st Congress of Indian Society of Theoretical and Applied Mechanics (ISTAM)*, December 18-21, 2006, Andhra University, Visakhapatnam, INDIA.

539. "On the k-Version Least-Squares Finite Element Models of Problems in Mechanics," *Graduate Aeronautics Engineering Seminar, California Institute of Technology*, Pasadena, CA, March 9, 2007.

540. "The Finite Element Method in Structures and Beyond," SPDC ASME USB (Student Professional Development Conference), University of Simon Bolivar, Caracas, Venezuela, May 9-13, 2007.

ORGANIZATION OF CONFERENCES AND SESSIONS

ORGANIZATION OF CONFERENCES

1. *Midwest Mechanics Conference,* University of Oklahoma, Norman (member, *Organizing Committee*).

2. *2lst Annual Meeting of the Society of Engineering Science,* Virginia Polytechnic Institute, Blacksburg, Oct. l5-l7, l984 (member, *Organizing Committee* and **Chairman of Proceedings**).

3. *International Symposium on Variational Methods in Geosciences,* (member, *Organizing Committee*), University of Oklahoma, September 1985.

4. *Fifth International Conference on Mathematical Modeling,* July 29-3l, l985, University of California, Berkeley (member, *Organizing Committee*).

5. *International Conference on Finite Elements in Computational Mechanics,* Indian Institute of Technology, Bombay, December 2-6, l985 (member, *Technical Organizing Committee*).

6. *ARO Workshop on Constitutive Models, Virginia Polytechnic Institute,* Blacksburg, VA, March 24-26, 1986 (**Organizer**).

7. *ASCE Engineering Mechanics Division Specialty Conference,* Virginia Polytechnic Institute, May 23-26, 1988 (member, *Organizing Committee).*

8. *Advanced Study Institute on Finite Element Analysis for Engineering Design,* Indian Institute of Technology, Madras, India, August 1-10, 1988 (**Co-Chairman**).

9. *Seventh International Conference on Finite Element Methods in Flow Problems,* The University of Alabama in Huntsville, April 3-7, 1989 (member, *Organizing Committee*).

10. *Seventh International Conference on Mathematical and Computer Modeling,* Chicago, IL, August 2-5, 1989 (member, *International Advisory Board*).

11. *Fourth Technical Conference on Composite Materials,* Virginia Polytechnic Institute and State University, Blacksburg, VA, October 3-6, 1989 (member, *Organizing Committee*).

12. *First U.S. Conference on Discrete Element Methods (DEM),* Colorado School of Mines, Golden, Co, Oct. 17-20, 1989 (member, *Technical Committee*).

13. *Second International Conference on Engineering Software,* Indian Institute of Technology, Delhi, India, Dec. 4-7, 1989 (member, *Technical Organizing Committee*).

14. *Indo-U.S. Workshop on Composites for Aerospace Applications,* Indian Institute of Science, Bangalore, India, July 23-27, 1990 (**Co-Chairman**).

15. *International Conference on Structural Testing, Analysis and Design,* Indian Institute of Science, Bangalore, July 29-August 3, 1990 (Member, *International Steering and Organization Committees*).

16. *Second World Congress on Computational Mechanics (WCCM II),* Stuttgart, West Germany, August 27-31, 1990 (member, *International Consulting Board*).

17. *International Conference on the Mechanics, Physics, and Structure of Materials,* Aug. 19-24, 1990, Aristotle University, Thessaloniki, Greece (Aristotle's 23 Centuries Celebration) (member, *International Organizing Committee*).

18. *First U.S. National Congress on Computational Mechanics,* Chicago, IL, July 21-24, 1991 (member, *International Advisory Committee*).

19. *First International Conference on Computational Structures Technology,* Heriot-Watt University, Edinburgh, Scotland, August 20-22, 1991 (member, *Conference Editorial Board*).

20. *IUTAM Symposium on Local Mechanics Concepts for Composite Materials,* Virginia Polytechnic Institute and State University, Blacksburg, Oct. 27-31, 1991 (**Co-Chairman**).

21. *Second International Congress on Recent Developments in Air- & Structure-Borne Sound and Vibration,* Auburn University, Auburn, Alabama, March 4-6, 1992 (member, *Scientific Committee*).

22. *Third International Conference on Computational Plasticity Fundamentals and Applications,* Barcelona, Spain, April 6-10, 1992 (member, *Technical Advisory Committee*).

23. *Eighth International Conference on Mechanics of Composite Materials,* Riga, Latvia, April 20-22, 1993 (member, *International Advisory Board*).

24. *Ninth International Conference on Mathematical and Computer Modeling,* University of California, Berkeley, CA, July 26-29, 1993 (member, *Organizing Committee*).

25. *Second Asian-Pacific Conference on Computational Mechanics,* Sydney, Australia, August 3-6, 1993 (member, *International Scientific Committee*).

26. *Second U. S. National Congress on Computational Mechanics,* Washington, D.C., August 1993 (member of *International Advisory Committee*).

27. *Advanced Study Institute on Engineering Analysis and Design,* Indian Institute of Technology, Madras, India, August 2-11, 1993 (**Co-Organizer**).

28. *First Pan-Pacific Conference on Computational Engineering,* Seoul, Korea, November 1-5, 1993 (member of the *International Scientific Committee*)

29. *Seventeenth Southeastern Conference on Theoretical and Applied Mechanics,* hosted by Louisiana Tech University and University of Arkansas at Hot Springs National Park, Arkansas, April 10-12, 1994 (*Editorial Committee Member*).

30. *Third World Congress on Computational Mechanics (WCCM III),* Tokyo, Japan, August 1-4, 1994 (*International Consulting Board Member*).

31. *Second International Conference on Computational Structures Technology,* Athens, Greece, August 30-September 1, 1994 (*Conference Editorial Board Member*).

32. *First Industry/University Symposium on High Speed Civil Transport Vehicle,* North Carolina A & T State University, Greensboro, NC 27411, December 4-6, 1994 (member of the *Advisory Committee*).

33. *Fourth Pan American Congress of Applied Mechanics (PACAM IV),* University of Salvador, Buenos Aires, Argentina, January 3-6, 1995 (member of the *Organizing Committee*).

34. *Fourth International Conference on Computational Plasticity Fundamentals and Applications,* Barcelona, Spain, April 3-6, 1995 (member of the *Technical Advisory Committee*).

35. *Tenth Engineering Mechanics Conference,* University of Colorado, Boulder, May 21-24, 1995 (member of the *National Steering Committee*).

36. *International Conference on Stability of Structures (ICSS 95),* June 7-9, 1995, Coimbatore, India (member of *International Technical Committee*).

37. *Third U. S. National Congress of Computational Mechanics*, Dallas, June 12-14, 1995 (**General Chairman**).

38. *International Conference on Computational Engineering Science (ICES'95)*, Hawaii, July 30-August 3, 1995 (member of *International Scientific Committee*).

39. *Advances in Structured and Heterogeneous Continua II,* August 14-18, 1995, Moscow, Russia (member of *Scientific Committee*).

40. *International Conference on Engineering Computation and Computer Simulation,* November 27-29, 1995, Changsha, China (member of *Scientific Committee*).

41. *Second ECCOMAS Conference on Numerical Methods in Engineering*, and *Third ECCOMAS Computational Fluid Dynamics Conference,* Paris, France, September 9-13, 1996 (member of the *International Support Committee*).

42. *SPIE's 4th Symposium on Smart Structures and Materials,* San Diego, 3-6 March 1997 (member of the *Program Committee on Control in Smart Structures*).

43. *Second International Conference on the Application of Numerical Methods in Engineering,* Universiti Pertanian Malaysia, Malaysia, 23-25 June 1997 (member of the *International Advisory Committee*).

44. *Fourth U. S. National Congress of Computational Mechanics,* San Francisco, August 6-8, 1997 (member of the *Scientific Program Committee*).

45. *Second International Conference on Composite Science and Technology,* University of Natal, Durban, South Africa, 9-11 June 1998 (member of the *International Advisory Committee*).

46. *NATO Advanced Study Institute on Mechanics of Composite Materials and Structures,* Tróia, Portugal, July 12-24, 1998; organized by Instituto de Engenharia Mecânica, Lisbon, Portugal (co-organizer).

47. *Fourth International Conference on Advances in Materials and Processing Technologies (AMPT`98),* organized by University Putra Malaysia, Mines Beach Resort, Kuala Lumpur, Malaysia, August 24-28, 1998 (member of the *International Scientific Advisory Committee (ISAC)*).

48. *International Conference on Theoretical, Applied, Computational, and Experimental Mechanics,* Indian Institute of Technology, Kharagpur, India, December 1-5, 1998 (member of the *International Advisory Board*).

49. *Integrity ● Reliability ● Failure, An International Conference,* University of Porto, Porto, Portugal, July 19-22, 1999 (member of the *International Scientific Committee*).

50. *Fifth U.S. National Congress on Computational Mechanics,* University of Colorado, Boulder, August 4-6, 1999 (member of the *International Advisory Committee*).

51. *Civil & Environmental Engineering Conference - Year 2000, New Frontiers & Challenges,* Asian Institute of Technology, Thailand, 8-12 November, 1999 (member of the *Honorary Advisory Committee*).

52. *Fourth Asia-Pacific Conference on Computational Mechanics (APCOM`99),* University of Singapore, Singapore, December 15-17, 1999 (member of the *Scientific Program Committee*).

53. *Fourth International Colloquium on Computation of Shell & Spatial Structures (IASS - IACM 2000),* June 5-7, 2000, Chania - Crete, Greece (member of the *Scientific Committee*).

54. *9th International Conference on Mechanics and Technology of Composite Materials*, September 11-14, 2000, Sofia, Bulgaria (member of the *International Organizing Committee*).

55. *CADCOMP 2000*, September 13-15, 2000, Bologna, Italy (member of the *International Scientific Advisory Committee*).

56. *Twentieth South Eastern Conference on Theoretical and Applied Mechanics (SECTAM XX),* April, 2000, Callaway Gardens, GA (organized by Auburn University) (member of the *Scientific Advisory Committee*).

57. *ICSSD 2000 - International Conference on Structural Stability and Dynamics*, Dec. 7-9, 2000, Taipei, Taiwan (member of the *Organizing Committee*).

58. *SPIE International Conference on Smart Materials and MEMS*, 13-16 December 2000, Melbourne, Australia (member of the *Program Committee*).

59. *First M.I.T. Conference on Computational Fluid and Solid Mechanics,* June 12-14, 2001, MIT, Cambridge, MA (member of the *Scientific Advisory Board*).

60. *The Second European Conference on Computational Mechanics (ECCM-2000)*, June 26-29, 2001, Polish Academy of Sciences, Polish Association for Computational Mechanics, Cracow University of Technology (member of the *International Scientific Committee*).

61. *International Conference on Materials for Advanced Technologies* (*ICMAT 2001*), **Symposium K: Advances in Polymers and Composites**, 1-6 July 2001, Singapore (member of the *International Scientific Committee*).

62. *First Congress of the Asian-Pacific Association for Computational Mechanics*, Sydney, Australia, October/November 2001 (member of the *International Scientific Committee*).

63. *New Trends in Design and Manufacture*, An International Symposium, November 3-7, 2001, Aswan, Egypt (member of the *International Scientific Committee*).

64. *International Conference on Advances in Civil Engineering*, January 3-5, 2002, Indian Institute of Technology, Kharagpur, India, (member of the *International Advisory Board*).

65. *The Second World Engineering Congress*, July 22-25, 2002, Kuching, Sarawak, Malaysia (member of the *International Advisory Committee* and Advisor to the Mechanical & Aerospace Engineering Conference).

66. *Fourth International Conference on Nonlinear Mechanics* (ICNM-IV) & *IUTAM Symposium on Duality-Complementarity-Symmetry in Nonlinear Mechanics* (IUTAM-SCDS), Shanghai, China, August 14-17, 2002 (member of the *Steering Committee*).

67. *Mechanics & Materials in Design* (M^2 D-4), 4th International Conference, Nagoya University, Nagoya, Japan, June 5-8, 2002 (member of the *International Scientific Committee*).

68. *International Conference on Scientific and Engineering Computation*, December 3-5, 2002, National University of Singapore, Singapore (member of the *International Scientific Advisory Committee*).

69. *Second International Conference on Structural Stability and Dynamics*, December 16-18, 2002, National University of Singapore, Singapore (member of the *Organizing Committee*).

70. *VII Congresso de Mecânica Aplicada e Computacional*, Universidade de Évora, April 14-16, 2003, Evora, Portuagal (member of the *International Scientific Advisory Committee*).

71. *International Conference* Bioengineering and Biosciences Conference (BBC) Singapore, June, 2003 (member of the *International Scientific Advisory Committee*).

72. *Fifth U.S. National Congress on Computational Mechanics,* University of Colorado, Boulder, August 4-6, 1999 (member of the *International Advisory Committee*).

73. *International Conference in Structural Engineering and Mechanics* (ASEM'04), Seoul, S. Korea, September 2-4, 2004 (member of the *International Scientific Advisory Committee*).

74. *Seventh International Conference on Computational Structures Technology*, Lisbon, Portugal, September 7-9, 2004 (member of the *Conference Editorial Board*).

75. *International Conference on Theoretical, Applied, Computational and Experimental Mechanics* (ICTACEM 2004), IIT, Kharagpur, INDIA, December 28-30, 2004 (member of the *International Scientific Advisory Committee*).

76. *Third International Conference on Structural Stability and Dynamics,* June 19-23, 2005, Kissemmee, Florida (**General Chair and Organizer**).

77. *Eighth U.S. National Congress on Computational Mechanics,* University of Texas, Austin, July 4-6, 2005 (member of the *International Advisory Committee*).

78. *International Conference on Advances in Structural Dynamics and Its Applications*, ICASDA-2005, Gandhi Institute of Technology and Management, Visakhapatnam, INDIA, December 7-9, 2005 (member of the *International Advisory Committee*).

79. *First International Symposium on Design Modelling and Experiments of Adaptive Structures and Smart Systems* (**DeMEASS I**), July 10-12, 2006, Bardonecchia (Turin), Italy (member of the *Advisory Board*).

80. *Seventh World Congress on Computational Mechanics,* co-hosted by Northwestern University and University of California, Los Angeles, Century Plaza Hotel & Spa, Los Angeles, California, July 16-22, 2006 (member of the *Scientific Advisory Board*).

81. *5th International Conference on Mechanics and Materials in Design,* July 24 - 26, 2006, Porto, Portugal (Member of *International Scientific Committee*).

82. *Tenth East Asia Pacific Conference on Structural Engineering and Construction (EASEC-10),* Asian Institute of Technology, Bangkok, Thailand, August 2-4, 2006 (member of the *International Steering Committee*).

83. *International Conference on Enhancement and Promotion of Computational Methods in Engineering Science and Mechanics*, Changuchun, China, 10-12 August, 2006 (**co-Organizer**).

84. *Multiscale and Functionally Graded Materials* (FGM2006), October 14-18, 2006, Hawaii, USA. (member of the *International Scientific Committee*).

85. *Trends in Product Life Cycle- Modeling, Simulation and Synthesis, PLMSS,* Bangalore, INDIA, December 18-19, 2006 (member of *International Advisory Committee*).

86. *Fifth International Conference on Nonlinear Mechanics* (*ICNM-V*), June 11-14, 2007, Shanghai, China (member of the *International Steering Committee*).

87. *International Conference on Computational Ballistics 2007* (CBAL2007), (member of the *Scientific Advisory Committee*), Wessex Institute of Technology, England.

88. *Second International Symposium on Design, Modelling and Experiments of Adaptive Structures and Smart Systems* (DeMEASS II), October 14-17, 2007 in Bad Herrenalb, Germany (member of the *Scientific Advisory Committee*).

ORGANIZATION OF SESSIONS

1. "Penalty Finite Elements" for the Mathematical Methods Committee of ASCE at the *Third ASCE/EMD Specialty Conference*, Sept. 17-19, 1979, The University of Texas at Austin, Austin, TX.

2. Computational Methods for Hypervelocity Impact Calculations", *Sixteenth Annual Meeting of the Society of Engineering Science*, Sept. 5-7, 1979, Northwestern University, Evanston, IL.

3. "Nonlinear Analysis of Composite Plates and Shells", *Eighteenth Annual Meeting of the Society of Engineering Science*, Sept. 2-4, 1981.

4. "Recent Developments in Finite Elements", (two sessions) *Eleventh Southeastern Conference on Theoretical and Applied Mechanics (SECTAM XI)*, April 8-9, 1982, The University of Alabama in Huntsville, Alabama.

5. "Finite-Elements in Fluid Flow", *Nineteenth Annual Meeting of the Society of Engineering Science*, October 27-29, 1982, University of Missouri-Rolla, Rolla, Missouri.

6. "Penalty-Finite Element Methods in Mechanics", for ASME Committee on Computing in Applied Mechanics (CONCAM), 1982 *ASME Winter Annual Meeting*, November 14-19, 1982, Phoenix, Arizona.

7. "Computational Methods-II: Recent Developments", *20th Annual Meeting of the Society of Engineering Science*, August 22-24, 1983, University of Delaware, Newark, Delaware.

8. "Vibrations of Plates and Shells", (two sessions) *XII Southern conference on Theoretical and Applied Mechanics*, Callaway Gardens, GA, May 10-11, 1984.

9. "Computational Methods in Fluid Flow", *1984 ASCE Spring Convention*, Atlanta, May 14-17, 1984.

10. "Non-Newtonian Flows", *21st Meeting of the Society of Engineering Science*, Virginia Polytechnic Institute, Blacksburg, October 1984.

11. "Analysis of Composite Material Structures", *2lst Annual Meeting of the Society of Engineering Science*, Virginia Polytechnic Institute and State University, Blacksburg, VA, October l5-l7, l984.

12. "Constitutive Modeling", *21st Annual Meeting of the Society of Engineering Science*, Virginia Polytechnic Institute and State University, Blacksburg, VA, October 15-17, l984.

13. "Computational Methods in Composites", *ASME Pressure Vessels & Piping Conference*, New Orleans, LA, June 1985.

14. "Computational Methods in Composites", *Joint Meeting of ASME and ASCE*, Albuquerque, NM, June 23-25, 1985.

15. "Symposium on Recent Advances in Computational Mechanics", ASME/ASCE *Summer Meeting*, Albuquerque, NM, June 23-25, l985.

16. "Stress Analysis of Adhesively Bonded Joints", *22nd Annual Technical Meeting of the Society of Engineering Science*, The Pennsylvania State University, State College, PA, October 7-9, 1985.

17. "Computational Methods for Plate and Shell Problems", ASCE/EMD *Specialty Conference* Virginia Polytechnic Institute and State University, Blacksburg, VA, May 23-25, 1988.

18. "Modeling of Non-Newtonian Viscoelastic Flows", *Seventh Int. Conference on Finite Element Methods in Flow Problems*, University of Alabama in Huntsville, Alabama, April 3-7, 1989.

19. "Mechanics of Laminated Composite Structures", *Twelfth Canadian Congress of Applied Mechanics*, Carleton University, Ottawa, Canada, May 28-June 2, 1989.

20. "Micromechanics of Composite Materials", *Third Joint ASCE/ASME Mechanics Conference*, San Diego, CA, July 9-12, 1989.

21. "Recent Advances in Refined Plate and Shell Elements for Composites", (with R. K. Kapania) *First U. S. National Congress on Computational Mechanics*, Chicago, IL, July 21-24, 1991.

22. "Computational Models for Study of Local Effects in Composites", (with J. L. Teply), *First U. S. National Congress on Computational Mechanics*, Chicago, IL, July 21-24, 1991.

23. "Mechanics of Composite Structures", (with N. F. Knight, Jr.) *28th Annual Technical Meeting of the Society of Engineering Science*, Gainesville, FL, Nov. 6-8, 1991.

24. "Enhancing Analysis Techniques for Composite Materials", (seven sessions organized with L. Schwer and A. Mal), *1991 ASME Winter Annual Meeting*, Atlanta, GA, Dec. 4-6, 1991.

25. "Advances in Finite Element Analysis in Fluid Dynamics", (two sessions organized with M. N. Dhaubhadel and M. S. Engelman) *1991 ASME Winter Annual Meeting*, Atlanta, GA, Dec. 4-6, 1991.

26. "Advances in Finite Deformation Problems in Materials Processing and Structures", (three sessions organized with N. Chandra) *1991 ASME Winter Annual Meeting*, Atlanta, GA, Dec. 4-6, 1991.

27. "Inelastic Deformation of Composite Materials", *Third Int. Conference on Computational\ Plasticity and Applications*, Barcelona, Spain, April 6-10, 1992.

28. "Advances in Finite Element Analysis in Fluid Dynamics", (Two sessions organized with M. N. Dhaubhadel and M. S. Engelman) *1992 ASME Winter Annual Meeting*, Anaheim, CA, November 9-14, 1992.

29. "Computational Modeling of Composites", (Three sessions organized with N. Chandra and A. K. Noor) *First Joint Meeting of ASCE-EMD, ASME-AMD, and SES*, Charlottesville, Virginia, June 6-9, 1993.

30. "Micro and Macromechanical Studies of Composites", (with P. K. Banerjee), *Second U. S. National Congress of Computational Mechanics,* August 16-18, 1993, Washington, D.C

31. "Failure Mechanics for Composite Materials", (with J. Whitcomb), *Second U. S. National Congress of Computational Mechanics,* August 16-18, 1993, Washington, D.C.

32. "Recent Advances in Computational Mechanics", *Twelfth U. S. National Congress of Applied Mechanics,* June 26-July 1, 1994, University of Washington, Seattle, Washington.

33. "Computational Fluid Dynamics and Heat Transfer", *Society of Engineering Science 31st Annual Meeting,* October 12-14, 1994, Texas A&M University, College Station, Texas.

34. "Composite Materials and Structures", the *Second International Conference on Computational Structures Technology,* August 30-September 1, 1994, Athens, Greece.

35. "Mechanics of Composites with Application to Infrastructure", (with E. J. Barbero) *Tenth ASCE Engineering Mechanics Conference,* May 21-24, 1995, University of Colorado, Boulder, Colorado.

36. "Analytical and Computational Models for Composites", (with E. J. Barbero) *Tenth ASCE Engineering Mechanics Conference,* May 21-24, 1995, University of Colorado, Boulder, Colorado.

37. "Damage and Failure of Composites", *Tenth ASCE Engineering Mechanics Conference,* May 21-24, 1995, University of Colorado, Boulder, Colorado.

38. "Modeling of Smart and Intelligent Structures", *Tenth ASCE Engineering Mechanics Conference,* May 21-24, 1995, University of Colorado, Boulder.

39. "New Developments in Plate and Shell Finite Elements", *Tenth ASCE Engineering Mechanics Conference,* May 21-24, 1995, University of Colorado, Boulder, Colorado.

40. "Micromechanics of Composites", (with E. J. Barbero) *Fourth Pan American Congress of Applied Mechanics (PACAM IV),* January 3-5, 1995, Buenos Aires, Argentina.

41. "Damage Mechanics of Composites", (with E. J. Barbero) *Fourth Pan American Congress of Applied Mechanics (PACAM IV),* January 3-5, 1995, Buenos Aires, Argentina.

42. "Numerical Modeling of Composites", (with E. J. Barbero) *Fourth Pan American Congress of Applied Mechanics (PACAM IV),* January 3-5, 1995, Buenos Aires, Argentina.

43. "Computational Modeling of Damage Initiation, Evolution and Identification in Composite Materials and Structures", (with Ronald C. Averill) a three-session symposium organized at the *1996 International Mechanical Engineering Congress and Exposition (IMECE'96),* November 17-22, 1996, Atlanta, Georgia.

44. "Functionally Graded and Shape Memory Materials", (with Cate Brinson) a three-session symposium organized at the *1997 International Mechanical Engineering Congress and Exposition (IMECE'97),* November 16-21, 1997, Dallas, Texas.

45. "Constitutive and Computational Models of Shape Memory and Functionally Graded Materials", a two-session symposium organized at the *Engineering Mechanics Specialty Meeting of ASCE,* University of California, San Diego, May 17-20, 1998.

46. "Micromechanics and Damage Characterization of Advanced Materials", (with Shaker A. Meguid) a four-session symposium organized at the *13th U.S. National Congress of Applied Mechanics (USNCAM),* University of Florida, Gainesville, Florida, June 21-26, 1998.

47. "Mechanics of Composite Materials and Structures", a symposium organized in honor of the 60th Birthday Celebration of Robert M. Jones at the *15th Annual Technical Conference of the American Society of Composites,* September 24-27, 2000, Texas A&M University, College Station, TX.

48. "Adaptive Structures and Material Systems", (with Diann Brei, University of Michigan) a symposium organized at the *IMECE'00,* November 5-10, 2000, Walt Disney World Dolphin, Orlando, Florida.

49. "Modeling and Design of Functionally Graded Materials (FGMs)" (with Glaucio Paulino, University of Illinois and Florin Bobaru, University of Nebraska), a symposium organized at the *IMECE'03,* November 16-21, 2003, Washington, DC.

50. "Mechanics of Composite Materials and Structures," a Mini-Symposium organized (with C. A. Mota Soares and A. Benjeddou) at *III European Conference on Computational Mechanics, Solids, Structures and Coupled Problems in Engineering*, 5-8 June 2006, LNEC, Lisbon, Portugal.

51. "Least-Squares Finite Element Models," a minisymposium organized (with Juan P. Pontaza and) at *Seventh World Congress on Computational Mechanics,* co-hosted by Northwestern University and University of California, Los Angeles, Century Plaza Hotel & Spa, Los Angeles, California, July 16-22, 2006.

52. "Nested Nonlinear Micromechanics and Structural Models," a minisymposium organized (with Anastasia Muliana and Rami Haj-Ali) at *Seventh World Congress on Computational Mechanics,* co-hosted by Northwestern University and University of California, Los Angeles, Century Plaza Hotel & Spa, Los Angeles, California, July 16-22, 2006.

SPECIAL REPORTS AND MANUSCRIPTS

TECHNICAL REPORTS AND MANUSCRIPTS

1. *A Mathematical Theory of Complementary-Dual Variational Principles and Mixed Finite Element Approximations of Linear Boundary Value Problems in Continuum Mechanics*, Ph.D. Dissertation, University of Alabama, also published as TICOM Report 73-7, Texas Institute for Computational Mechanics, Austin, 1973.

2. "Three-Dimensional Finite Element Analysis for High Velocity Impact" (with S. T. K. Chan and M. R. Brashears), Lockheed Missiles and Space Company, Huntsville, Alabama, November, 1974.

3. "Mixed and Hybrid Finite Element Analysis of Problems in Structural Mechanics", Research Report No. OU-AMNE-77-3 (Final Report to NSF), The University of Oklahoma, Norman, 1977.

4. "Lecture Notes on Variational Principles and Mixed Finite Element Methods", Report No. l6, Department of Structures, University of Calabria, Cosenza, Italy, pp. 147, 1978 (Notes of Lectures delivered in November, 1977); also published as Research Report OU-AMNE-78-1, University of Oklahoma, Norman, 1978.

5. "Numerical Modeling of Geological Structures by the Finite Element Method", Research Report No. OU-AMNE-79-2 (with J. S. Wickham), The University of Oklahoma, 1979 (final project report to a group of oil companies: ARCO, Chevron U.S.A., Exxon, and General Crude.)

6. "Penalty Finite Elements: Theory and Application", Research Report No. OU-AMNE-79-6, University of Oklahoma, Norman, 1979.

7. "Variational and Finite-Element Methods for Partial Differential Equations" (Notes of Lectures delivered at Tata Institute of Fundamental Research, Bangalore, India, July 14-25, 1979), Research Report No. *Computational Methods and Experimental Measurements*, G. A. Keramidas and C. A. Brebbia (eds.), Springer-Verlag, Berlin, pp. 737-748, June 30-July 2, 1982, Washington, D.C.

8. *The Finite Element Method: A Variational Approach (with Applications to Incompressible Flows*), Lecture Notes distributed to the participants of a short course on Advances in Computational Fluid Dynamics, The University of Tennessee Space Institute, Tullahoma, Tennessee, December 1980.

9. An Introduction to the Finite Element Method, Lecture Notes distributed to the participants of a short course on *Advances in Computational Fluid Dynamics*, The University of Tennessee Space Institute, Tullahoma, December 1982.

10. "A Refined Shear Deformation Theory for the Analysis of Laminated Plates", NASA Contractor Report 3955, January 1986, NASA Scientific and Technical Information Branch.

11. "A Higher-Order Theory for Geometrically Nonlinear Analysis of Composite Laminates", (with C. F. Liu) NASA Contractor Report 4056, Scientific and Technical Information Branch, March 1987.

12. "Finite Element Fundamentals II", and ``Review of the Equations of Fluid Mechanics and Heat Transfer", Chapters 2 and 9 of the notes for *Finite Element Calculation Methods and Their Application to Turbo Machinery Flows*, A short course given at the von Karman Institute for Fluid Dynamics, Rhode-Saint-Genese, Belgium, May 11-15, 1987.

13. *Mechanics of Laminated Composite Structures: Theory and Analysis*, Lecture notes prepared for a short course held at University of Tennessee Space Institute, Tullahoma, TN, Oct. 24-28, 1988.

14. *A Primer on the Finite Element Method*, Lecture Notes prepared for a short course held at 3M Company, Minneapolis, Minnesota, May 1989.

15. "Probabilistic Micromechanics for High-Temperature Composites", NASA Contractor Report 191150, September 1993, Prepared for NASA Lewis Research Center Under Contract NAG3-933.

RESEARCH REPORTS AT VIRGINIA TECH

1. "On Penalty Function Methods in the Finite-Element Analysis of Flow Problems: Part I", Report No. VPI-E-8l.5.

2. "Nonlinear Vibration of Layered Composite Plates Including Transverse Shear and Rotatory Inertia", Report No. VPI-E-8l.6.

3. "A Finite-Element Analysis of Bimodulus Composite Plate and Shells", Report No. VPI-E-8l.7.

4. "Natural Convection between Concentric (Horizontal) Circular Cylinders by a Penalty-Finite Element", (with A. Satake), Report No. VPI-E-8l.8.

5. "On-Behavior on Plates Laminated of Bimodulus Composite Materials", (with C. W. Bert), Report No. VPI-E-8l.ll.

6. "Analysis of Layered Composite Plates Accounting for Large Deflections and Transverse Shear Plains", Report No. VPI-E-8l.l2.

7. "Finite Element Modeling of Layered, Anisotropic Composite Plates and Shells: A Review of Recent Research", Report No. VPI-E-8l.l3.

8. "Finite Analysis of Steady Incompressible Flows in Three-Dimensions by a Penalty Function Formulation", Report No. VPI-E-8l.l4.

9. "On the Solutions to Forced Motions of Layered Composite Plates", Report No. VPI-E-8l.24.

10. "Transient Response of Laminated, Bimodular-Material, Composite Rectangular Plates", Report No. VPI-E-8l.28.

11. "Nonlinear Response of Bimodular-Material Plates", (with C. W. Chao) Report No. VPI-E-82.2.

12. "Geometrically Nonlinear Transient Analysis of Laminated Composite Plates", VPI-E-82.8.

13. "Three-Dimensional Finite-Element Analysis of Layered Composite Structures", (with W. C. Chao and N. S. Putcha), Report No. VPI-E-82.l9.

14. "Mechanics of Bimodular Composite Structures", (with C. W. Bert), Report No. VPI-E-82.20.

15. "On Delamination in Plates: A Unilateral-Contact Approach", (with A. Grimaldi), Report No. VPI-E-82.23.

16. "Bending of Laminated Anisotropic Shells by a Shear Deformable Finite Element", Report No. VPI-E-82.30.

17. "Geometrically Nonlinear Analysis of Layered Composite Plates by a 3-D Theory", (with T. Kuppusamy), Report No. VPI-E-82.3l.

18. "Geometrically Nonlinear Analysis of Layered Composite Plates and Shells", (with W. C. Chao), Report No. VPI-E-83.l0.

19. "A Simple Higher-Order Theory for Laminated Composite Plates", Report No. VPI-E-83.28.

20. "Three-Dimensional Analysis of Composite Plates with Material Nonlinearity", (with T. Kuppusamy, and A. Nanda, A.), Report No. VPI-E-83.34.

21. "Exact Finite Element Analysis of Laminated Shells", Report No. VPI-E-83.45.

22. "Nonlinear Analysis of Laminated, Bimodular, Composite Material Structures", Report No. VPI-E-83.47.

23. "Geometrically Nonlinear Transient Analysis of Laminated Doubly Curved Shells", (with K. Chandrashekara), Report No. VPI-E-84.2.

24. "Nonlinear Analysis of Layered Composite Plates and Shells", Report No. VPI-E-84.5.

25. "A Refined Mixed Shear Flexible Finite Element with Relaxed Continuity for the Analysis of Laminated Plates", (with N. S. Putcha), Report No. VPI-E-84.l3.

26. “Graduate Research Projects in Nonlinear $3-D$ Structural Analysis", Report No. VPI-E-84.36.

27. “Reduction of Free-Edge Stress Concentration", (with P. R. Heylinger), Report No. VPI-E-85.2.

28. “Finite Element Analysis of Adhesively Bonded Joints", (with S. Roy), Report No. VPI-E-85.18, August 1986.

29. “A Computational Model for Contact Stress Problems", (with P. R. Heyliger), Research Report No. VPI-E-86.2, January 1986.

30. “A Mixed Computational Algorithm Based on the Updated Lagrangian Description for Plane Elastic Contact Problems", (with P. R. Heyliger), Research Report No. VPI-E-86.17, August 1986.

31. “A Higher-Order Theory for Geometrically Nonlinear Analysis of Composite Laminates", Report No. VPI-E-86.21, October, 1986.

32. “A Mixed Computational Algorithm Based on the Updated Lagrangian Description for Plane Elastic Contact Problems", (with P. R. Heyliger) Research Report No. VPI-E-86.17, August 1986.

33. “A Higher-Order Theory for Geometrically Nonlinear Analysis of Composite Laminates", (with C. F. Liu) Research Report No. VPI-E-86.21, September 1986.

34. “Nonlinear Viscoelastic Analysis of Adhesively Bonded Joints", (with S. Roy), Research Report No. VPI-E-86.28.

35. “Geometric and Material Nonlinear Analysis of Laminated Composites Using the 3-D Degenerated Continuum Element", (with D. Rourk), Research Report No. VPI-E-86.30.

36. “Analytical Solutions of the Shear Deformation Theories Applied to Rectangular Laminated Composite Plates", (with A. Khdeir and L. Librescu), Research Report No. VPI-E-86.31.

37. “Design of Nonaxisymmetric Rocket Motor Cases", (with Robert M. Jones) Final Report to Atlantic Research Corporation, Gaineville, VA, June 1987.

38. “A Finite Element Analysis of Adhesively Bonded Composite Joints Including Geometric Nonlinearity, Nonlinear Viscoelasticity, Moisture Diffusion and Delayed Failure", (with S. Roy), Research Report No. VPI-E-87.21, August 1987.

39. “An Incremental Total Lagrangian Formulation for General Anisotropic Shell-Type Structures", (with C. L. Liao), Research Report No. VPI-E-87.22, CCMS-87-16, August 1987.

40. "A Finite Element Solver for 3-D Compressible Viscous Flows", (with K. C. Reddy and S. Nayani), The University of Tennessee Space Institute, Tullahoma, TN, Sept. 1987.

41. "Further Refinement and Applications of the Mixed Computational Algorithm for Plane Elastic Contact Problems", (with E. Yogeswaren) Research Report No. VPI-E-87.25, October 1987.

42. "Lecture Notes on Theory and Analysis of Laminated Composite Plates and Shells", Research Report No. VPI-E-88.10, May 1988.

43. "A Generalized Laminate Theory for the Analysis of Composite Laminates", Research Report No. VPI-E-88.17, June 1988.

44. "Friction Phenomenon in Contact Stress Problems", (with D. Post), Research Report No. VPI-E-88.27, September 1988.

45. "On a Moderate Rotation Theory of Laminated Anisotropic Shells: Theory and Finite Element Analysis", (with A. F. Palmerio), Research Report No. VPI-E-88.28, October 1988.

46. "Elastoplastic Analysis of Metal Matrix Composite Structures", (with R. T. Arenburg), Research Report No. VPI-E-88.01, February 1989.

47. "A Plate Bending Element Based on the Generalized Laminate Theory", (with E. J. Barbero and J. L. Teply), Research Report No. VPI-E-89.02, February 1989.

48. "Determination of Stress Intensity Factors of Notched Laminated Specimens", (with D. Turlier and D. H. Morris) Research Report No. CCMS-89-10, May 1989.

49. "A Study of Vibrations in Rotating Laminated Composite Plates Accounting for Shear Deformation and Rotatory Inertia", (with R. Bhumbla, J. Kosmatka), Research Report No. CCMS-89-15, August 1989.

50. "On the Numerical Behavior of Shear Deformable Plate Elements", (with R. C. Averill), Research Report No. CCMS-89-16, August 1989.

51. "On a Generalized Laminate Theory with Application to Bending, Vibration and Delamination Buckling in Composite Laminates", (with E. J. Barbero), Research Report No. CCMS-89-20, October 1989.

52. "Nonlinear Probabilistic Finite Element Models of Laminated Composite Shells", (with S. P. Engelstad), Research Report No. CCMS-91-02, Jan. 1991.

53. "Modeling of Thick Composites Using a Layer-Wise Laminate Theory", (with D. H. Robbins), Research Report No. CCMS-91-10, June 1991.

54. "Linear and Non-Linear Failure Analysis of Composite Laminates with Transverse Shear", (with Y. S. N. Reddy) Research Report No. CCMS-91-11, June 1991.

55. “A Layerwise Shell Theory with Applications to Buckling and Vibration of Cross-Ply Laminated Stiffened Circular Cylindrical Shells", Research Report No. CCMS-92-01, January 1992.

56. “Postbuckling of Laminated Circular Cylindrical Shells According to the Layerwise Shell Theory", Research Report No. CCMS-92-02, January 1992.

57. “Low-Velocity Impact Response of Laminated Plates", (with A. Nosier and R. K. Kapania) Research Report No. CCMS-92-20, August 1992.

58. “Layerwise Theory for Discretely Stiffened Laminated Cylindrical Shells", (with S. K. Kassegne) Research Report No. CCMS-93-02, January 1993.

POST-DOCTORAL FELLOWS & GRADUATE STUDENTS

POST-DOCTORAL/RESEARCH FELLOWS ADVISED

1. Elio Socco, University of Rome II, Rome, Italy (1985,1988).

2. Fraternali, University of Salermo, Salermo, Italy (1987).

3. Marco Savoia, University of Bologna,Bologna, Italy (1990, 1993).

4. Anil Tayal, University of Delhi, New Delhi, India (1990).

5. G.S. Reddy, National Defence Metallurgical Laboratory, Hyderabad, India (1990).

6. K. Krishna Kumar, Indian Institute of Technology, Madras (February-December, 1994).

7. A.F. Palmerio, Brazilina Air Force, Brazil (Spring 1994).

8. Emilio Larrodè, University of Zaragoza, Zaragoza, Spain (Spring 1997).

9. Kohji Suzuki, Department of Engineering, University of Tokto, Tokyo, Japan (June 1998-May 1999).

10. Joaquim Barbosa, Instituto de Engenharia Mecânica (Institute of Mechanical Engineering) Technical University of Lisbon, Lisbon, PORTUGAL (Spring 1999).

11. Zhen-Qiang Cheng, University of Science and Technology of China, China (March 1999- March 2004).

12. Siddhartha Mukherjee, Indian Institute of Technology, Madras, India (June 1999-August 2001).

13. Eugènio S. Gacão, Instituto de Engenharia Mecânica (Institute of Mechanical Engineering) Technical University of Lisbon, Lisbon, PORTUGAL (January - July 2000).

14. Elio Sacco, Department of Mechanics, Structures and Environment, University of Cassino, Cassino, Italy (July-August 2001).

15. Manas Chandra Ray, Department of Mechanical Engineering, Indian Institute of Technology, Kharagpur, INDIA (May - July 2002 and Sept. 2003-May 2004).

16. Juan P. Pontaza, Department of Mechanical Engineering, Texas A&M University (January 2003-2006).

17. Roman A. Arciniega, Department of Mechanical Engineering, Texas A&M University (January 2005-2006).

DOCTORAL STUDENTS ADVISED

1. "Fracture Prediction in Plane Elasto-Plastic Problems by the Finite Element Method", by Robert Belie, University of Oklahoma, Norman, OK, 1978.

2. "The Use of the Finite Element Method in Meteorological Modeling", by John D. Warburton, University of Oklahoma, Norman, OK, 1979.

3. "Numerical Analysis of Certain Constrained Optimization Problems in Nonlinear Mechanics", by Akio Satake, University of Oklahoma, Norman, OK, 1980.

4. "Geometrically Nonlinear Analysis of Layered Composite Plates and Shells", by Wei-Chang Chao, Virginia Polytechnic Institute and State University, Blacksburg, VA, 1983.

5. "A Mixed Shear Flexible Finite Element for Geometrically Nonlinear Analysis of Laminated Plates", by N. S. Putcha, Virginia Polytechnic Institute and State University, Blacksburg, VA, l984.

6. "Geometric and Material Nonlinear Analysis of Laminated Composite Plates and Shells", by K. Chandrashekhara, Virginia Polytechnic Institute and State University, Blacksburg, VA, 1985.

7. "Geometrically Nonlinear Analysis of Composite Laminates Using a Refined Shear Deformation Shell Theory," by C. F. Liu, Virginia Polytechnic Institute and State University, Blacksburg, VA, 1985.

8. "A Mixed Computational Algorithm Based on Updated Lagrangian Formulation for Plane Elastic Contact Problems", by P. R. Heyliger, Virginia Polytechnic Institute and State University, Blacksburg, VA, June 1986.

9. "Analytical Solutions for the Statics and Dynamics of Rectangular Laminated Composite Plates Using Shear Deformation Theories", A. A. Khdeir, Virginia Polytechnic Institute and State University, Blacksburg, VA, October 1986.

10. "Geometric and Material Nonlinear Effects in Elastic-Plastic and Failure Analyses of Anisotropic Laminated Structures", by D. Rourk, Virginia Polytechnic Institute and State University, Blacksburg, VA, December, 1986.

11. "An Incremental Total Lagrangian Formulation for General Shell-Type Structures", by C. L. Liao, Virginia Polytechnic Institute and State University, Blacksburg, June 1987.

12. "A Nonlinear Computational Model for the Strength and Failure of Composite Plates and Shells", by A. K. Pandey, Virginia Polytechnic Institute and State University, Blacksburg, June 1987.

13. "A Finite Element Analysis of Adhesively Bonded Joints Including Geometric Nonlinearity, Non-Linear Viscoelasticity, Moisture Diffusion and Failure", by S. Roy, Virginia Polytechnic Institute and State University, Blacksburg, November 1987.

14. "On a Moderate Rotation Theory for Anisotropic Shells", by Ariovaldo F. Palmerio, Virginia Polytechnic Institute and State University, Blacksburg, September 1988.

15. "Analysis of Metal Matrix Composite Structures Using a Micromechanical Constitutive Theory", by Robert T. Arenburg, Virginia Polytechnic Institute and State University, Blacksburg, Virginia, December 1988.

16. "Large Deformation Analysis of Laminated Composite Structures by a Continuum-Based Shell Element with Transverse Deformation", by Pey M. Wung, Virginia Polytechnic Institute and State University, Blacksburg, VA, June 1989.

17. "On a Generalized Laminate Theory with Application to Bending, Vibration, and Delamination Buckling in Composite Laminates", by Ever J. Barbero, Virginia Polytechnic Institute and State University, Blacksburg, VA, September 1989.

18. "A Study of Damped and Undamped Vibration and Stability Problems of Laminated Plates and Shells According to Various Shear Deformation Theories", by A. Nosier, Virginia Polytechnic Institute and State University, Blacksburg, VA, Dec. 1990.

19. "Numerical Simulation of Three-Dimensional Casting, Extrusion, and Forming Processes", by M. P. Reddy, Virginia Polytechnic Institute and State University, Blacksburg, VA, Dec. 1990.

20. "Nonlinear Probabilistic Finite Element Modelling of Composite Shells", by S. P. Engelstad, Virginia Polytechnic Institute and State University, Blacksburg, VA, Dec. 1990.

21. "Nonlinear Analysis of Laminated Composite Shells Using a Micromechanics-Based Progressive Damage Model", by Ronald C. Averill, Virginia Polytechnic Institute and State University, Blacksburg, VA, June 1992.

22. "Numerical Simulation of Damage and Progressive Failures in Composite Laminates Using the Layerwise Plate Theory", by Y. S. N. Reddy, Virginia Polytechnic Institute and State University, August 1992.

23. "Layerwise Theory for Discretely Stiffened Laminated Cylindrical Shells", by S. K. Kassegne, Virginia Polytechnic Institute and State University, December 1992.

24. "Modeling of Chemical Vapor Infiltration Process", by Ching Yi Tsai (co-advisor with S. Desu,) Virginia Polytechnic Institute and State University, June 1993.

25. "Adaptive Finite Element Simulation of Incompressible Viscous Flow", by Robert M. Fithen, Virginia Polytechnic Institute and State University, August 1993.

26. "Hierarchical Modeling of Laminated Composite Plates Using Variable Kinematic Finite Elements and Mesh Superposition", by Donald H. Robbins, Jr., Virginia Polytechnic Institute and State University, November 1993.

27. "Three-Dimensional Layerwise Modeling of Layered Media with Boundary Integral Equations", by F. T. Kokkinos, Virginia Polytechnic Institute and State University, December 1995.

28. "Modeling Laminates Using a Layerwise Finite Element with Enhanced Strains for Interlaminar Stress Recovery and Delamination Characteristics", by C. M. Dakshina Moorthy, Texas A&M University, April 1997.

29. "A High Performance Iterative Solution Procedure for Solving Problems in Structural Mechanics Using the Finite Element Method", by John A. Mitchell, Texas A&M University, May 1997.

30. "Growth and Coalescence of Bubbles During Late Stages of Polymer Foaming Processes", Hussein Allaboun, Texas A&M University, April 1998.

31. "On the Inelastic Behavior of Crystalline Solids", by Govind Rengarajan, September 1998.

32. "Study of Molecular Orientation and Phase Transition in Polymers During the Film Blowing Process", by Achuth Rao, Texas A&M University, September 1998.

33. "Modeling Inelasticity in Materials with Application to Superplasticity", by Grama N. Praveen, Texas A&M University, February 1999.

34. "A 3D Meshless Computational Procedure for Nonlinear Analysis of Structures", by Philip Schembri, Texas A&M University, September 2002.

35. ''Least-Squares Variational Principles and the Finite Element Method: Theory, Formulations, and Models for Solids and Fluid Mechanics" by Juan P. Pontaza, Texas A&M University, December 2003.

36. "Nonlinear Analysis of Composite Laminated Plate and Shell Structures with Smart Material Laminae" by Seung Joon Lee, Texas A&M University, January 2004.

37. "Modeling of Adaptive Structures" by J. Eugénio Semendo Garção (co-advised with Dr. C. A. Mota Soares of the Technical University of Lisbon) October 2004.

38. "Modeling and Simulation of Film Blowing Process" by Ravisankar S. Mayavaram, Texas A&M University, November 2004.

39. "Scratch Behavior of Polymers" by Goy Teck Lim, Texas A&M University, June 2005.

40. "On Tensor-Based Finite Elements Model for the Analysis of Shell Structures," by Roman A. Arciniega, Texas A&M University, October 2005.

41. "Modeling of Crack Tip High Inertia Zone in Dynamic Brittle Fracture," Ravi S. Karedla, Texas A&M University, May 2006.

42. "Analysis of Smart Functionally Graded Plates," Wilson Aliaga, Texas A&M University, May 2006.

43. "Least Squares Based Finite Element Formulations and Their Applications in Fluid Mechanics," Vivek Prabhakar, Texas A&M University, December 2006.

44. "On Simple and Accurate Finite Element Models for Nonlinear Bending Analysis of Beams and Plates," Yetzirah Urthaler, December 2006.

M.S. STUDENTS ADVISED

1. "Bending, Stability, and Vibration of Thin Rectangular Plates by Stationary Finite Element Models" by C. S. Tsay, University of Oklahoma, Norman, OK, 1977.

2. "Solution of Integral Equations by the Finite Element Method", by V. D. Murty, University of Oklahoma, Norman, OK, 1977.

3. "An Accurate Finite-Difference Analysis of Bending of Thin Rectangular Elastic Plates", by R. Gera, University of Oklahoma, Norman, OK, 1977.

4. "Large Deflection and Large Amplitude Free Vibrations of Beams and Circular Plates by the Finite Element Method", by I. R. Singh, University of Oklahoma, Norman, OK, 1978.

5. "Higher Order Conventional and Mixed Finite Elements Including Shear Deformation and Rotatory Inertia for Dynamic Analysis of Beams", F. Irani, University of Oklahoma, Norman, OK, 1978.

6. "A Penalty Finite-Element Model for the Numerical Solution of Free Convection Heat Transfer in Rectangular Enclosures", by D. R. Mamidi, University of Oklahoma, Norman, OK, 1979.

7. "Thermal Stress Analysis of Composite Plates and Shells by the Finite Element Method", by Y. S. Hsu, University of Oklahoma, Norman, OK, 1980.

8. "Large Deflection Bending and Vibrations of Thick Annular Plates with Variable Thickness", by C. L. Huang, University of Oklahoma, Norman, OK, 1980.

9. "Finite-Element Analysis of Laminated Composite (Ordinary and Bimodular-Material) Plates", by W. C. Chao, University of Oklahoma, Norman, OK, 1980.

10. "Large Deflection Transient Response of Layered Composite Plates", by J. D. Mook, Virginia Polytechnic Institute and State University, Blacksburg, VA, 1982.

11. "Exact and Finite-Element Analysis of Laminated Plates Using a Higher-Order Theory", by N. D. Phan, Virginia Polytechnic Institute and State University, Blacksburg, VA, l984.

12. "A Penalty-Finite Element Model for Axisymmetric Flows of Viscoelastic Fluids", by V. A. Padhye, Virginia Polytechnic Institute and State University, Blacksburg, VA, November 1986.

13. "Nonlinear Analysis of Free-Edge Effects in Symmetric Laminates Under Axial Loading", by Q. Gu, Virginia Polytechnic Institute and State University, February 1987.

14. "A Study of Vibrations in Rotating Laminated Composite Plates Accounting for Shear Deformation and Rotary Inertia", by Ravinder Bhumbla, Virginia Polytechnic Institute and State University, Blacksburg, VA, April 1989.

15. "Numerical Stress Intensity Factor Determination of Notched Laminated Specimens", by Didier Turlier, (co-chaired with Don H. Morris), Virginia Polytechnic Institute and State University, Blacksburg, VA, April 1989

16. "Dynamic Stability of Composite Laminated Plates", by Jayashree Moorthy, Virginia Polytechnic Institute and State University, Blacksburg, VA, June 1989.

17. "Finite Element Analysis of Coupled Heat Transfer and Fluid Flow of Non-Newtonian, Incompressible Fluids in Three-Dimensional Enclosures", by M. P. Reddy, Virginia Polytechnic Institute and State University, June 1989.

18. "On the Behavior of Shear Deformable Plate Elements", by R. C. Averill, Virginia Polytechnic Institute and State University, August 1989.

19. "The Effects of Embedded Piezoelectric Layers in Composite Cylinders and Applications", by John A. Mitchell, Virginia Polytechnic Institute and State University, July 1992.

20. "Stiffness Reduction and Stress Transfer in Composite Laminates with Transverse Matrix Cracks", by G. N. Praveen, Texas A&M University, September 1994.

21. "A Critical Evaluation of Various Higher-Order Plate Theories", by P. Bose, Virginia Polytechnic Institute and State University, December 1995.

22. "A Parametric Study of Thermomechanical Behavior of Functionally Gradient Materials", by C.-D. Chin, Texas A&M University, October 1996.

23. "Vibration Suppression of Laminated Composite Plates Using Embedded Smart Material Layers" by Sivasubramaniam Krishnan, Texas A&M University, July 2000.

24. "Geometric Nonlinear Analysis of Microbeams Under Electrostatic Loading'', by Nikhil C. Murgude, Texas A&M University, December 2001.

25. "Buckling and Vibration of Orthotropic Plates with an Internal Hinge'', by Praveen Gupta, Texas A&M University, December 2001.

26. "Analysis of Three-Dimensional Frames Using Shear-Locking-Free Beam Elements Based on the Third-Order Shear Deformation Theory'', by Raghavendra K. Shenoy, Texas A&M University, December 2001.

27. "The Formulation and Computer Implementation of Element-Free Galerkin Method for Euler-Bernoulli Beam Theory'', by Nauman. M. Sheikh, Texas A&M University, December 2001.

28. "An Implementation of the Extended Finite Element Method (XFEM) for a Linear Elastic Domain with Fracture," Rahul Joshi, (co-advised by T. Strouboulis), Texas A&M University, May 2004.

29. "Machine Augmented Composite Materials for Damping Purposes," David Matthew McCutcheon, (co-advised by Terry Creasy), Texas A&M University, December 2004.

30. "Evaluation of Stress in BMI-Carbon Fiber Laminate to Determine the Onset of Microcracking," Brent D. Pickle (co-advised by Roger Morgan), December 2004.

31. "Hingeless Flow Control over an Airfoil via Distributed Actuation," Anmol Agrawal, (co-advised by Othon Rediniotis), Texas A&M University, August 2005.

32. "Mathematical Modeling of Evaporative Cooling of Moisture Bearing Epoxy Composite Plates," Gregory P. Payette, (co-advised by Roger Morgan), Texas A&M University, March 2006.

33. "Dynamics Analysis of Fluid Conveying Pipes" Ryan Petrus, Texas A&M University, May 2006.

SPECIAL STUDENTS ADVISED

1. "Finite Element Analysis Validation Techniques", by Steven Ulrick, Jr. (MS No-Thesis Option Project Report), Texas A&M University, College Station, April 1995.

2. "Construction and Finite Element Analysis of Laminated Plate Structures", by Robert Pandorf (Konstruktiver Entwurf), Texas A&M University, December 1995.

3. "Finite Element Analysis of Functionally Graded Beams Using the Third Order Shear Deformation Theory," Payal Pawliwal, (MS Non-Thesis Option Project Report), Texas A&M University, College Station, May 2004.

4. "Analysis of Single-Walled Carbon Nanotubes Using Structural Mechanics Approach," Ruchir Patwa, (MS Non-Thesis Option Project Report), Texas A&M University, College Station, May 2004.

5. "Exact Solutions for Bucking of Timoshenko Columns" (MS Non-Thesis Option Project Report) by Karthik Aruru, Texas A\&M University, College Station, October 2004.

GRADUATE STUDENTS CURRENTLY ADVISED

M.S. Theses in Progress:

1. Britt Pratt: "Meshless Least-squares finite element models with applications to heat transfer and solid mechanics," December 2006.
2. Dhatri Gaddamanugu: "Non-local theories of beam and plates"
3. Feifei Chang: "Carbon-nanotubes for heat transfer enhancements."

Dissertations in Progress:

1. Vinu U. Unnikrishnan: "Continuum-Atomistic Coupled Multiscale Modeling Of Carbon Nanotube Reinforced Polymer Nanocomposites", Spring 2006.

2. Ginu U. Unnikrishnan: "Multiscale Modeling of Biological Cells and Soft Tissues", December 2007.

3. Wook-jin Ma: "Multiscale Damage Analysis of Composite Laminates Under Bending," December 2007.

4. Rakesh Ranjan: "Multiphase flows with applications to biomass," December 2008.

PROFESSIONAL SERVICE ACTIVITIES

PROFESSIONAL AFFLIATIONS

Aeronautical Society of India (**Fellow**)
American Academy of Mechanics (**Fellow**)
American Association for the Advancement of Science
American Institute of Aeronautics and Astronautics (**Fellow**)
American Society of Composites (**Fellow**)
American Society of Civil Engineers (**Fellow**)
American Society of Mechanical Engineers (**Fellow**)
American Society for Engineering Education
International Association for Computational Mechanics (**Fellow**)
International Association for Analog Computation (AICA)
National Society of Professional Engineers
New York Academy of Science
Phi Kappa Phi
Pi Tau Sigma
Sigma Xi
Society of Automotive Engineers
Society of Industrial and Applied Mathematics
The Adhesion Society
Society of Engineering Science
U.S. Association for Computational Mechanics (Founding Member and **Fellow**)
Registered Professional Engineer, State of Oklahoma

OFFICES HELD

Local (State and Campus)

Director, *Computational Sciences and Engineering Simulations Graduate Program*, Texas A & M University, 2000-2004.

Associate Director, *Institute for Scientific Computation*, Texas A & M University, 1999-2004.

Research Standards Officer, Texas A & M University, 1999-2005 (6 year term).

Member (2002-2005) and Chair (2003-2004) of Tenure and Promotion Committee, Department of Mechanical Engineering, Texas A & M University.

Member, Search Advisory Committee for Head of Mechanical Engineering, Texas A & M University, 2003-2004.

Member, Faculty Recruiting Committee, Department of Mechanical Engineering, Texas A & M University, 2003-2004.

Member, Selection Committee for the Texas A&M University Bush Excellence Award for Faculty in International Research, Texas A & M University, 2003-2004.

Member, Search Advisory Committee for Dean of Engineering, Texas A & M University, 2001-2002.

Member, Committee on the Selection of *Endowed Chair Position* Holders, Dept. of Civil Engineering, Texas A & M University, 2000-2001.

Member of *Advisory Committee*, Dept. of Mechanical Engineering, Texas A & M University, 2000-2003.

Member of *Strategic Planning Committee*, Dept. of Mechanical Engineering, Texas A & M University, 2002-2003.

Member, Committee on the Selection of *Marcus C. Easterling Chair* Holder, Dept. of Mechanical Engineering, Texas A & M University, 1999-2000.

Member, Committee on the Selection of *Named Professorship* Holders, Dept. of Civil Engineering, Texas A & M University, 1993-1994.

Member, Committee on the Selection of *Forsyth Chair* Holder, Dept. of Mechanical Engineering, Texas A & M University, 1993-1994.

Member, Promotion and Tenure Committee, College of Engineering, Texas A & M University, 1993-1995; Chair of the Committee: 1995 and 1996.

Chair, Committee on the Selection of *Kotzebue and Wyatt Professorships*, Dept. of Mechanical Engineering, Texas A & M University, 1993-1994.

Member, Graduate Committee, Dept. of Mechanical Engineering, Texas A & M University, 1993-present.

Member, Computer Committee, Dept. of Mechanical Engineering, Texas A & M University, 1993-1995.

Member, Promotion and Tenure Committee, Dept. of Mechanical Engineering, Texas A & M University, 1993-1997.

Member, Departmental Research Executive Committee, Texas A & M University, 1992-1994.

Member, College Alumni Honor Awards Committee, Texas A & M University, 1993-1994.

Member, University Planning Coordinating Committee, Virginia Polytechnic Institute, 1990-

1991.

Co-Chairman, IUTAM Symposium on Local Mechanics Concepts for Composite Material Systems, Oct. 27-31, 1991, Virginia Polytechnic Institute and State University, Blacksburg, VA 24061 (with K. L. Reifsnider).

Member of the Organizing Committee of the Fourth Technical Conference on Composite Materials, Virginia Polytechnic Institute and State University, Blacksburg, October 3-6, 1989.

Member, Organizing Committee, ASCE/EMD Speciality Conference, Virginia Polytechnic Institute and State University, May 23-25, 1988.

Organizer and host, The ARO Workshop on Constitutive Models, Virginia Polytechnic Institute and State University, Blacksburg, VA, March 24-26, 1986.

Chairman, Computational Methods Technical Interest Group, Virginia Polytechnic Institute and State University, 1981-l985.

Member, Alumni Research Award Committee, Virginia Polytechnic Institute and State University, 1985-1990.

Executive Member, Engineering Faculty Organization, Virginia Polytechnic Institute, 1981-1982.

Member, Promotions and Tenure Committee, Department of Engineering Science and Mechanics, Virginia Polytechnic Institute, 1981-1984 and 1987-1990; Chairman, 1989-1990.

Member, Faculty Recruiting Committee, Department of Engineering Science and Mechanics, Virginia Polytechnic Institute and State University, 1981-1982.

Member, Graduate Committee, Department of Engineering Science and Mechanics, Virginia Polytechnic Institute and State University, 1982-1992.

Member, Long Range Goals Committee, Department of Engineering Science and Mechanics, Virginia Polytechnic Institute, 1981-1992.

Member, Executive Cabinet, Department of Engineering Science and Mechanics, Virginia Polytechnic Institute, 1987-1992.

Member, Local Arrangements Committee, IUTAM Symposium on Mechanics of Composite Materials, Virginia Polytechnic Institute and State University, Blacksburg, August 16-19, 1982.

Chairman of the Proceedings and Member of the Organizing Committee, the 21st Annual Meeting of the Society of Engineering Science, Virginia Polytechnic Institute, Blacksburg, Oct. 15-17, l984.

Chairman (1979-80) and Vice-Chairman (1978-79), Engineering Sciences Section, Oklahoma

Academy of Science.

Vice-Chairman, Membership, Central Oklahoma Section of ASME, 1976-77; Mem., Exec. Comm., 1976-80.

Member, Executive Committee (Committee A), School of Aerospace, Mechanical and Nuclear Engineering University of Oklahoma, 1978-1980.

Faculty Advisor, Student Section of ASME, University of Oklahoma, 1976-1979.

National and International

- Secretary of Fellows, American Academy of Mechanics (1993-1998)
- Board of Directors, Society of Engineering Science (1991-1993)
- Executive Committee of the International Association for Computational Mechanics (IACM), Joint Secretary and Co-Editor (1991-93) and Editor (1993-present) of *IACM Bulletin*.
- The Executive Committee of the U.S. Association for Computational Mechanics (USACM), member, 1988-present; Secretary (1991-1992); Treasurer (1992-1994); Vice-President (1994-1996); and President (1996-1998); Editor of *USACM Newsletter* (1988-1993).
- ASME Committee on Computing in Applied Mechanics, Applied Mechanics Division, American Society of Mechanical Engineers, member (1981-1993); Vice—Chairman (1993-1995); Chairman (1995-1997).
- Computational Methods Committee, Society of Engineering Science, member (1977-1983), Chairman (1983-1985)
- ASME Committee on Composite Materials, American Society of Mechanical Engineers, (member) 1982-present.
- Mathematical Methods Committee, Engineering Mechanics Division, ASCE, (member) 1983-1987.
- Elasticity Committee, ASCE, (member) 1985-1988.
- Computational Mechanics Committee, ASCE, Member (1990-1992), Chairman (1992-1994).
- Stability Committee, ASCE, Member (1992-present).
- Executive Committee of the Engineering Mechanics Division, ASCE, Member (1992-1996); Chairman (1995-1996).
- Advisory Board of the Engineering Mechanics Division, ASCE, Member (1996-2002); Chairman (1997-1999).
- Structures Technical Committee of AIAA, Member (1995-2000).

REVIEWER

Journals

Acta Mechanica
AIAA Journal
Applied Mechanics Reviews, ASME

Asian Journal of Civil Engineering
Commun. in Appl. Numerical Methods
Composite Structures
Composites Science and Technology, An International Journal
Computational Mechanics: An International Journal
Computers & Structures
Computers & Fluids
Computer Methods in Appl. Mech. and Engineering
Computing Systems in Engineering, An International Journal
Engineering Computations
Engineering Fracture Mechanics
Engineering Structures
Experimental Mechanics, An International Journal
European Journal of Mechanics: A. Solids
Finite Elements in Analysis and Design
Foundations of Physics
Indian Journal of Pure & Applied Mathematics
Indian National Science Academy Journals
Int. J. Computational Engineering Science
Int. J. Engineering Analysis and Design
Int. J. Engineering Science
Int. J. Mechanical Sciences
Int. J. Numer. Methods in Engrg.
Int. J. Numer. Meth. Fluids
Int. J. Numer. Analytical Meth. in Geomechanics
Int. J. Plasticity
Int. J. Solids and Structures
Int. J. Structural Stability and Dynamics
Iranian Journal of Science and Technology
J. Adhesion
J. Adhesion Science and Technology
J. Aeronautical Society of India
J. Aerospace Engineering of ASCE
J. Aircraft
J. the Acoustical Society of America
Applied Mechanics, ASME
J. Composite Materials
J. Composites Technology and Research
J. Computational Physics
J. Computational Structures Technology
J. Dynamic Systems, Measurement and Control
J. Elasticity
J. Engineering Mechanics, ASCE
J. Heat Transfer, ASME
J. Intelligent Material Systems and Structures
J. Mathematical and Physical Sciences
J. the Mechanics and Physics of Solids

J. Non-Linear Mechanics
J. Numerical Heat Transfer
J. Optimization Theory and Applications
J. Plasticity
J. Pressure Vessel Technology, ASME
J. Sound and Vibration
J. Structural Mechanics
J. Thermal Stresses
J. Thermophysics and Heat Transfer
J. University of Kuwait (Science)
J. of Vibration, Acoustics, Stress and Reliability, ASME
Mathematics & Mechanics of Solids
Meccanica
Mechanics of Composite Materials and Structures
Mechanics Research Communications
Mechanism and Machine Theory
Numerical Methods for Partial Differential Equations, An Int. Journal
Proceedings of the Indian Academy of Sciences
Q. Applied Mathematics
Q. J. Mechanics and Applied Mathematics
Sadhana (Indian Academy of Sciences)
Shock and Vibration Bulletin
SIAM Journal of Scientific and Statistical Computing
SIAM Review
Smart Materials & Structures
Structural Engineering and Mechanics
Tectonophysics
ZAMM

Other Organizations

Addison Wesley Publishing Company
Advances in Water Resources
AIAA Book Reviews
Applied Mechanics Reviews
Army Research Office
ASME Press
ASTM Special Technical Publication (STP)
Australian Research Council
CRC Press
Energy Research Center, Morgantwon, WVA
John-Wiley & Sons, Inc.
Kluwer Academic Publishers
Kuwait Foundation for the Advancement of Sciences
Longman Higher Education & Reference
McGraw-Hill Book Company

NATO Collaborative Research Grants Proposals
National Research Council, USA
National Research Council, Canada
National Research Council, Australia
National Science Foundation (reviewer and member of review panels)
Natural Sciences and Engineering Research Council of Canada
Society of Engineering Science Annual Meetings
South Eastern Conference in Theoretical and Applied Mechanics
Springer-Verlag
Symposium on Advances and Trends in Structures and Dynamics (GWU)
Vibration and Noise Conference, ASME

PUBLISHED REVIEWS OF BOOKS

- *Solid Mechanics: A Variational Approach*} by C. L. Dym and I. H. Shames,McGraw-Hill, New York, 1973 for *Mechanical Engineering*, 1978.

- *Hamilton's Principle in Continuum Mechanics*} by A. Bedford, Pitman, Boston, 1985, xiv+106 pp., ISBN 0-273-08730-4, Research Notes in Mathematics, Vol. 139, for *SIAM\ Review*, Vol. 31(3), pp. 512-513, 1989.

- *Introduction to Analytical Dynamics*} by N.M.J. Woodhouse, Oxford Scientific Publishers, Clarendon Press, London, 1987, for *Applied Mechanics Reviews*, Vol. 44, No. 10, October 1991.

- *Dynamics of Multibody Systems*} by R. E. Roberson and R. Schwertassek, Springer-Verlag, Berlin, 1988, for *Applied Mechanics Reviews* (ASME), 1988.

- *Computational Mechanics of Probabilistic and Reliability Analysis*} by Wing Kam Liu and Ted Belytschko (eds.), ELME\ Press International Lausanne, Switzerland, 1989, for *Int. J. Computer Meth. Appl. Mech. Engng*.

- *Finite Elements for Solids, Fluids, and Optimization*} by G. A. Mohr, published by Oxford University Press Inc., New York, 1992, *Applied Mechanics Reviews*.

- *Mechanics of Composite Structures*} by V. V. Vasiliev, published by Taylor & Francis, Washington, D. C. 1993, *AIAA Journal.*

- *Finite Element Procedures*} by K.-J. Bathe, published by Prentice Hall, Englewood Cliffs, New Jersey, 1996, *Applied Mechanics Reviews*.

- *Stress Analysis of Fiber Reinforced Composite Materials*} by M. W. Hyer, published by WCB/McGraw-Hill, Boston, 1998, 627 pp. ISBN 0-07-016700-1, *AIAA Journal.*

- *Vibration of Mindlin Plates: Programming the p-Version Ritz Method* by K.-M. Liew, *et al*., published by Elsevier, Oxford, U.K., 1998, 202 pp. ISBN 0-08-043341-3 *Applied Mechanics Reviews*, Vol. 52, No. 9, B93, September 1999.

- *Least-Squares Finite Element Method: Theory and Applications in Computational Fluid Dynamics and Electromagnetics*} by Bo-nan Jiang, published by Springer-Verlag, Berlin, U.K., 1998, 418 pp. ISBN 3-540-63934-9 *Applied Mechanics Reviews*, Vol. 53, No. 1, B1, January 2000.

CONSULTANT SERVICES

Aerojet (Strategic Propulsion Co.), Sacramento, CA
Alcoa Technical Laboratory, Alcoa Center, PA
Appl Engineering Company, Norman, OK
Atlantic Research Corporation, Gainesville, VA
Autoclave Engineers, Inc., Erie, PA
Battelle Laboratories, Research Triangle Park, NC
Bell Helicopter Textron Inc., Ft. Worth, TX
Computational Mechanics Company, Austin, TX
Concept Analysis, Plymouth, MI
Engineering Mechanics Research Corporation, Troy, MI
General Dynamics, Space Systems Div., San Diego, CA
Hartford Boiler and Insurance Company, Hartford, CT.
Humana Medical City Dallas, Dallas, TX
Lockheed Aeronautical Systems Company, Marietta, GA
Omega Engineering Consultants, Coral Springs, FL.
Owens/Corning Fiberglass, Granville, OH
RADIAN Corporation, Austin, Texas
Swanson Analysis Systems, Houston, PA
Technalysis Inc., Indianapolis, IN
Texas Tech University, Health Sciences Center, Lubbock, TX
The Hartford Steam Boiler Inspection and Insurance Co., Hartford, CT
University of Tennessee Space Institute, Tullahoma, TN
U.S. Army & Missile Command, Huntsville, AL
U.S. Tank Automotive Command (TACOM), Warren, MI

SHORTCOURSES TAUGHT

1. "Advances in Computational Fluid Dynamics", The University of Tennessee Space Institute, Tullahoma, TN, December 1982 (with K. C. Reddy).

2. "Finite Element Methods in Fluid Mechanics", Purdue University at Indianapolis, March 15-18, 1983 (with A. Ecer and H. Akay).

3. "Finite Element Methods in Fluid Mechanics and Heat Transfer", Purdue University at Indianapolis, March 12-16, 1984 (with A. Ecer and H. Akay).

4. "Finite Element Methods in Fluid Mechanics and Heat Transfer", Purdue University at Indianapolis, March 11-15, 1985 (with A. Ecer and H. Akay).

5. "Finite Element Methods in Fluid Mechanics and Heat Transfer", Purdue University at Indianapolis, March 10-14, 1986 (with A. Ecer and H. Akay).

6. "Finite Element Methods in Fluid Mechanics and Heat Transfer", Purdue University at Indianapolis, March 9-13, 1987 (with A. Ecer and H. Akay).

7. "An Introduction to the Finite Element Method", NASA Marshall Space Center, Huntsville, Alabama, June 1987 (with K. C. Reddy).

8. "Finite Element Calculation Methods and Their Application to Turbomachinery Flows", von Kárman Institute for Fluid Dynamics, Belgium, May 11-15, 1987 (with W. G. Habashi).

9. "Analysis of Laminated Composite Structures", The University of Tennessee Space Institute, Tullahoma, TN, October 24-28, 1988.

10. "Finite Element Method in Computational Fluid Dynamics and Heat Transfer", Purdue University at Indianapolis, March 7-11, 1988 (with A. Ecer and H. Akay).

11. "Introduction to the Finite Element Method", (EG-5520), 3M Company, Minneapolis, MN, May 8-10, 1989.

12. "Advanced Concepts in the Finite Element Method", (EG-5521) 3M Company, St. Paul, MN, May 11-12, 1989.

13. "Finite Element Method in Computational Fluid Dynamics and Heat Transfer", Purdue University at Indianapolis, May 15-19, 1989 (with A. Ecer and H. Akay).

14. "Introduction to the Finite Element Method", 3M Company, St. Paul, MN, Nov. 20-22, 1989.

15. "The Finite Element Method in Engineering Science", Brakes India Ltd., Padi, Madras, India, December 18-21, 1989.

16. "Introduction to the Finite Element Method", 3M Company, St. Paul, MN, March 12-15, 1990.

17. "Finite Element Method in Computational Fluid Dynamics and Heat Transfer", Purdue University at Indianapolis, May 6-11, 1990.

18. "An Advanced Course on the Finite Element Method", Michelin Americas Research and Development Corporation, Greenville, SC, Sept. 17-21, 1990.

19. "The Finite Element Method in Engineering Science", Holiday Inn, Cleveland, OH, July 15-19, 1991.

20. "An Introduction to the Finite Element Method", U. S. Army Waterways Engineering Experiment Station, Vicksburgh, Mississippi, May 11-15, 1992.

21. "The Finite Element Method in Computational Fluid Mechanics and Heat Transfer", Concordia University, Montreal, Canada, May 18-22, 1992 (with W. G. Habashi).

22. "The Finite Element Method in Engineering Science", Indian Institute of Science, Bangalore, India, November 20-25, 1992.

23. "The Finite Element Method in Computational Fluid Mechanics and Heat Transfer", Singer Island, Florida, October 11-15, 1993.

24. "The Finite Element Method in Computational Fluid Mechanics and Heat Transfer", Purdue University at Indianapolis, September 11-16, 1994 (with A. Ecer and H. Akay).

25. "Analysis of Laminated Composite Plates", NATO Sponsored short course presented at Middle East technical University, Ankara, Turkey, December 3-9, 1994.

26. "Finite Element Modeling of Smart Structures", at *1995 North American Conference on Smart Structures and Materials*, San Diego, February 25, 1995 (with Vasu V. Varadan).

27. "Mechanics of Composite Materials and Structures", Defense Science Organization, Ministry of Defense, Singapore, May 6-9, 1996.

28. "Refined Theories and Finite Element Models of Laminated Plates", Centre for Computational Mechanics, National University of Singapore, Singapore, December 6, 1996.

29. "Applications of the Finite Element Techniques in Fluid Mechanics and Heat Transfer", Bhabha Atomic Research Centre, Trombay, Mumbai, India, Dec. 16-20, 1996.

30. "Mechanics of Laminated Composite Plates: Theory and Analysis", University of Queensland, Brisbane, Australia, June 17-18, 1997.

31. "Theory and Analysis of Laminated Composite Plates", University Putra Malaysia (UPM), Serdang, Selangor, Malaysia, June 21, 1997.

32. "The Finite Element Method in Engineering Science" National Aerospace Laboratory, Bangalore, India, July 22-25, 1998.

33. "Mechanics of Composite Materials and Structures", Defence Evaluation and Research Agency (DERA), Rosyth Royal Dockyard, Dunfermline, Fife KY11 2XR, Scotland, U.K., September 6-11, 1998.

34. "Nonlinear Finite Element Analysis of Structural Dynamics", Defence Evaluation and Research Agency (DERA), Rosyth Royal Dockyard, Dunfermline, Fife KY11 2XR, Scotland, U.K., August 22-25, 1999.

35. ``Engineering Design & Practice Using FEM," The City University of Hong Kong, Hong Kong, June 14-19, 2001.

36. ``Engineering Design & Practice Using FEM," The City University of Hong Kong, Hong Kong, June 14-19, 2001.

37. ``Mechanics of Composite Materials and Structures," *US-Brazil Workshop on Advanced Materials*, Rio de Janeiro, Brazil, June 9-10, 2004.

38. ``On *k*-Version of the Finite Element Method," Short course presented at the Wright-Patterson Air Force Base, OH, August 13-15, 2004.

39. "Analysis of Composite Materials and Structures," Short course presented at the National University of Singapore, August 24-25, 2004.

40. "Structural Analysis and Failure Assessment of Composite Materials," Short course presented (with R. Talreja and Kristofer Gamstedt) at the Royal Institute of Technology, (KTH), Stockholm, Sweden, October 5-8, 2004.

41. "Mechanics of Laminated Composite Materials and Structures," Short course presented at the University Putra Malaysia (UPM), Kaulalampur, Malaysia, December 20, 2004.

42. "Linear and Nonlinear Finite Element Analysis," Short Course presented at the *US-Africa Workshop on Mechanics and Materials,* University of Cape Town, South Africa, January 28, 2005.

43. "An Introduction to the Finite Element and Finite Difference Methods with Applications to Heat Transfer and Fluid Flow," National Geographical Research Institute (NGRI), Hyderabad, India, May 16-19, 2005.

44. "Least-squares Finite Element Formulations for Viscous Incompressible and Compressible Flows," *Workshop on Computational Methods in Structural Mechanics and Fluid Flows* (COSMECFLOWS), Osmania University, Hyderabad, India, December 5, 2005.

45. "Mechanical Engineering Design," a course in Mechanical Engineering at University of Calabria, Italy, March 13-17, 2006.

SPONSORED RESEARCH PROJECTS

The amounts indicated do not include the cost-sharing by the receiving institution; where listed as a co-principal investigator, the amounts are equally divided between the two co-principal investigators unless stated otherwise.

1. "Mixed and Hybrid Finite Element Analysis of Problems in Structural Mechanics", *NSF Research Initiation Grant*, National Science Foundation (ENG75-10265), April, 1975-March, 1977, $17,000.

2. "Installation of NONSAP Computer Program on IBM *370/158* at the University of Oklahoma", March, 1976-June, 1976, $4,000.

3. "Feasibility of the Finite Element Method as a Tool for Petroleum Exploration", (Co-principal investigator), Exxon, Chevron, General Crude and Atlantic Richfield, June, 1976-Jan., 1978, $67,500.

4. "Computer Simulation of Folding in the Blueridge, Central Appalachians", (Co-principal investigator), NSF (EAR77-20873), March, 1978-August, 1979, $39,600.

5. "Prediction of Fracture Porosity in Rocks", (Co-principal investigator), Energy Resources Center, University of Oklahoma, Oct., 1978-June, 1979, $18,400.

6. "Accurate Representation of the Earth's Orography in Numerical Forecast Models by the Finite Element Method", (Co-principal investigator), NSF (ATM77-23111), Jan., 1978-June, 1980, $l66,300.

7. "Extraction of Heat from Hot Dry Rock", Energy Resources Center, University of Oklahoma, Jan., 1980-July, 1980, $5,857.

8. "Nonlinear Analysis of Laminated, Bimodulus Composite-Material Structures", (Co-principal investigator), ONR (NOOO14-78-C-0647) $80,000, Sept., 1978-Aug., 1980).

9. "Nonlinear Analysis of Laminated, Bimodulus, Composite-Material Structures", ONR (NOOO14-78-C-0647); Sept. 1980-Aug., 1983, $72,735.

10. "Nonlinear Transient Analysis of Layered Composite Plates and Shells, Phase I: Plates", AFOSR (AFOSR-81-0142), April 1981-June, 1982, $48,288.

11. "Graduate Research Projects in Nonlinear and 3-D Structural Analysis", NASA-Lewis (NAG 3-208), August, 198l-August, 1984, $89,933.

12. "Nonlinear Transient Analysis of Layered Composite Plates and Shells, Phase II: Shells", AFOSR, June, 1982 to December, 1983, $58,653.

13. "A Refined Nonlinear Analysis of Laminated Composite Plates and Shells", NASA Langley, March l984-June l985, $93,000.

14. "Analysis of Stresses in Adhesive Joints by the Finite Element Method", ONR (Materials Division), June l984-Sept. 30, l985, $76,000.

15. "Refined Nonlinear Analysis of Laminated Composite Plates and Shells", Army Research Office (Mathematics Division), March l5, l985-June l5, l987, $83,4l4.

16. "Travel Grant to present a paper at the Sixth International Conference on Fracture, New Delhi, India, Dec. 4-l0, l984, NSF, $2,300.

17. "Development of Processing Methods for Self-Reinforcing and Other Composite Thermoplastics", CIT, Virginia Tech., (with D. G. Baird), l5 October, l984-l5 April, l986, $l0,000.

18. "Frictional Phenomena in Contact Stress Problems", (Co-principal investigator with Daniel Post), ONR (Mechanics Division), July 15, l984-March 14, l988; $3l3,277, personal share: $206,119.

19. "Closure and Plasticity of Small Cracks Under Cyclic Loading", (with Norman Dowling), USAF/ASD, July 1, 1985-December 31, 1989, $135,888.

20. "Analysis of Stresses in Adhesive Joints by the Finite Element Method", ONR (Materials Division), Oct. 1, 1985-Sept. 30, 1988, $219,510.

21. "Advanced Study Institute on the Finite Element Analysis for Engineering Design", NSF (International Programs), April 1, 1987-Sept. 30, 1989, $27,000.

22. "Probabilistic Micromechanics for High Temperature Composites", NASA Lewis Research Center, Oct. 1, 1988-March 30, 1992, $227,098.

23. "Modeling of Complex Flows with Heat Transfer", NSF (International Programs), Jan. 1, 1989-Dec. 31, 1991, ($28,908 to JNR plus Indian Institute of Technology, Madras $124,203 to IIT-Madras).

24. "A Study of Failures and Delamination Buckling and Growth in Composite Laminates", NASA Langley Research Center, October 1, 1989-Dec. 31, 1991, $116,210.

25. "Thermo-Mechanical Analysis of Composite Shells Using a Small Strain and Moderate Rotation Theory", NASA Head Quarters, July 1, 1989-June 30, 1992, $62,000.

26. "Residual Strength of Delaminated Composite Panels Under Compressive Loads", NSF (International Programs), Oct. 1, 1989-Sept. 30, 1992 ($28,133 to JNR + $76,114 to Indian Institute of Science, Bangalore).

27. "Indo-U.S. Workshop on Composites for Aerospace Applications", NSF (International Programs, Travel Grant, Nov. 1, 1989-October 31, 1990, $32,000.

28. "Design Oriented Analysis of Geodesically-Stiffened Composite Cylindrical Shells Accounting for Local Effects", (Co-principal Investigator), NASA Langley Research Center, Personal Share: Jan. 16, 1990-December 1, 1992, $56,084.

29. "Local Mechanics Concepts for Composite Material Systems", (Co-principal investigator with K. L. Reifsnider), NSF, Nov. 15, 1990-April 30, 1992, , $11,695.

30. "Global-Local Finite Element Analysis of Geodesically Stiffened Cylindrical Shells", NASA Head Quarters, Sept. 19, 1990-January 1, 1993, $44,000.

31. "Study of Wave Propagation and Dynamic Response of Laminated Composite Structures", (Co-principal investigator with R. Kapania at VPI), Army Research Office, June 1, 1990-November 30, 1993, $240,206.

32. "Dynamic Behavior of Inflatable Dams", (Co-principal investigator with R. H. Plaut and D. Walker), NSF, Dec. 1, 1990-May 31, 1993; $ 134,253, personal share: $42,691.

33. "Development of a Modular Finite Element Analysis Computer Program for Geotechnical Engineering", (Co-principal Investigator with J. M. Duncan), U. S. Army Corps of Engineers, July 15, 1992-November 30, 1993, $62,764.

34. "Residual strength of Delaminated Composite Panels Under Compressive Loads", NSF (International Programs), August 1, 1992-July 31, 1994, Cooperative Science Program with the Indian Institute of Science (India), $44,230.

35. "Hierarchical Global-Local Finite Element Modeling of Stress Wave Propagation Using Mesh Superposition", U. S. Army Corps of Engineers, January 1, 1993-December 31, 1994, $30,135.

36. "Residual Strength of Delaminated Composite Panels Under Compressive Loads", National Science Foundation (International Programs), October 1, 1993-March 31, 1995, $21,840.

37. "Mechanics of Composite Materials and Structures", Sandia National Laboratory, June 1, 1993-September 30, 1995, $64,000.

38. "Nonlinear Progressive Failure Analysis of Laminated Composite Plates", University of Texas at San Antonio, September 1, 1995-August 31, 1996, $38,620.

39. "Constitutive Modeling Finite Element Simulation of Polymer Film Blowing", (with Lynden Archer) Interdisciplinary Research Initiative, TAMU, FY95-96, $24,935.

40. "Thermomechanical Behavior of Functionally Graded Materials", Air Force Office of Scientific Research (F49620-95-1-0342), May 1, 1995-July 1, 1998, $250,522.

41. "Computational Approaches for Smart Materials and Structural Systems Including Non-Linearities", Army Research Office (DAAH04-96-1-0080), May 1, 1996-April 30, 1999, $210,000.

42. "A study of structure-property relationships in blown polymeric films", National Science Foundation (with H.-J. Sue and Lynden Archer) September 1, 1997-August 31, 2000; $399,989 (personal share: $299,000).

43. "Numerical Simulation of Polymer Film Blowing", Consortium of companies (Equistar, Exxon, Clorox, Texas Eastman, Union Carbide, and Phillips)(with H.-J. Sue and K. R. Rajagopal); June 1, 1997-May 31, 2001, $875,000.

44. "A Meshless Computational Methodology for Nonlinear Dynamic Simulation of Structures" (`Parallel Optimization in a Structural Mechanics Code Applied to the Problem of Fatigue in Metals') Los Alamos National Laboratory, Los Alamos National Laboratory, Los Alamos, Nov. 1, 1999-October 31, 2001, $100,000.

45. "Damage Models and Computational Tools for Health-Monitoring of Smart Composite Structures," U.S. Army Research Office, May 1, 2001-April 30, 2004 (3 yrs.), $297,000.

46. "Scratch Behavior of Metals and Coatings," Consortium of companies (Formosa Plastics, Luzenac, Solvay, and Visteon) (with H.-J. Sue) $15,000/company/yr., April 1, 2001-December 31, 2005.

47. "A Multiscale Computational Model for Predicting Damage Evolution in Viscoelastic Composites Subjected to Impact Loading," U.S. Army Research Office, August 1, 2001-Oct. 31, 2004 (3 yrs.), $227,000.

48. "Development of k-Version of the Finite Element Method: A Robust Mathematical and Computational Procedure," U.S. Air Force of Office of Scientific Research, March 1, 2003-December 31, 2005, $150,000.

49. Morgan, R. and Reddy, J. N., "Development of Ultra High Temperature, Light Weight Carbon Composites," Texas Higher Education Coordinating Board, Jan. 1, 2004-Dec. 31, 2005 (2 yrs.), $98,500.

50. "A New Computational Methodology for Structural Dynamics Problems," U.S. Army Research Office, April 1, 2005-March 31, 2008, $217,381.

51. "Thermal Protection/Light Weight Materials, Development of Future Air Force Vehicles" (with R. J. Morgan and T. Creasy) U.S. Air Force of Office of Scientific Research, April 1, 2006-March 31, 2009, $418,661. (personal share: $150k).

52. "Renewable Energy and Environmental Sustainability Using Biomass from Anilmal Production Systems," US Department of Energy, Golden, CO (with K. Annamalai, et. al) June 1, 2006-May 31, 2007; $495,000 (personal share $42,713/year).

53. "Controllable Active Materials via Internally Generated Pressure Phase II," US Army Aviation Missile Command (Bell Helicopter Textron, Inc. is subrecipient) (with T. S. Creasy, PI, and J. N. Reddy and R. J. Morgan as co PIs), 1 October 2006 to 30 September 2009, $730,595 (personal share: $137K).

54. "Performance Characterization of Polyimide-Carbon Fiber Composites for Future Hypersonic Vehicles," (with K.R. Rajagopal and R. J. Morgan), 1 April 2007 – 30 Nov. 2007 (open contract for multiple years; $5.5M for five years), current amount $116,750, Air Force Office of Scientific Research.

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Dr. S. J. Lee (February 2004)
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Dr. R. Mayavaram (November 2004)
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Dr. Ravi Shankar Karedla
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PROFESSIONAL SERVICE ACTIVITIES

PROFESSIONAL AFFLIATIONS

Aeronautical Society of India (Fellow)
American Academy of Mechanics (Fellow)
American Association for the Advancement of Science
American Institute of Aeronautics and Astronautics (Fellow)
American Society of Composites (Fellow)
American Society of Civil Engineers (Fellow)
American Society of Mechanical Engineers (Fellow)
American Society for Engineering Education
International Association for Computational Mechanics (Fellow)
International Association for Analog Computation (AICA)
National Society of Professional Engineers
New York Academy of Science
Phi Kappa Phi
Pi Tau Sigma
Sigma Xi
Society of Automotive Engineers
Society of Industrial and Applied Mathematics
The Adhesion Society
Society of Engineering Science
U.S. Association for Computational Mechanics (Founding Member and Fellow)
Registered Professional Engineer, State of Oklahoma

NATIONAL OFFICES HELD

- Secretary of Fellows, American Academy of Mechanics (1993-1998)
- Board of Directors, Society of Engineering Science (1991-1993)
- Executive Committee of the International Association for Computational Mechanics (IACM), Joint Secretary and Co-Editor (1991-93) and Editor (1993-present) of *IACM Bulletin*.
- The Executive Committee of the U.S. Association for Computational Mechanics (USACM), member, 1988-present; Secretary (1991-1992); Treasurer (1992-1994); Vice-President (1994-1996); and President (1996-1998); Editor of *USACM Newsletter* (1988-1993).
- ASME Committee on Computing in Applied Mechanics, Applied Mechanics Division, American Society of Mechanical Engineers, member (1981-1993); Vice—Chairman (1993-1995); Chairman (1995-1997).
- Computational Methods Committee, Society of Engineering Science, member (1977-1983), Chairman (1983-1985)
- ASME Committee on Composite Materials, American Society of Mechanical Engineers, (member) 1982-present.

- Mathematical Methods Committee, Engineering Mechanics Division, ASCE, (member) 1983-1987.
- Elasticity Committee, ASCE, (member) 1985-1988.
- Computational Mechanics Committee, ASCE, Member (1990-1992), Chairman (1992-1994).
- Stability Committee, ASCE, Member (1992-present).
- Executive Committee of the Engineering Mechanics Division, ASCE, Member (1992-1996); Chairman (1995-1996).
- Advisory Board of the Engineering Mechanics Division, ASCE, Member (1996-2002); Chairman (1997-1999).
- Structures Technical Committee of AIAA, Member (1995-2000).

SHORTCOURSES TAUGHT

1. "Advances in Computational Fluid Dynamics", The University of Tennessee Space Institute, Tullahoma, TN, December 1982 (with K. C. Reddy).

2. "Finite Element Methods in Fluid Mechanics", Purdue University at Indianapolis, March 15-18, 1983 (with A. Ecer and H. Akay).

3. "Finite Element Methods in Fluid Mechanics and Heat Transfer", Purdue University at Indianapolis, March 12-16, 1984 (with A. Ecer and H. Akay).

4. "Finite Element Methods in Fluid Mechanics and Heat Transfer", Purdue University at Indianapolis, March 11-15, 1985 (with A. Ecer and H. Akay).

5. "Finite Element Methods in Fluid Mechanics and Heat Transfer", Purdue University at Indianapolis, March 10-14, 1986 (with A. Ecer and H. Akay).

6. "Finite Element Methods in Fluid Mechanics and Heat Transfer", Purdue University at Indianapolis, March 9-13, 1987 (with A. Ecer and H. Akay).

7. "An Introduction to the Finite Element Method", NASA Marshall Space Center, Huntsville, Alabama, June 1987 (with K. C. Reddy).

8. "Finite Element Calculation Methods and Their Application to Turbomachinery Flows", von Kárman Institute for Fluid Dynamics, Belgium, May 11-15, 1987 (with W. G. Habashi).

9. "Analysis of Laminated Composite Structures", The University of Tennessee Space Institute, Tullahoma, TN, October 24-28, 1988.

10. "Finite Element Method in Computational Fluid Dynamics and Heat Transfer", Purdue University at Indianapolis, March 7-11, 1988 (with A. Ecer and H. Akay).

11. "Introduction to the Finite Element Method", (EG-5520), 3M Company, Minneapolis, MN, May 8-10, 1989.

12. "Advanced Concepts in the Finite Element Method", (EG-5521) 3M Company, St. Paul, MN, May 11-12, 1989.

13. "Finite Element Method in Computational Fluid Dynamics and Heat Transfer", Purdue University at Indianapolis, May 15-19, 1989 (with A. Ecer and H. Akay).

14. "Introduction to the Finite Element Method", 3M Company, St. Paul, MN, Nov. 20-22, 1989.

15. "The Finite Element Method in Engineering Science", Brakes India Ltd., Padi, Madras, India, December 18-21, 1989.

16. "Introduction to the Finite Element Method", 3M Company, St. Paul, MN, March 12-15, 1990.

17. "Finite Element Method in Computational Fluid Dynamics and Heat Transfer", Purdue University at Indianapolis, May 6-11, 1990.

18. "An Advanced Course on the Finite Element Method", Michelin Americas Research and Development Corporation, Greenville, SC, Sept. 17-21, 1990.

19. "The Finite Element Method in Engineering Science", Holiday Inn, Cleveland, OH, July 15-19, 1991.

20. "An Introduction to the Finite Element Method", U. S. Army Waterways Engineering Experiment Station, Vicksburgh, Mississippi, May 11-15, 1992.

21. "The Finite Element Method in Computational Fluid Mechanics and Heat Transfer", Concordia University, Montreal, Canada, May 18-22, 1992 (with W. G. Habashi).

22. "The Finite Element Method in Engineering Science", Indian Institute of Science, Bangalore, India, November 20-25, 1992.

23. "The Finite Element Method in Computational Fluid Mechanics and Heat Transfer", Singer Island, Florida, October 11-15, 1993.

24. "The Finite Element Method in Computational Fluid Mechanics and Heat Transfer", Purdue University at Indianapolis, September 11-16, 1994 (with A. Ecer and H. Akay).

25. "Analysis of Laminated Composite Plates", NATO Sponsored short course presented at Middle East technical University, Ankara, Turkey, December 3-9, 1994.

26. "Finite Element Modeling of Smart Structures", at *1995 North American Conference on Smart Structures and Materials*, San Diego, February 25, 1995 (with Vasu V. Varadan).

27. "Mechanics of Composite Materials and Structures", Defense Science Organization, Ministry of Defense, Singapore, May 6-9, 1996.

28. "Refined Theories and Finite Element Models of Laminated Plates", Centre for Computational Mechanics, National University of Singapore, Singapore, December 6, 1996.

29. "Applications of the Finite Element Techniques in Fluid Mechanics and Heat Transfer", Bhabha Atomic Research Centre, Trombay, Mumbai, India, Dec. 16-20, 1996.

30. "Mechanics of Laminated Composite Plates: Theory and Analysis", University of Queensland, Brisbane, Australia, June 17-18, 1997.

31. "Theory and Analysis of Laminated Composite Plates", University Putra Malaysia (UPM), Serdang, Selangor, Malaysia, June 21, 1997.

32. "The Finite Element Method in Engineering Science" National Aerospace Laboratory, Bangalore, India, July 22-25, 1998.

33. "Mechanics of Composite Materials and Structures", Defence Evaluation and Research Agency (DERA), Rosyth Royal Dockyard, Dunfermline, Fife KY11 2XR, Scotland, U.K., September 6-11, 1998.

34. "Nonlinear Finite Element Analysis of Structural Dynamics", Defence Evaluation and Research Agency (DERA), Rosyth Royal Dockyard, Dunfermline, Fife KY11 2XR, Scotland, U.K., August 22-25, 1999.

35. ``Engineering Design & Practice Using FEM," The City University of Hong Kong, Hong Kong, June 14-19, 2001.

36. ``Engineering Design & Practice Using FEM," The City University of Hong Kong, Hong Kong, June 14-19, 2001.

37. ``Mechanics of Composite Materials and Structures," *US-Brazil Workshop on Advanced Materials*, Rio de Janeiro, Brazil, June 9-10, 2004.

38. ``On *k*-Version of the Finite Element Method," Short course presented at the Wright-Patterson Air Force Base, OH, August 13-15, 2004.

39. "Analysis of Composite Materials and Structures," Short course presented at the National University of Singapore, August 24-25, 2004.

40. "Structural Analysis and Failure Assessment of Composite Materials," Short course presented (with R. Talreja and Kristofer Gamstedt) at the Royal Institute of Technology, (KTH), Stockholm, Sweden, October 5-8, 2004.

41. "Mechanics of Laminated Composite Materials and Structures," Short course presented at the University Putra Malaysia (UPM), Kaulalampur, Malaysia, December 20, 2004.

42. "Linear and Nonlinear Finite Element Analysis," Short Course presented at the *US-Africa Workshop on Mechanics and Materials,* University of Cape Town, South Africa, January 28, 2005.

43. "An Advanced Course on Nonlinear Finite Element Analysis," December 11-14, 2006, the Product Development & Management Association, India, and the SAE India, Chennai, Tamilnadu, India.