

## Curriculum Vitae

### Professor S. S. Wang

**OFFICE  
ADDRESS,  
PHONE &  
E-MAIL:**

Room N216, Engineering Building  
Department of Mechanical Engineering  
University of Houston  
4800 Calhoun Road  
Houston, TX 77204-4792;

Room 152A, Building #3  
Composites Engineering and Applications Center (CEAC)  
University of Houston  
5000 Gulf Freeway  
Houston, TX 77204-0903;

(713)-743-5057 (Phone; CEAC)      (713)-743-5063 (Fax)  
(713)-743-4515 (Phone; ME Dept.) (713)-743-4516 (Fax)  
E-mail Address: sswang@uh.edu

**PRESENT  
POSITION:**

Distinguished University Professor (1990-Present),  
Mechanical Engineering Department; and  
Director (1994-Present),  
Composites Engineering and Applications Center (CEAC)  
for Petroleum Exploration & Production,  
University of Houston,  
Houston, TX 77204

**EDUCATION:**

Sc. D. (1974), Solid Mechanics and Materials Engineering,  
Massachusetts Institute of Technology,  
Cambridge, MA 02139

M. S. (1970), Engineering Mechanics,  
National Taiwan University,  
Taipei, Taiwan, China

B.S. (1968), Engineering Mechanics,  
National Cheng-Kung University,  
Tainan, Taiwan, China

**EXPERIENCE:**

Distinguished Visiting Professor (2000)

Laboratoire de Mechanique et Technologie,  
Ecole Normale Supérieure de Cachan/CNRS/Université Paris 6,  
Cachan, France

Professor (1984-90),  
Department of Theoretical & Applied Mechanics, and  
Department of Aeronautical & Astronautical Engineering;  
Director (1985-90),  
National Center for Composite Materials Research;  
University of Illinois at Urbana-Champaign, Urbana, IL 61801

Associate Professor (1980-84),  
Department of Theoretical & Applied Mechanics,  
University of Illinois at Urbana-Champaign, Urbana, IL 61801

Assistant Professor (1977-80),  
Department of Theoretical & Applied Mechanics,  
University of Illinois at Urbana-Champaign, Urbana, IL 61801

Lecturer and Research Associate (1974-77),  
Department of Materials Science and Engineering,  
Massachusetts Institute of Technology  
Cambridge, MA 02139

Research Assistant (1971-74),  
Department of Mechanical Engineering:  
Massachusetts Institute of Technology,  
Cambridge, MA 02139

**AWARDS  
HONORS:**

Plenary Lecturer  
2006 Composites Asia Conference,  
Kuala Lumpur, Malaysia, November 15-16, 2006

Plenary Lecture  
National Science Council Forum on Offshore Wind Energy,  
Taipei, Taiwan, October 23, 2006,

Keynote Lecturer,  
The 10<sup>th</sup> U.S.-Japan Conference on Composite Materials,  
Stanford University, Stanford, CA; September 18, 2002.

Keynote Lecturer,  
NACE 9th Middle East Corrosion Conference,  
NACE International  
Bahrain, February 12, 2001

Distinguished Lecturer  
Ecole Thematique: Damage Mechanics of Materials and Structures,  
Ecole Normale Superieure de Cachan/CNRS/ Universite Pierre & Marie  
Curie (Paris 6),  
Cachan, France; September 25-26, 2000.

OTRC Honors Awards  
Offshore Technology Research Center (OTRC)  
Texas A&M University/University of Texas-Austin,  
Houston, TX; November 1, 2000.

Keynote Lecturer  
The 3rd International Conference on Composite Materials for Offshore  
Operations (CM00-3),  
Houston, TX; October 2000.

Distinguished Alumni Award,  
National Cheng-Kung University Alumni Association & Foundation,  
Washington, D.C.; April 1999.

Keynote Lecturer, The 22nd National Theoretical and Applied Mechanics  
Conference, Taiwan, China, November 1998.

Keynote Lecturer, The 3rd International Conference on Materials  
Engineering for Resources, Akita, Japan, October 1998.

Atofina Chemicals (Previously, Elf Atochem) Research Award,  
1999 and 2002-03

Total Chemicals Research Awards, 2004-06

Shell Foundation Research Award, 1997, 1998, 1999 and 2000.

Exxon Educational Foundation Award, 1996, 1998 and 1999.

CMOO-2 Award for Outstanding Leadership and Technical Achievement,  
Houston, TX, October 1997.

DuPont Foundation Faculty Award, 1994-97.

Plenary Lecturer, ASME Summer Annual Meeting-Symposium on  
Mechanics of Composite Materials at Elevated & Cryogenic  
Temperatures, Columbus, OH, June 16, 1991.

Distinguished Service Award,  
CERL, U.S. Army Corps of Engineers,  
June, 1990.

Plenary Lecturer, 7th International Conference on Composite Materials (ICCM-7), Beijing, China, August 1-4, 1989.

Keynote Speaker, 7th International Conference on Vehicle Structural Mechanics (ICVSM-VII), Detroit, MI, April 11-13, 1988.

Lecturer, Southwest Mechanics Lecture Series at University of Texas, Texas A & M University, University of Oklahoma & Southwest Research Institute, February 15-19, 1988.

ALCOA Foundation Distinguished Faculty Award, Pittsburgh, PA, 1987.

Shell Development Company Faculty Award, 1987 & 1988.

General Lecturer, International Union of Theoretical & Applied Mechanics (IUTAM) Symposium on Yielding, Damage, and Failure of Anisotropic Solids, Villard de Lans, Grenoble, France, August 24-28, 1987.

General Lecturer, International Union of Theoretical & Applied Mechanics (IUTAM) Symposium on Mechanics of Damage and Fatigue, Technion and Tel Aviv, Israel, July 1-4, 1985.

Chrysler Engineering Challenge Award, 1985-90.

NASA-Virginia Tech Composites Program Distinguished Lectureship, Blacksburg, VA, 1985.

General Lecturer, The 16th IUTAM International Congress on Theoretical & Applied Mechanics, Lyngby, Denmark, August 19-24, 1984.

Best Paper Award, International Cryogenic Materials Conference (ICMC), Hamburg, Germany, 1983.

Xerox Award for Best Faculty Research, University of Illinois, 1982.

**PROFESSIONAL ACTIVITIES -  
EDITORSHIP, INTERNATIONAL &  
NATIONAL COMMITTEES, AND SOCIETY SERVICE**

**Editorship:** Co-Editor (2005-06) (with K.H. Lo)  
*Composite Materials for Offshore Operations-4*

University of Houston CEAC Publishing, Houston, TX

Guest Technical Editor (Theme Issues) (2005-07)  
*Arabian Journal of Science and Engineering*  
Dhahran, Saudi Arabia

Co-Editor (2000-01) (with J.G. Williams and K.H. Lo),  
*Composite Materials for Offshore Operations-3*,  
University of Houston CEAC Publishing, Houston, TX  
(736 Pages.)

Co-Editor (1997-99) (with J. G. Williams and K.H.Lo),  
*Composite Materials for Offshore Operations - 2*,  
ABS Publishing, New York, NY (778 pages).

Co-Editor (1994 - 95) (with D.W. Fittings),  
*Composite Materials for Offshore Operations -1*,  
NIST Special Technical Publications No. 887, (388 pages),  
U.S. Department of Commerce, Washington, D.C.

Associate Editor (1990 - 95)  
*ASME Journal of Engineering Materials and Technology*  
American Society of Mechanical Engineers

Editorial Board (1993 - 99)  
*Mechanics of Composite Materials and Structures - An International Journal*  
John Wiley & Sons Publishing

Co-Editor (1985-91)  
*Journal of Composites Research and Technology*,  
American Society for Testing and Materials

Co-Editor (1989)  
*Advances in Composite Materials and Structures*, ASME, AMD 82,  
1989, American Society of Mechanical Engineers

Co-Editor (1980)  
*Advances in Aerospace Structures and Materials*, ASME AD 01, 1980  
American Society of Mechanical Engineers

**International &  
Governmental  
Committees:**

Chair, Review Panel for U. S. Air Force Office of Scientific Research  
(AFOSR) Mechanics Program on Research Proposals (2005 and 2007)

Member, Review Panel for U. S. AFOSR Mechanics Program on Research  
Proposals, National Research Council (NRC), The National Academies

(July-December, 2004 and 2006).

National Materials Advisory Board Panel, National Academy of Sciences, on DoD Study on Challenges and Opportunities with Advanced Composite Materials (April 2004).

Co-chair and Organizer, International Organizing Committee, The Fourth International Conference on Composite Materials for Offshore Operations (CMOO-4), (2003-05)

International Scientific Committee, ENS Symposium on Recent Advances in Continuum Damage Mechanics in Composites, Cachan, France (1999-2000).

National Panel on Manufacturing & Testing for Performance Assurance, Qualifying New Technologies for Deepwater Oil & Gas Development Workshop, U. S. MMS and OTRC, October 2002.

Co-Chair, International Organizing Committee, The Third International Conference on Composite Materials for Offshore Operations (CMOO-3), (1998-2000)

U.S. Department of Commerce  
Advanced Technology Program on Composite Infrastructures,  
Program Development Committee (1997-99)

The 12th International Conference on Composite Materials (ICCM-XII),  
Paper & Program Review Panel, Paris, France, 1998.

National Materials Board (National Academy of Sciences) for AFOSR.

International Scientific Committee, IUTAM International Symposium on  
Strength Theories: Applications and Development, Xian, China, 1998.

International Advisory Committee, Joint Industry Program on FRP  
Tubular for Offshore E & P, DNV, Oslo, Norway, 1998.

US DoC NIST ATP Program on Composite Spoolable Tubing, Advisory  
Committee, Member (1995-98).

US DoC NIST ATP Program on Composite Production Risers, Advisory  
Committee, Member (1995-98).

MMS and DoC NIST International Workshop on Composite Materials  
for Offshore Operations, International Steering Committee (1993-97)

DARPA Advanced Submarine Technology (AST) Program Long-Range  
Planning Committee on Advanced Composite Materials (1988-92).

National Research Council on Use of Composite Materials  
in Load-Bearing Marine Structures, Panelist (1990).

U. S. National Congress of Theoretical & Applied Mechanics, Symposia  
Organizing Committee for the Xth Congress, Member (1989-90).

National Aeronautics & Space Administration - Technology  
Applications Program, Advisor (1987-91)

IUTAM Scientific Committee for Symposium on Local Mechanics  
Concepts for Composite Materials, Member (1989-92)

IUTAM Scientific Committee for Symposium on Inelastic Deformations  
of Composite Materials, Member (1987-90)

European Mechanics of Materials Association, MECMAT International  
Committee, Member (1988-90)

Society of Manufacturing Engineering, Advisory Committee-  
Composites Division, Member (1982-88)

U.S. Council of Japan-U.S. Conference on Composite Materials,  
Member (1980- )

Japan Society for Composite Materials, Advisory Committee and  
Foreign Member (1982- )

Institute of Aeronautics and Astronautics, National Cheng-Kung  
University, Taiwan, China, Advisory Committee on Aerospace Structures  
and Materials (1986- )

**PROFESSIONAL SOCIETIES:** American Society for Composite Materials, Founding Member,  
& Member of Scientific Committee  
American Institute of Aeronautics & Astronautics,  
American Society of Mechanical Engineers -  
Aerospace Division, Executive Committee, &  
National Structures and Materials Committee;  
Applied Mechanics Division, National Committee on Mechanics of  
Composite Materials  
American Academy of Mechanics  
American Society for Testing and Materials -  
E-9 Committee on Fatigue, D-30 Committee on High-Modulus Fibers  
& Composites, E-24 Committee on Fracture

**PUBLICATIONS:** Eight books and over 180 technical articles in books and refereed journals and more than 100 reports for NASA, ONR, AFML, AFOSR, Army, GRI, API and other federal governmental agencies and industries.  
(A list of publications is attached.)

**RESEARCH  
INTERESTS  
& AREAS OF  
ACTIVITIES:**

- (1). Solid mechanics and material science and engineering, especially on mechanical behavior and mechanics of composite materials & structures, including polymer-, metal-, and ceramic-matrix composites.
- (2). High-temperature mechanics and thermomechanical behavior of advanced composite materials.
- (3). Ballistic material resistance and penetration mechanics of lightweight armor systems.
- (4). Composite structures and materials for deepwater petroleum exploration, production, processing, transportation and storage.
- (5). Advanced composite materials and structures for renewable energy systems, e.g., fuel cells, offshore and onshore wind turbines, electric energy transmission and storage systems.
- (6). Electromechanical behavior and electromechanics of polymers and polymeric composites.

**TEACHING  
ACTIVITIES:**

Courses Offered at University of Illinois at Urbana-Champaign (1977-90):

Mechanical Behavior of Materials  
Plasticity, Flow and Fracture of Structural Metals  
Nonlinear Fracture Mechanics  
Introduction to Composite Materials  
Mechanics of Composite Materials  
Physics of Deformation and Fracture of Polymers  
Micromechanics of Heterogeneous Media  
Mechanics and Design of Composite Materials  
Advanced Topics on Composite Materials and Structures

Courses Offered at University of Houston (1990- present):

Composite Materials (MECE 6320)  
Micromechanics of Composite Materials (MECE 7320)  
Advanced Mechanics of Composite Materials and Structures (MECE 7321)  
Damage Mechanics and Failure Theories of Composite Materials  
(MECE 7322)  
Polymeric Materials and Mechanics (MECE 6321)  
Polymer Viscoelasticity and Fracture (MECE 6322)  
Advanced Fracture Mechanics (MECE 7371)  
Selected Topics on Advanced Composites and Polymers (MECE 7397)

**RESEARCH  
ACTIVITIES:**

(1).Graduate Students finished at the University of Houston (1991-)

1. L. Hoffmann, "Crack Growth and Fracture in Randomly Oriented Short-Fiber Composites under Monotonic and Cyclic Fatigue Loading," M.S. Thesis, Mechanical Engineering Department, May 1993.
2. Y. S. Yuan, "A Study of MgO Whisker Reinforced BPSCCO HTS

- Composites: Solid-State Processing, Microstructure and Superconducting Property Relationships,” M.S. Thesis, Mechanical Engineering Department, December 1993.
3. A. Skontorp, ”Isothermal High-Temperature Oxidation, Aging and Creep of Carbon Fiber Polyimide Composites,” Ph.D. Dissertation, Mechanical Engineering Department, May 1995.
  4. J. Schon, “Partial Melt Processing and Property Relationships of Bulk MgO Whisker Reinforced  $(\text{Bi, Pb})_2\text{Sr}_2\text{Ca}_2\text{Cu}_3\text{O}_{10-x}$ ,” Ph.D. Dissertation, Materials Engineering, December 1995.
  5. X. Lu, “Leakage Analysis and Experiments of Threaded Fiber Composite Joints under Combined Internal Pressure, Axial and Makeup Loading,” Ph.D. Dissertation, Mechanical Engineering Department, August 1996.
  6. H.K. Kung, ”High-Temperature Oxidation, Aging and Creep in Carbon Fiber Reinforced Polyimide Composites During Cyclic Thermal Fatigue,” Ph.D. Dissertation, Mechanical Engineering Department, August 1996.
  7. C. S. Payne, ”Accelerated Testing Methods and Failure Modes for Long-Term Leakage Failure of Fiber Reinforced Composite Tubular Subjected to Combined Internal Pressure and Axial Loading,” M.S. Thesis, Mechanical Engineering Department, December 1996.
  8. S. Srinivasan, “Long-Term Leakage Failure in Filament-Wound Glass Fiber Reinforced Cylindrical Composite Laminate Shells under Combined Internal Pressure and Axial Loading,” Ph.D. Dissertation, Mechanical Department, December 1996.
  9. S.A. Swan, “Effects of Aging on High-Temperature Fracture of Polyimide Polymers,” M. S. Thesis, Mechanical Engineering Department, January 1998.
  10. Z.Q. Gong, “A Theory and Associated Numerical Method for Determination of Probabilistic Strength of Fiber Composite Structures,” M.S. Thesis, Mechanical Engineering Department, August 1998.
  11. J. Tang, “A Study of Processing, Microstructure and Property Relationships of Oxide Ceramics and Their Composites for Fuel Cell Electrolyte and Electrodes,” M.S. Thesis, Materials Engineering, May 1999.
  12. Xinjiang Shen, “Damage and Failure Mechanics of Thick-Wall Cylindrical Hybrid Composite laminate Shells,” M.S. Thesis, Mechanical Engineering, August 1999.

13. Sara Escanero, "Continuum Damage Mechanics Experiments and Analysis and Failure Prediction of Steel-Strip/ Glass-Fiber Composite Laminate Cylindrical Shell with Residual Thermal Stresses," M.S. Thesis, Mechanical Engineering, July, 2002.
  14. Dylan A. Monaghan, "Effect of Saltwater on Multiaxial Cyclic Fatigue of Carbon/Epoxy Composite Materials", M.S. Thesis, Mechanical Engineering, August, 2003.
  15. Thomas Gallifet, "Elevated Temperature Fiber/Matrix Interface of Carbon Fiber/Polyimide (G30-500/PMR15) Composite," M.S. Thesis, Mechanical Engineering, January 2005.
  16. Feng Wang, "Effect of Multiaxial Stress State and Saltwater on Cyclic Fatigue Damage and Failure of Glass/Epoxy Composite", Ph.D. Dissertation, Mechanical Engineering, May 2007.
  17. Emrah Gokdag, "Craze Development in High-Impact Polystyrene", Ph.D. Dissertation, Mechanical Engineering, December 2007.
- (2). Post-Doctoral Fellows and Research Associates Finished & Returned:
- |                  |  |
|------------------|--|
| Y. Shibuya       | (Completed Post-Doctoral research in Mechanical Engineering, 1994; Returned to Japan)  |
| H. Suzuki        | (Completed Post-doctoral Fellowship, Mechanical Engineering, 1996; Returned to Japan.)   |
| A. Skontorp      | (Completed Post-Doctoral Research Associate research Mechanical Engineering, 1997 ; Returned to Sweden.)                         |
| M. S. Wong       | (Completed Post-doctoral Research Associate research, Mechanical Engineering, 1997; Now with U.S. AFML, Dayton, OH)              |
| M. Karayaka      | (Completed Post-doctoral Research Associate research, Mechanical Engineering, 1997; Now with Aker Engineering, Houston, TX)      |
| S. Srinivasan    | (Completed post-doctoral research, Mechanical Engineering, 1998; Now with ABS, Houston, TX.)                                     |
| E. Duvivier      | (Completed post-doctoral research, CEAC/Mechanical Engineering in 1999; Returned to France)                                      |
| H. Wu            | (Completed post-doctoral research, Mechanical Engineering/TCSUH in 1999; Now with Nordic Superconductivity, Copenhagen, Denmark) |
| X. Lu            | (Completed post-doctoral research, 2000; Now with Coflexip Stena Aker Engineering, Houston, TX)                                  |
| A. Selvarathinam | (Completed post-doctoral research in 2001; Now with General Dynamics, Ft. Worth, TX)   |

(3). Post-Doctoral Research Associates and Research Scientists Supervised:

X. H. Chen	Research Scientist
A. Miyase	Research Associate Professor
A. Miravete	Senior Research Scientist
T. P. Yu	Research Scientist
J. G Williams	Senior Research Scientist
B.W. Cole	Senior Research Scientist

(Continued)

(4). Design, Construction, Development, Maintenance and Management of the Following Laboratories for Research and Instructional Uses in Mechanical Engineering Department and CEAC:

- a. Computational Laboratories for Solid Mechanics and Advanced Materials:
  - Networked High-Speed Workstation Laboratory
  - Computer-Aided Design & Analysis Laboratory
  - Microcomputer Laboratory
- b. Laboratories for Thermomechanical Studies:
  - Multiaxial Material and Structural Testing Laboratory
  - High-Temperature Material Testing Laboratory
  - High-Temperature Thermal Shock/Fatigue and Creep Laboratory
  - High-Temperature Mechanical Fatigue-Creep Interaction Laboratory
  - Thermal -Mechanical Analysis and Morphology Laboratory
  - Electron Microscopy & Image Analysis Laboratory
- c. Laboratories for Micromechanics and Interface/Interphase Studies:
  - Micromechanics Laboratory
  - Micro-Measurement/Micromechanics Laboratory
  - Specimen Preparation and Fabrication Laboratory
- d. Laboratories for Durability and Reliability:
  - Erosion-Corrosion Laboratory
  - Long-Term Multiaxial Creep & Environment Laboratory
- e. Optical Fiber Sensor Technology Laboratory
- f. Composite Filamentary Winding Laboratory

g.

## LIST OF PUBLICATIONS

### 1. Books and Monographs

- (1) S. S. Wang and D. K. Roylance, "Penetration Mechanics of Textile Structures," Chapter 12, in Ballistic Materials and Penetration Mechanics, R C. Laible, Ed., Elsevier Scientific Publishing Co., Amsterdam, Holland (1980) pp. 273-292.
- (2) S. S. Wang and W. J. Renton, (Editors), Advances in Aerospace Structures and Materials, ASME AD-01, American Society of Mechanical Engineers, New York, NY (November, 1981).
- (3) S. S. Wang and E. S.-M. Chim, "Degradation of Fiber-Reinforced Composite Materials at Cryogenic Temperature, Part I - Uniaxial Tensile and Pure Torsional Fatigue," in Advances in Cryogenic Engineering, Vol. 28, R. P. Reed and A. F. Clark, Eds., Plenum Press, New York (1982) pp. 191-200.
- (4) S. S. Wang and E. S.-M. Chim, "Degradation of Fiber-Reinforced Composite Materials at Cryogenic Temperature, Part II - Multiaxial Fatigue," in Advances in Cryogenic Engineering, Vol. 28, R. P. Reed and A. F. Clark, Eds., Plenum Press, New York, NY (1982) pp. 201-210.
- (5) R. J. Stango and S. S. Wang. "Process-Induced Residual Thermal Stresses in Advanced Fiber-Reinforced Composite Laminates," in Polymer Processing: Analysis and Innovation, N. P. Suh and C. L. Tucker III, Eds., ASME PED-5, American Society of Mechanical Engineers, New York, NY (1982) pp. 67-81.
- (6) S. S. Wang, "Fracture Mechanics for Delamination Problems in Composite Materials," in Mechanics of Material Behavior (The D. C. Drucker Anniversary Volume), G. J. Dvorak and R. T. Shield, Eds., Elsevier Scientific Publishing Co., Amsterdam, The Netherlands (1984) pp. 369-383.
- (7) S. S. Wang, "Elasticity Solutions for a Class of Composite Laminate Problems with Stress Singularities," in Mechanics of Composite Materials (Proc. of IUTAM Symposium on Mechanics of Composite Materials, Blacksburg, VA, August, 1982), Z. Hashin and C. T. Herakovich, Eds., Pergamon Press, New York, NY (1983) pp. 259-281.
- (8) D. L. Hunston, A. J. Kinloch and S. S. Wang, "Characterization of the Fracture Behavior in Adhesive Joints," in Advances in Adhesive Joints: Formation, Characterization and Testing, K. L. Mittal, Ed., Plenum Press, New York, NY (1984) pp. 789-807.
- (9) S. S. Wang, "Three-Dimensional Hybrid-Stress Finite Elements Analysis of Composite Laminates with Cracks and Cutouts," in Pressure Vessel Components Design and Analysis, R. C. Gwaltney, Ed., ASME PVP-Vol. 98-2, American Society of Mechanical Engineers, New York, NY (June 1985) pp. 235-246.

- (10) S. S. Wang and Y. D. S. Rajapakse (Editors), Advances in Composite Materials and Structures, ASME AMD Vol. 82, American Society of Mechanical Engineers, New York, NY (May, 1989).
- (11) S. S. Wang and N. M. Zahlan, "Compressive Stability of Delaminated Short-Fiber Composite Materials," in Materials and Engineering Design: The Next Decade, Chapter 7, B. F. Dyson and D. H. Hayhurst, Eds., The Institute of Metals, London, U.K. (1989) pp. 221-237.
- (12) S. S. Wang and D. W. Fitting (Editors), Composite Materials for Offshore Operations, U.S. Department of Commerce NIST Special Publication No. 887, U.S. Department of Commerce, Washington, D.C. (1995) (388 pages.)
- (13) B. W. Cole, K. H. Lo, J. G. Williams and S. S. Wang, "Advanced Composites Offshore: Current Status and a Proposed R & D Program," in Composite Materials for Offshore Operations, S. S. Wang and D. W. Fitting, Eds., U.S. Department of Commerce NIST Special Publication No. 877, U.S. Department of Commerce, Washington, D. C. (1995) pp. 4-15.
- (14) J.S. Schon and S. S. Wang, "Partial Melt Processing of Bulk MgO Whisker Reinforced  $(\text{Bi,Pb})_2\text{Sr}_2\text{Cu}_3\text{O}_{10}$  Superconductor," Proceedings of the 10th Anniversary HTS Workshop on Physics, Materials and Applications, B. Batlogg, W.K. Chu, C.W. Chu, D. Gubser and A.K. Muller, Eds., Houston, TX (March 1996) pp. 205-208.
- (15) G.Z. Zhang, M.S. Wong and S. S. Wang, "Strain Tolerance of Superconducting Properties and Cryogenic Mechanical Behavior of Bulk MgO Whisker Reinforced HTS BPSCCO Composite," Proceedings of the 10th Anniversary HTS Workshop on Physics, Materials and Applications, B. Batlogg, W.K. Chu, C.W. Chu, D. Gubser and A.K. Muller, Eds., Houston, TX (March 1996) pp. 635-637.
- (16) S. S. Wang, J.G. Williams and K.H. Lo, Eds., Composite Materials for Offshore Operations - 2, ABS Publishing, New York, NY (1999) (778 pages).
- (17) S. S. Wang, J.G. Williams and K. H. Lo, Eds., Composite Materials for Offshore Operations- 3, University of Houston - CEAC Publishing, Houston, TX (2001) (736 pages.)
- (18) S. S. Wang and K. H. Lo, Eds., Composite Materials for Offshore Operations -4, University of Houston - CEAC Publishing, Houston TX (2005) (785 pages).

**2. Papers submitted to and accepted for publication or already published in high level technical journals or Proceedings with rigorous review procedures.**

- (1) J. F. Mandell, F. J. McGarry, S. S. Wang and J. H. Im, "Stress Intensity Factors for Anisotropic Fracture Test Specimens of Several Geometries," Journal of Composite Materials, 8 (1974) pp. 106-116.
- (2) S. S. Wang, J. F. Mandell and F. J. McGarry, "Three-Dimensional Solution for a Through-Thickness Crack in a Cross-Plied Laminated Composite," Fracture Mechanics of Composites, ASTM Special Technical Publication 593, American Society for Testing and Materials (1975) pp. 36-60.
- (3) S. S. Wang, J. F. Mandell and F. J. McGarry, "Three-Dimensional Solution for a Through-Thickness Crack with Crack-Tip Damage in a Cross-Plied Laminate," Fracture Mechanics of Composites, ASTM Special Technical Publication 593, American Society for Testing and Materials (1975) pp. 61-85.
- (4) J. F. Mandell, S. S. Wang and F. J. McGarry, "The Extension of Crack-Tip Damage Zones in Fiber Reinforced Laminated Composites," Journal of Composite Materials, 9 (1975) pp. 266-287.
- (5) J. F. Mandell, F. J. McGarry and S. S. Wang, "Fracture of Fiber Reinforced Composites," Polymer Engineering and Science, 16, 9 (1976) pp. 609-614.
- (6) S. S. Wang, J. F. Mandell and F. J. McGarry, "A Multilayered Hybrid-Stress Finite Element Analysis of a Through-Thickness Edge Crack in a  $[\pm 45^\circ]_s$  Laminate," Engineering Fracture Mechanics, 9, 1 (1977) pp. 217-238.
- (7) D. K. Roylance and S. S. Wang, "The Influence of Nonlinear Viscoelastic Relaxation on Impact Response of Textile Yarns and Panels," ACS Polymer Preprints, 27, 2 (1977) pp. 540-546.
- (8) S. S. Wang, J. F. Mandell and F. J. McGarry, "An Analysis of the Crack-Tip Stress Field in DCB Adhesive Fracture Specimens," International Journal of Fracture, 14, 1 (1978) pp. 39-58.
- (9) S. S. Wang, "Delamination Fracture From Surface Damage in  $[\pm 45^\circ]/0^\circ/90^\circ]_s$  Graphite/Epoxy Composites," Proceedings of the Second International Conference on Composite Materials (ICCM-II), TMS-AIME (1978) pp. 277-291.
- (10) S. S. Wang and D. K. Roylance, "Dynamic Fracture of Nonlinear Viscoelastic Polymeric Fabric Materials," Numerical Methods in Fracture Mechanics, D. R. J. Owens and A. R. Luxmoore, Eds., University College Swansea Press (1978) pp. 696-708.
- (11) S. S. Wang, "Delamination Crack Growth in Unidirectional Fiber Reinforced Composites under Static and Cyclic Loading," Composite Materials: Testing and Design (Fifth

- Conference). ASTM Special Technical Publication 674, S. W. Tsai, Ed., American Society for Testing and Materials (1979) pp. 642-663.
- (12) D. K. Roylance and S. S. Wang, "Penetration Mechanics of Textile Structures: Influence of Nonlinear Viscoelastic Relaxation," Polymer Engineering and Science, **18**, 14 (1978) pp. 1068-1072.
  - (13) D. K. Roylance and S. S. Wang, "Blunt Trauma Resulting from Ballistic Impact on Textile Armor," Bull. Am. Phys. Soc., **23**, 3 (1978) pp. 385.
  - (14) S. S. Wang, "An Analysis of Tapered DCB Fracture Toughness Test for Adhesive Joints," Fracture Mechanics, ASTM Special Technical Publication 667, C. W. Smith, Ed., American Society for Testing and Materials (1979) pp. 651-667.
  - (15) D. K. Roylance, S. S. Wang and J. Courter, "Fracture Mechanics of Orthotropic Polymers," ACS Polymer Preprints, **38**, 2 (1978) pp. 244-249.
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## NATIONAL AND INTERNATIONAL CONFERENCES

### 1. Organizer of National or International Conferences

- ASME Aerospace Structures and Materials Conference in 1981 ASME Winter Annual Meeting, Washington, DC, November 18-20, 1981, (Co-organizer: Dr. W. J. Renton).
- Second Japan-U.S. Conference on Composite Materials, NASA-Langley, VA, June, 1983 (Member of Organizing Committee, 1981-83).
- 24th AIAA/ASME/ASCE/AHS Structures, Structural Dynamics and Materials Conference, Lake Tahoe, NV, May 9-11, 1983, (Member of Organizing Committee, 1981-83).
- 21st Annual Meeting of Society of Engineering Sciences-Session on Mechanics of Composite Materials, Oct. 15-17, 1984, Blacksburg, VA, 1984.
- 3rd Japan-U.S. Conference on Composite Materials, Science University of Tokyo, Tokyo, Japan, June 22-25, 1986, (Member of Organizing Committee, 1984-86).
- 1986 ASME Winter Annual Meeting, Symposium on Advances in Fiber Composite Materials and Structures (sponsored by ASME Applied Mechanics Division, Aerospace Division, and Materials Division), Anaheim, CA, November, 1986.
- International Conference on Fracture and Fatigue Mechanics, Shanghai, China, April 21-24, 1987, (Member of International Organizing Committee).
- 4th Japan-U.S. Conference on Composite Materials, June 27-29, 1988, Washington DC (Member of Organizing Committee; Member of Paper Selection Committee).
- 1988 NCCMR Workshop on Mechanics and Design of Composite Materials, University of Illinois, Urbana, IL, May 23-25, 1988.
- DARPA Workshop on Fundamentals of Thick-Section Composite Materials and Structures Research, Reston, VA, December 13-14, 1988 (Co-organizer: Dr. C. Bersch).
- IUTAM Symposium on Inelastic Deformation of Composite Materials, Troy, New York, May 29-June 1, 1990, (Member of International Scientific Committee).
- 1989 MECAMAT International Conference on Mechanics and Mechanisms of Damage in Composites and Multimaterials, St.-Etienne, France, November 15-17, 1989 (Member of International Committee).
- 5th Japan-U.S. Conference on Composite Materials, Tokyo, Japan, June 24-27, 1990, (Member of Organizing Committee, 1988- ).
- XIth U.S. National Congress of Theoretical and Applied Mechanics, Symposium on Failure of Composite Materials, May 21-25, 1990, (Co-organizer: G. Springer), Phoenix, AZ.
- IUTAM Symposium on Local Mechanics Concepts for Composite Materials, Blacksburg, VA, October, 1991, (Member of International Scientific Committee).
- Workshop on Composite Materials for Off-Shore Structures and Production Engineering, Houston, TX, October 14-15, 1991.
- 6th Japan-U.S. Conference on Composite Materials, Orlando FL, June 22-25, 1992, (Member of U.S. Organization Council).
- First International Workshop on Composite Materials for Offshore Operations, Houston, TX, October 26-28, 1993 (Conference Organizer).

The Second International Conference on Composite Materials for Offshore Operations (CMOO-2), Houston, TX, October 28-30, 1997 (Conference Organizer and General Chairman).

U.S. Department of Commerce NIST ATP Workshop on Composite Infrastructures, Gaithersburg, MD, June 23-24, 1998 (Co-organizer and co-chair).

US MMS/CEAC Workshop on Composites Offshore, New Orleans, LA, April 21, 1999 (Workshop Director and Lecturer).

The Third International Conference on Composite Materials for Offshore Operations (CMOO-3), Houston, TX, October 31-November 2, 2000 (Conference Co-Chair).

The Fourth International Conference on Composite Materials for Offshore Operations (CMOO-4), Houston, TX, October 4-6, 2005. (Conference Chairman).

2. Chairman of National or International Conferences and Meeting Sessions

1980 ASME Century Emerging Technology Conferences; Session Aero-5 - "Emerging Technologies in Structures," August 14, 1980, San Francisco, CA.

1st Japan-U.S. Conference on Composite Materials; Session 12 - "Thermal and Environmental Problems in Composite Materials," January 13, 1981, Tokyo, Japan.

1981 International Cryogenic Engineering Conference and the International Cryogenic Materials Conference (ICEC/ICMC); Session DA - "Nonmetallic and Composite Materials," August 11, 1981, San Diego, CA.

ASME Structures and Materials Conference in 1981 ASME Winter Annual Meeting; Session Aero-1 - "Composite Materials-Fracture, Fatigue and Viscoelastic Behavior," November 18, 1981, Washington, DC.

International Symposium on Engineering Science, Session II-A-1 (Co-Chairman: Prof. C.W. Bert), December 29-31, 1981, Taiwan, Republic of China.

Fourth International Conference on Composite Materials (ICCM-IV); Session 4A - Interfacial Stresses and Delamination, October 27, 1982, Tokyo, Japan.

ASTM National Symposium on Effects of Defects in Composite Materials, Session I, December 13, 1982, San Francisco, CA.

2nd Japan-U.S. Conference on Composite Materials; Session I - Strength and Fracture-I (Co-Chairman: Prof. H. Fukada), June 6-8, 1993, Hampton, VA.

ASTM National Symposium on High Modulus Fiber Composites in Ground Transportation and High Volume Applications; Session I - Fatigue and Fracture Behavior, November 7, 1983, Pittsburgh, PA.

1983 ASME Winter Annual Meeting; Applied Mechanics Division Session 7 - Symposium on Mechanics of Damage in Composites II, November 16, 1983, Boston, MA.

21st Society of Engineering Science Annual Meeting, Session 15 PM1 - Mechanics of Composite Materials, October 15, 1984, Virginia Polytechnic Institute and State University, Blacksburg, VA.

1985 Joint ASME/ASCE Mechanics Conference; Symposium on Fracture of Fibrous Composites (sponsored by ASME Applied Mechanics), Session AMM.1, June 24, 1985, Albuquerque, NM.

- 3rd Japan-U.S. Conference on Composite Materials; Session 5 - Vibration and Impact (Co-Chairman: Prof. T. Tanimoto), Science University of Tokyo, Tokyo, Japan, June 23, 1986.
- 1986 ASME Winter Annual Meeting, Symposium on Advances in Composite Materials and Structures, Session ACMS 1 - Mechanics of Fiber Composite Materials (Co-Chairman: Prof. G. J. Dvorak), Anaheim, CA, December 10, 1986.
- 1986 ASME Winter Annual Meeting, Symposium on Advances in Composite Materials and Structures, Session ACMS 4 - Mechanical Behavior and NDE of Fiber Composite Materials (Co-Chairman: Professor K. L. Reifsnider), Anaheim, CA, December 11, 1986.
- 4th International Conference on Numerical Methods in Fracture Mechanics, Session 5A on Fracture of Composite Materials, San Antonio, TX, March 23-27, 1987.
- 4th Japan-U.S. Conference on Composite Materials; Session 4 - Micromechanics and Interface Effects, June 27-29, 1988, Washington, DC.
- 1988 ASME Applied Mechanics and Engineering Sciences Joint Conference; Symposium on Constitutive Equations and Life Prediction Models for High-Temperature Applications, Session 1: Composites I (Co-Chairman: E. Krempl), University of California, Berkeley, CA, June 20-22, 1988.
- 1988 ASME Applied Mechanics and Engineering Science Joint Conference; Symposium on Mechanics of Composite Materials, Session 3: Ceramic Composites, University of California, Berkeley, CA, June 20-22, 1988.
- American Society for Composites Third Annual Technical Conference; Symposium IV-Session A: Composite Mechanics (Co-Chairman, J. Whitney), Seattle, WA, September 25-29, 1988.
- American Society for Composites Third Annual Technical Conference; Symposium IV-Session B: Composite Mechanics (Co-Chairman, J. Lees), Seattle, WA, September 25-29, 1988.
- Third DARPA/DOE/ONT Symposium on Thick-Section Composites in Compression, Session 1: Failure Mechanics and Mechanisms (Panelist), Knoxville, TN, July 11-13, 1989.
- 1989 ASME Winter Annual Meeting, Symposium on Micromechanics and Inhomogeneity, Session 2: Micromechanics and Dislocations (Co-Chairman: D. C. Drucker), San Francisco, CA, December 10-15, 1989.
- XIth U.S. National Congress of Theoretical and Applied Mechanics, Symposium on Failure of Composite Materials (Co-Chairman, G. Springer), Tucson, AZ, May 21-25, 1990.
- The 8th International Conference on Composite Materials; Session 27: Fracture (Co-Chairman, John Whitcomb), Honolulu, HI, July 16, 1991.
- Workshop on Composite Materials for Off-Shore Structures and Petroleum Production Engineering; Session 1: Overview of Off-Shore Systems and Production Engineering and Composite Technology in Petroleum Industry, Houston, TX, October 14, 1991.
- Sixth Japan-U.S. Conference on Composite Materials, Session 6B: Micromechanics, Orlando, FL, June 22-24, 1992.
- 1993 ASME/ASCE/SES Annual Summer Meeting, Symposium on Mechanics of Composite Materials and Structures-Nonlinear Effects; Session 5 on Mechanics of Failure, Charlottesville, VA, June 6-9, 1993.

First International Workshop on Composite Materials for Offshore Operations  
(Conference Chairman), Houston, TX, October 26-28, 1993.

1994 ASME OMAE Conference; Symposium on Advanced Composites in Offshore  
(Symposium Co-Chairman, J. Fischer), Houston, TX, March 1, 1994.

Second International Workshop on Composite Materials for Offshore Operations  
(Conference Chairman), Houston, TX, October 28-31, 1996.

Gordon Research Conference on Composite Materials, Session 8: Emerging New  
Applications (Discussions Leader & Session Chairman), Ventura, CA, January 10-  
14, 1994.

The Ninth Technical Conference of American Society for Composites, Session 10C: (Co-  
Chairman: R. L. Sierakowski), Newark, DE, September 20-22, 1994.

1995 ASME/ASCE/SES Annual Summer Meeting, Symposium on Composite Materials,  
Session 4-4: Design and Analysis of Composites (Co-Chairman: S. White),  
UCLA, Los Angeles, CA, June 28-30, 1995.

Tenth International Conference on Composite Materials (ICCM-10, Session 6: High  
Temperature Mechanics, Whistler, British Columbia, Canada, August 14-18, 1995.

The 3rd International Conference on Materials Engineering for Resources, (Session 1-  
KB), Akita, Japan, October 26-28, 1998.

The 3rd International Conference on Materials Engineering for Resources, (Advisory  
Board, Poster Sessions), Akita, Japan, October 26-28, 1998.

ENS Symposium on Recent Advances in Continuum Damage Mechanics for Composite  
Materials; Co-chair, Session on Multi-Scale Approaches and Size Effects,  
Cachan, France, September 20-22, 2000.

APEC Workshop on Assessing and Maintaining the Integrity of Offshore Oil and Gas  
Facilities; Chair, Session on Technology and Case Studies, Beijing, China,  
October 9-11, 2000.

Atofina Elf Symposium on Pipeline and Downhole Innovations for the Oil and Gas  
Industry; Chair, Session I on Advanced Design and Test Methodologies, Calgary,  
Canada, April 4, 2001.

The 14<sup>th</sup> U.S. National Congress of Theoretical and Applied Mechanics, Co-Chair,  
Session W4F on Analysis and Durability of Composites, Blacksburg, VA, June 23-  
28, 2002.

The 14<sup>th</sup> U.S. National Congress of Theoretical and Applied Mechanics, Co-Chair,  
Session T3I on Viscoelasticity in Composites, Blacksburg, VA, June 23-28, 2002.

The 4<sup>th</sup> International Conference on Composite Materials for Offshore Operations  
(CMOO-4), Houston, TX, October 4-6, 2005

*The ASME Applied Mechanics and Materials Conference McMAT 2007, University of  
Texas at Austin, June 5, 2007, Chair, Session 13-2-3 on Rate Sensitive Testing,  
in Symposium on Mechanics of Time Dependent Composites, (Co-chair: G.  
Voyiadjis)*

## INVITED SEMINAR, COLLOQUIUM AND CONFERENCE SPEAKER:

Massachusetts Institute of Technology, Cambridge, MA	(Spring 1974)
GM Research Center, Warren, MI	(Spring 1976)
Carnegie-Mellon University, Pittsburgh, PA	(Spring 1976)
Virginia Polytechnic Institute, Blacksburg, VA	(Spring 1976)
Rutgers University, Piscataway, NJ	(Spring 1976)
NASA-Lewis Research Center, Cleveland, OH	(Spring 1976)
University of Illinois at Chicago Circle, Chicago, IL	(Fall 1977)
Naval Research Laboratory, Washington, DC	(Fall 1977)
Duke University-NSF Workshop, Durham, NC	(Fall 1978)
Washington University, St. Louis, MO	(Spring 1978)
Owens-Corning Fiberglass Research Center, Granville, OH	(Spring 1978)
NASA-Lewis Research Center, Cleveland, OH	(Spring 1978)
University of Florida, Gainesville, FL	(Fall 1979)
Naval Research Laboratory, Washington, DC	(Fall 1979)
General Dynamics - Fort Worth Division, Fort Worth, TX	(Fall 1980)
DoE - NBS Workshop Materials at Low Temperatures, Vail, CO	(Fall 1980)
Texas A & M University, College Station, TX	(Fall 1980)
Naval Research Laboratory, Washington, DC	(Fall 1980)
Fermi National Laboratory, Batavia, IL	(Fall 1980)
Westinghouse Research & Development Center, Pittsburgh, PA (Materials Science Lecture Series)	(Jan. 26, 1981)
Navy Fracture Mechanics Workshop, Annapolis, MD	(Feb. 18-19, 1981)
DoD/NASA Workshop on Service-Life Prediction of Adhesive Bonded Joints and Structures, Dayton, OH	(April 23-24, 1981)
United Technologies Research Center, East Hartford, CT (Scholar Seminar Series)	(June 23, 1981)
Owens-Corning Fiberglass Corporation, Granville, OH (Technical Center Research Seminar)	(Oct. 26, 1981)
ASTM D30.02 (High Modulus Composites) and E24.04.09 (Fracture) Joint Subcommittee Meeting, Williamsburg, VA	(March 11, 1982)
University of Delaware, Newark, DE (Mechanical and Aerospace Engineering Departmental Colloquium) (March 12, 1982)	
University of Illinois Polymer Symposium, Urbana, IL	(May 19, 1982)
IUTAM Symposium on Mechanics of Composite Materials, Blacksburg, VA	(Aug. 16, 1982)
International Symposium on Adhesive Joints, Kansas City, MO	(Sept. 12, 1982)
ASME Polymer Processing Symposium, Washington, DC	(Sept. 14, 1982)
Owens-Corning Fiberglass Corporation, Technical Center Granville, OH	(Dec. 6, 1982)
Gordon Research Conference on Composite Materials, Santa Barbara, CA	(Jan. 17, 1983)

D. C. Drucker Symposium on Mechanics of Material Behavior,  
Urbana, IL (June 6-7, 1983)

University of Pennsylvania, Philadelphia, PA (Mech. Eng. and  
Applied Mechanics Department Colloquium) (April 11, 1984)

Drexel University, Philadelphia, PA (Mechanical Engineering  
Department Colloquium) (April 12, 1984)

16th IUTAM International Congress on Theoretical and Applied Me-  
chanics (invited General Lecturer), Copenhagen, Denmark (Aug. 19-24,  
1984)

DuPont Co., Experimental Station, Wilmington, DE (Feb. 3, 1984)

Owens-Corning Fiberglas, Technical Center, Granville, OH (March 13, 1984)

National Bureau of Standards, Gaithersburg, MD (Polymers  
and Composites Colloquium) (July 31, 1984)

International Symposium on Composites: Materials and  
Engineering; University of Delaware, Newark, DE (Sept. 24, 1984)

DoD/NASA Tenth Annual Mechanics of Composites Review  
Meeting, Dayton, OH (Oct. 15, 1984)

Distinguished Lecturer, NASA-Virginia Tech Composites  
Program, Virginia Polytechnic Institute and State  
University, Blacksburg, VA (Feb. 27,  
1985)

Hercules, Inc., Aerospace Division, Magna, UT (April 1-2, 1985)

IUTAM Symposium on Mechanics of Damage and Fatigue,  
Technion, Haifa and Tel Aviv University, Israel (July 1-4, 1985)

DuPont Experimental Station, Wilmington, DE (June 5-6, 1985)

ONR Workshop on Constitutive Equations and Damage  
Mechanics of Materials, Washington, DC (Oct. 1-2, 1985)

DoD/NASA Eleventh Annual Mechanics of Composites  
Review meeting, Dayton, OH (Oct. 22-24, 1985)

Northwestern University, Theoretical and Applied  
Mechanics Colloquium, Evanston, IL (Nov. 15, 1985)

Ashland Chemical Co. - Research Center, Columbus, OH  
Title: "Deformation, Fatigue and Fracture of Short-  
Fiber SMC Composites" (Nov. 4, 1985)

Northwestern University, Colloquia on Modern Topics in  
Theoretical and Applied Mechanics, Evanston, IL  
Title: "Mechanics of Delamination in Fiber  
Composite Laminates" (Nov. 15, 1985)

GM Allison Gas Turbine-Engineering Center, Advanced  
Engine Structures and Materials Seminar,  
Title: "Research on Analytical and Test Methods of  
Metal-Matrix Composites for High-Performance  
Turbine Engines" (March 7, 1986)

Shell Development Company Westhollow Research Center,  
Materials Science and Engineering Seminar Series,  
Houston, TX  
Title: "Compressive Failure of Advanced Fiber  
Composite Materials: Theory and Experiment" (June 13, 1986)

- Third Japan-U.S. Conference on Composite Materials,  
Tokyo, Japan  
Title: "Shear Buckling and Postbuckling Analyses of  
Delaminations in Fiber Composites" (June 23-25, 1986)
- Third Japan-U.S. Conference on Composite Materials,  
Tokyo, Japan  
Title: "Interlaminar Creep and Fracture of Thermoplastic-  
Matrix Composites at Elevated Temperatures" (June 23-25, 1986)
- Sophia University, Mechanical Engineering Department  
Colloquia, Tokyo, Japan  
Title: "Advances of Modern Fiber Composite Materials" (June 26, 1986)
- The University of Tokyo, Institute of Aeronautics and Astro-  
nautics Colloquia, Tokyo, Japan  
Title: "Recent Advances in Damage Mechanics of Fiber  
Composite Materials" (June 27, 1986)
- CONOCO, Inc. - Production Research and Development Center,  
Materials Science Seminar Series, Ponca City, OK  
Title: "Research on Thick-Section Composite Materials  
and Structures" (July 28, 1986)
- ONR Workshop on Stability and Postbuckling Behavior of Shell  
Structures, Newport, RI  
Title: "Postbuckling and Other Instability-Related  
Failure of Fiber Composite Materials" (Aug. 4-7, 1986)
- DoD Conference on Nondestructive Testing and Evaluation of  
Advanced Materials and Composites, Colorado Springs, CO  
Title: "Mechanisms and Mechanics of Damage and Fracture  
in Advanced Composites" (Aug. 19-21, 1986)
- McDonnell Aircraft Company, Engineering Technology Department,  
Structures and Materials Seminar Series, St. Louis, MO  
Title: "Mechanics and Mechanisms of Damage and  
Failure in Fiber Composite Materials" (Aug. 27, 1986)
- DuPont de Nemours Co. - Experimental Station, Wilmington, DE  
Title: "Anelastic Creep Deformation and Rupture in  
Thermoplastic-Matrix Fiber Composite Materials" (Sept. 19, 1986)
- DuPont de Nemours Co. - Experimental Station, Wilmington, DE  
Title: "Design Applications - Buckling, Postbuckling,  
and Delamination Stability Considerations in  
Composite Structural Design" (Sept. 19, 1986)
- AMOCO Corporate Research Center, Materials Science Seminar  
Series, Naperville, IL  
Title: "High Temperature Creep Deformation and Fracture  
of Advanced Thermoplastic-Matrix Fiber Composite  
Materials" (Sept. 29, 1986)
- ASTM Symposium on Test Methods and Design Allowables for  
Fiber Composites, Phoenix, AZ  
Title: "Determination of Shear Constitutive Properties of  
Fiber Composite Materials: Critical Analysis and  
Experiment" (Nov. 3-4, 1986)

- ASME 1986 Winter Annual Meeting, Symposium on Advances in Composite Materials and Structures, Anaheim, CA  
 Title: "Structural and Material Instability of Unidirectional Composites Subjected to Shear and Compression" (Dec. 10-12, 1986)
- ASME 1986 Winter Annual Meeting, Symposium on Advances in Composite Materials and Structures, Anaheim, CA  
 Title: "Postbuckling and Delamination Growth in Fiber Composite Laminates" (Dec. 10-12, 1986)
- U.S. Army Materials Technology Laboratory, Watertown, MA  
 Title: "Research at the National Center for Composite Materials Research" (Jan. 21, 1987)
- 4th DoD/NASA/Industry Review of High-Temperature Thermoplastic-Matrix Composites, San Diego, CA  
 Title: "Overview of the National Center for Composite Materials Research"  
 Title: "Anelastic Deformation and Fracture of Thermoplastic-Matrix Composites at Elevated Temperatures" (March 9, 1987)
- Naval Air Development Center, Warminster, PA  
 Title: "Composite Materials and Structures Research at the National Center for Composite Materials Research" (March 10, 1987)
- ONR/DARPA Workshop on Interface Science, Leesburg, VA  
 Title: "Composites Interphase/Interface-Mechanics Aspects" (March 11, 1987)
- ALCOA Technical Center, ALCOA, Alcoa Center, PA  
 ALCOA Laboratories Technical Seminar Series,  
 Title: "Compressive Failure in Fiber Composite Materials" (March 20, 1987)
- David Taylor Naval Research and Development Center, Caderock, MD  
 Title: "Materials, Structural and Damage Instabilities of Fiber Composite Materials" (May 22, 1987)
- ONR University Research Initiative Programs Review, Washington, DC  
 Title: "Research at the National Center for Composite Materials Research" (June 18, 1987)
- SDIO/IST Workshop on High-Temperature Metal-Matrix and Ceramic-Matrix Composites, Woods Hole, MA  
 Title: "High-Temperature Mechanics and Materials Science Studies on Metal-Matrix and Ceramic-Matrix Composites" (June 23-25, 1987)
- 1987 Annual National Meeting of Society for Advancement of Materials and Processing Engineering, Washington DC  
 Title: "Micromechanics of Fracture in Structural Adhesive Joints" (June 29-30, 1987)

- IUTAM/ICM Symposium on Yielding, Damage and Failure of Anisotropic Solids, Grenoble, France  
 Title: "Material, Structural and Damage Instabilities and Their Interactions in Strongly Anisotropic, Fiber Composites" (Aug. 24-28, 1987)
- 1987 ASM International Conference on Advanced Composites, Detroit, MI  
 Title: "Two-Dimensional Stress Analysis of Bolted Composite Joints"  
 Title: "Analytical Representation and Anisotropic Behavior of Viscoelastic Data for Advanced Composite Materials" (Sept. 15-17, 1987)
- ONR Workshop on Advanced Computational Mechanics, University of California at Santa Barbara, Santa Barbara, CA  
 Title: "Computational Mechanics for Fiber Composite Materials and Structures" (Sept. 29 - Oct. 1, 1987)
- The 12th DoD/NASA Mechanics of Composites Review Meeting, Bal Harbour, FL  
 Title: "Elevated-Temperature Deformation and Failure of Thermoplastic-Matrix Composites" (Oct. 16-17, 1987)
- The First Annual Review of the National Center for Composite Materials Research, University of Illinois at Urbana-Champaign, Urbana, IL  
 Title: "Advanced Computational Mechanics for Fiber Composite Materials and Structures" (Nov. 9-10, 1987)
- DuPont Experimental Station, DuPont de Nemours Co., Wilmington, DE  
 Title: "Anelastic Deformation and Fracture of Thermoplastic-Matrix Composites"  
 Title: "High-Temperature Creep Buckling Failure of Thermoplastic-Matrix Composites" (Nov. 20, 1987)
- Chrysler Engineering Center, The Chrysler Corporation, Detroit, MI  
 Title: "Advanced Metal-Matrix Composites for Automotive Engine Structures and Components" (Dec. 4, 1987)
- 1987 ASME Winter Annual Meeting, Boston, MA  
 Session AM - 2C, Symposium on Applied Mechanics Problems in Composites Manufacturing and Processing  
 Title: "Viscoelastic Analysis of Post-Curing Processing Stresses in Advanced Composites" (Dec. 14, 1987)
- 1987 ASME Winter Annual Meeting, Boston, MA  
 Session AM - 8B, Symposium on Behavior of Composites in Severe Thermal Environment  
 Title: "Viscoelastic Shear Behavior of Thermoplastic-Matrix Composites at Elevated Temperatures" (Dec. 15, 1987)
- Allison Gas Turbine Engineering Center, General Motors Corp.,

- Indianapolis, IN  
 Title: "High-Temperature Fatigue and Fracture of  
 SCS6/Ti-6AL-4V Composites" (Dec. 21, 1987)
- DARPA Workshop on Advanced Metal-Matrix and Ceramic-  
 Matrix Composites, Santa Barbara, CA  
 Title: "High-Temperature Mechanics of Advanced Metal-  
 Matrix and Ceramic-Matrix Composites" (Jan. 6-15, 1988)
- Southwest Mechanics Lectures Series given at  
 University of Oklahoma (Feb. 15, 1988)  
 University of Texas (Feb. 16, 1988)  
 Texas A & M University (Feb. 17, 1988)  
 Southwest Research Institute (Feb. 18, 1988)
- 1988 Annual Adhesion Science Society Meeting, Charleston, SC  
 Title: "Nonlinear Crack Growth and Fracture in Adhesively  
 Bonded Composite Structural Joints" (Feb. 22-24, 1988)
- 1988 Gas Research Institute Workshop on Fracture of Polymeric  
 Materials, Case-Western Reserve University, Cleveland, OH  
 Title: "Theory and Experiment on Creep Crack Growth  
 in Polyethylene Materials" (March 17,  
 1988)
- Keynote Speaker at the Seventh International Conference of  
 Vehicle Structural Mechanics, Detroit, MI  
 Title: "Challenges in the Analysis and Design on Composite  
 Materials and Structures for the Automotive Industry" (April 11,  
 1988)
- Ford Motor Scientific Research Laboratories, Dearborn, MI  
 Title: "Composite Materials and Structures Research for  
 Automotive Propulsion and Structures" (April 12, 1988)
- Phillips Petroleum R & D Center, Distinguished Lecturer,  
 Materials Science Seminar Series, Bartlesville, OK  
 Title: "Elevated-Temperature Deformation and Failure of  
 High-Performance Thermoplastic Composites" (April 13, 1988)
- University of Maryland, Aerospace Engineering Department  
 Seminar, College Park, MD  
 Title: "The Mechanics of Delamination in Composite  
 Materials" (April 15, 1988)
- 29th AIAA/ASME/ASCE/AHS Structures, Structural Dynamics  
 and Materials Conference, Williamsburg, VA  
 Title: "A New 3D Multilayered Hybrid Element and Its  
 Applications to Fiber Composite Laminate Plate  
 and Shell Buckling Problems"  
 Title: "An Analysis of Delamination in Composite Laminates  
 under Bending" (April 18-19, 1988)
- Shell Development Co. Westhollow Research Center, Houston, TX  
 Materials Science and Engineering Seminar Series,  
 Title: "Elevated-Temperature Creep and Creep Fracture  
 of Thermoplastic Matrix Composites" (April 27, 1988)
- National Center for Composite Materials Research Workshop on

- Mechanics and Design of Composite Materials, Urbana, IL  
 Title: "Mechanics of Fiber Composite Laminates"  
 (May 23-25, 1988)
- SDIO/IST Workshop on Metal and Ceramic Matrix Composites,  
 Woods Hole, MA  
 Title: "High-Temperature Mechanics and Thermomechanical  
 Behavior of Metal-Matrix and Ceramic-Matrix  
 Composites" (June 13-14,  
 1988)
- California Institute of Technology, Department of Aeronautics  
 Seminar, Pasadena, CA  
 Title: "Challenges in Research on Aerospace Composite  
 Materials and Structures" (June 17, 1988)
- 1988 Joint ASME Applied Mechanics and Engineering Science  
 Conference, University of California, Berkeley, CA  
 (1) Symposium on Mechanics of Composite Materials,  
 Session 1 - Mechanics of Heterogeneous Media  
 Title: "Thermoelastic Constitutive Equations of Whisker  
 Reinforced Ceramic Composites Subjected to  
 Large-Temperature Changes"  
 (2) Symposium on Constitutive Equations and Life  
 Prediction for High-Temperature Applications,  
 Session 1 - Composites  
 Title: "High-Temperature Inelastic Behavior of Metal-  
 Matrix Composites, Part I - Experiments"  
 Title: "High-Temperature Inelastic Behavior of Metal-  
 Matrix Composites, Part II - Theoretical Modeling"  
 (3) Symposium on the Mechanics of Composite Materials,  
 Session 4 - Fracture of Composites  
 Title: "Nonlinear Fracture Mechanics of Fiber Composite  
 Materials" (June 20-22, 1988)
- The 4th Japan-U.S. Conference on Composite Materials, Washington, DC  
 Title: "Elevated-Temperature Transverse Creep of FP/A1-2Li  
 Metal-Matrix Composite"  
 Title: Compressive Fatigue Damage and Associated Property  
 Changes of Fiber Reinforced Aluminum Matrix  
 Composite"  
 Title: "High-Temperature Creep Buckling of Thermoplastic  
 Matrix Fiber Composites under Biaxial Loading" (June 27-29, 1988)
- 1988 American Chemical Society Annual Meeting, Los Angeles, CA  
 Title: "Anelastic Deformation and Fracture of a Thermo-  
 plastic Matrix Composite" (Aug. 26-29, 1988)
- The 2nd Annual Review of the National Center for Composite  
 Materials Research (NCCMR), Urbana, IL  
 Title: "The National Center for Composite Materials  
 Research - A Status Report"  
 Title: Research on Mechanics of Composite Materials and  
 Structures at NCCMR - An Overview"

- Title: "Thick-Section Composite Mechanics and Structures" (Oct. 17-19, 1988)  
 University of Texas at Austin, Aerospace Engineering Department,  
 Structural Mechanics Colloquia, Austin, TX
- Title: "Mechanics of Compressive Failure in Fiber Composites" (Nov. 3, 1988)  
 U.S. Air Force Materials Laboratory Workshop on Metal-Matrix  
 Composites (MMC) Modeling and Analysis, Orlando, FL
- Title: "High-Temperature Mechanics Modeling and Analyses  
 of Metal-Matrix Composite Materials" (Nov. 17-18,  
 1988)  
 State University of New York at Stony Brook, Department of  
 Mechanical Engineering Colloquia, Stony Brook, NY
- Title: "Coupled Material Damage and Structural Instability  
 of Fiber Composites" (Nov. 21, 1988)  
 1988 ASME Winter Annual Meeting, Symposium on High-Temper-  
 ature Composites, Session AM-6C Thermoplastic Matrix  
 Composites, Chicago, IL
- Title: "Elevated Temperature Transverse Fracture of  
 Thermoplastic Matrix Composite Materials" (Nov. 27 - Dec. 2, 1988)  
 DuPont Experimental Station, Wilmington, DE
- Title: "An Overview of Research at the National Center  
 for Composite Materials Research (NCCMR)"  
 Title: "Thick-Section Composite Mechanics and Structures" (Dec. 2, 1988)  
 University of Colorado, Mechanical Engineering Department  
 Seminar Series, Boulder, CO
- Title: "The Mechanics of Delamination in Fiber Composite  
 Laminates" (Dec. 9, 1988)  
 DARPA Workshop on Advanced Composite Materials and Structures  
 for Deep Submersibles, Reston, VA
- Title: "Fundamentals of Thick-Section Composite Materials  
 and Structures" (Dec. 13-14, 1988)  
 Gordon Research Conference on Composite Materials, Ventura, CA
- Title: "High-Temperature Deformation and Crack Growth  
 in Thermoplastic-Matrix Composites" (Jan. 9-13, 1989)  
 Shell Development Co., Westhollow Research Center, Houston, TX
- Title: "Compressive Failure Mechanisms and Micromechanics  
 of Composite Materials" (Jan. 10, 1991)  
 ASME Summer Annual Conference, Symposium on Mechanics of  
 Composite Materials at Cryogenic and Elevated Temper-  
 atures, Columbus, OH
- Title: "High-Temperature Mechanics of Fiber Composite  
 Materials" (June 17, 1991)  
 8th International Conference on Composite Materials (ICCM VIII),  
 Honolulu, HI
- Title: "Effect of Shear Nonlinearity on Buckling and Post  
 Buckling Optimization of Fiber Composite Laminate  
 Shells" (July 14-18, 1991)  
 AMOCO Chemical Co. Research Center, Naperville, IL
- Title: "Durability and Life Prediction of Xycon Hybrid

- Matrix Composite Materials” (Aug. 29, 1991)  
 DuPont Experimental Station, Wilmington, DE  
 Title: “High-Temperature Thermomechanics and Thermo-  
 mechanical Behavior of Fiber Composites” (Sept. 20, 1991)  
 American Society for Composites, 6th Annual Technical Conference,  
 Troy, NY  
 Title: “Biaxial Cyclic Fatigue Crack Growth in Thermoplastic  
 Composite Materials” (Oct. 7-8,  
 1991)  
 Workshop on Composite Materials for Offshore Structures and  
 Petroleum Production Engineering, Houston, TX  
 Title: “Composite Materials and Structures for Deep  
 Submersibles” (Oct. 14-15, 1991)  
 IUTAM Symposium on Local Mechanics Concepts for Composite  
 Materials, Blacksburg, VA  
 Title: “Effect of Nonlinear Shear on Delamination Energy  
 Release Rates in Fiber Composite Laminates” (Oct. 28-30, 1991)  
 Texas A & M University, Joint Mechanical Engineering Department  
 and Center for Composites Materials Seminar, College  
 Station, TX  
 Title: “High-Temperature Thermomechanical Behavior and  
 Mechanics of Advanced Composite Materials” (Nov. 14, 1991)  
 Exxon Production Research Company, Distinguished Lecture  
 Series, Houston, TX  
 Title: “Micromechanics of Composite Heterogeneous  
 Materials” (Jan. 14, 1992)  
 Gordon Research Conference on Composites, Ventura, CA  
 Title: “Advanced Composite Materials for Petroleum Off-  
 shore Exploration and Production Operations” (Jan. 10-14, 1994)  
 1994 ASME Offshore Mechanics and Arctic Engineering Con-  
 ference, Houston, TX  
 Title: “Recent Development of Composite Materials for  
 Petroleum Offshore E & P Operations” (March 1-3, 1994)  
 Exxon Research and Engineering Company, Materials Science  
 Lecture Series, Anandale, NJ  
 Title: “High-Temperature Aging, Oxidation and Creep of  
 Polymers and Polymeric Composites” (Oct. 27, 1994)  
 International Conference on Offshore Composites Applications  
 for Petroleum E & P Operations, Aberdeen Scotland, U.K.  
 Title: “Recent Developments of Advanced Composites for  
 Offshore Petroleum E & P in the United States” (Dec. 7-8, 1994)
- University of Delaware Mechanical Engineering Department Seminar Series, Newark,  
 DE, March 10, 1995.  
 Title: “*Multiaxial Damage and Failure of Fiber Composite Tubular Subjected to  
 Combined Internal Pressure, Axial, Torsional and Bending Loading.*”
- ASTM 6th Conference on Composite Materials Design, Denver, CO, May 16-17, 1995.

Title: *“Life Prediction Methodology Development for Fiber Composite Tubular under Combined Cyclic Axial loading and Internal Pressure.”*

Special Plenary Lecture, International Conference on Durability Analysis of Composite Systems, Brussels, Belgium, July 16-21, 1995.

Title: *“High-Temperature Durability of Carbon Fiber/ Polyimide Matrix Composites: Thermal Oxidation, Chemical and Physical Aging, and Thermomechanical Creep and Damage.”*

US Air Force Materials Research Laboratories, Wright-Patterson AFB, OH, July 26-27, 1995.

Title: *“High-Temperature Mechanics of Polymer Composites.”*  
*“3D Anisotropic Elasticity Solutions for Composite Laminates with Cutouts.”*

NASA Langley Research Center, Materials Division Seminar Series, Hampton, VA, October 25, 1995.

Title: *“High-Temperature Durability and Damage Tolerance of Carbon Fiber Polyimide Matrix Composites.”*

Washington State University Department of Mechanical Engineering Seminar Series, Pullman, WA, February, 1996

Title: *“High-Temperature Mechanics and Thermomechanical Behavior of Polymer Composites.”*

Texas A & M University, Offshore Technology Center, College Station, TX, May 3, 1996.

Title: *“Long-Term Durability of Offshore Composites.”*

National Institute of Standards and Technology Symposium on Manufacturing Large Composite Structures, Ann Arbor, MI, April 16-17, 1996.

Title: *“Composite Production Risers.”*  
*“Spoolable Composite Tubing.”*  
*“Composite Drill Pipe.”*

DoE Idaho National Engineering Laboratory Colloquia, Idaho Fall, ID, September 19, 1996.

Title: *“Multiaxial Fatigue Damage and Failure of Large Composite Structures.”*

American Petroleum Institute, Houston, TX, October 17, 1996.

Title: *“Long-Term Multiaxial Failure Strength of Fiber Composite Tubing.”*

ABB International Workshop on Composites Offshore, Houston, TX, December 2, 1996.

Title: *“Recent Developments of Composites Technology for Deepwater Offshore Operations.”*

Keynote Lecture, The 3rd International Conference on Materials Engineering for Resources, Akita, Japan, October 26-28, 1998

Title: *“Composite Materials for Offshore Petroleum Exploration and Production.”*

Keynote Lecture, The 22nd National Conference on Theoretical and Applied Mechanics, Tainan, Taiwan, China, December 19-20, 1998;

Title: “*High-Temperature Mechanics and Thermomechanical Behavior of Polymer Matrix Composites.*”

Plenary Lecture, U.S. Department of Commerce NIST Advanced Technology Program Workshop on Composites in Civil Applications, Gaithersburg, MD, June 17-18, 1998;

Title: “*Advanced Design Technology and Reliability Engineering for Composite Structures in Offshore E & P.*”

Keynote Lecture, 1998 SACMA Fall National Conference, San Antonio, TX, October 20-21, 1998;

Title: “*Opportunities for Advanced Composites in Offshore Oil and Gas Exploration and Production.*”

1998 Offshore Technology Conference, Houston, TX, May 4 - 7, 1998;

Title: “*Composite Production Risers - Manufacturing Development and Qualification Test.*”

1998 Offshore Technology Conference, Houston, TX, May 4 - 7, 1998;

Title: “*Composite Production Riser Dynamics and Its Effects on Tensioners, Stress Joints and Size of Deepwater Tension Leg Platforms.*”

1998 Offshore Technology Conference, Houston, TX, May 4 - 7, 1998;

Title: “*Composite Production Riser Reliability Assessment: The Influence on Probabilistic Fiber Composite Strength.*”

1998 Offshore Technology Conference, Houston, TX, May 4 - 7, 1998;

Title: “*Design and Testing of Threaded Fiber Composite Joints.*”

Owens Corning Science and Technology Center, Granville, OH, February 26, 1999.

Title: “*Curing-Reaction Induced Residual Stresses in Thick-Wall Hybrid Cylindrical Composite Laminate Shells.*”

University Houston, Mechanical Engineering Department Seminar Series, Houston, TX, March 11, 1999.

Title: “*High-Temperature Mechanics and Thermomechanical Behavior of Polymeric Matrix Composite Materials.*”

US MMS/CEAC Workshop on Composites Offshore, New Orleans, LA, April 21, 1999.

Title: “*Reliability Assessment and Risk Analysis of Offshore Composite Structures.*”

EEX Corporation Offshore Engineering Department, Houston, TX, April 1, 1999.

Title: “*Advanced Composite Materials and Structures for Deepwater Offshore E & P Operations.*”

The 1999 Offshore Technology Conference, Houston, TX, May 3-8, 1999.

Title: *“Advanced Design Methodology for Deepwater Synthetic Moorings.”*

Toray Industries Research and Technology Center, Tokyo, Japan, June 7, 1999.

Title: *“Advanced Composite Materials for Offshore Exploration and Production Operations.”*

Smith Fiberglass Engineering Center, Little Rock, AK.

Title: *“Leakage Failure Prediction Methodologies for High Pressure FRP Pipe.”*

ASME OMAE 18th International Conference on Offshore Mechanics and Arctic Engineering, St. John’s, Canada, July 12, 1999.

Title: *“Long-Term Cyclic Fatigue Strength Prediction Methodology for Fiber Composite Laminates under Multiaxial Loading.”*

Elf Atochem R & D Center, King of Prussia, PA, August 19, 1999.

Title: *“Elasto-Plastic Collapse Modeling of Thermoplastic Polymer Liners in Confined Conditions.”*

Exxon Production Research Company Offshore Engineering Department, August 27, 1999.

Title: *“CEAC Programs on Advanced Composite Materials and Structures for Deepwater Production Operations.”*

CEAC Materials and Design Engineering Workshop, Houston, TX, August 24, 1999.

Title: *“CEAC Program on Offshore Composite Materials and Design Engineering.”*

Saudi Aramco Engineering R & D Center, Dhahran, Saudi Arabia, September 21, 1999.

Title: *“Light-Weight, Corrosion-Resistant Composite Materials for petroleum Exploration and Production Systems.”*

NACE Corrosion 2000 Conference, Orlando, FL, April, 2000.

Title: *“Effect of Tightness on Thermoplastic Polymer Liner Collapse Resistance.”*

Toray Composites America, Toray Composites Science and Technology Seminar, Mirayama, Japan, May 17, 2000.

Title: *“Advance Fiber Composites for Offshore Deepwater production Systems.”*

U.S. Department of Energy, Office of Fossil Energy Program, OTRS Workshop Series: Offshore Technology Roadmap for the Ultra-Deepwater Gulf of Mexico, New Orleans, LA, August 3, 2000.

Title: *“Advanced Composite Materials for Deepwater Offshore Exploration and Production Operations.”*

U.S. Minerals Management Service, MMS Deepwater Technology Seminar Series, August 16, 2000.

Title: *“Composite Risers in Deepwater Operations: Reliability and Vortex-Induced Vibrations (VIV).”*

ENS Symposium on Recent Advances in Continuum Damage Mechanics of Composite Materials, Cachan, France, September 22-24, 2000.  
Title: *High-Temperature Mechanics and Thermomechanical Behavior of Polymer-Matrix Composites with Oxidation, Aging and Damage.*

Ecole Normale Supérieure de Cachan/Université Pierre & Marie Curie (Paris 6)/CNRS, Ecole Thématique: Damage Mechanics Of Materials and Structures, Cachan, France, September 25-26, 2000.  
Title: “*Coupling Damage Mechanics with Chemistry.*”

Elf Atochem, Thermoplastic Polymer Science and Engineering Seminar, King of Prussia, PA, October 5, 2000.  
Title: “*Nonlinear Elasto-Plastic Collapse Modeling of Plasticized Thermoplastic Polymers.*”

APEC Workshop on Assessing and Maintaining the Integrity of Existing Offshore Oil and Gas Facilities, Beijing, China, October 9-11, 2000.  
Title: “*Advanced Composites for Long-Term Structural Integrity and Repair of Offshore Facilities.*”

Offshore Technology Center, Texas A & M University and University of Texas-Austin, OTRC Honors Award Lecture, Houston, TX, November 1, 2000.  
Title: “*Critical Research Issues, Challenges and Perspectives for Offshore Composite Materials and Structures.*”

Atofina Elf Symposium on Pipeline and Downhole Innovations for the Oil and Gas Industry, Calgary, Canada, April 4, 2001;  
Title: “*Nonlinear Plastic Collapse Modeling of Thermoplastic Liners.*”

The 9<sup>th</sup> NACE International Middle East Corrosion Conference, NACE International, Bahrain, February 14, 2001;  
Title: “*Recent Advances in Composite Materials for Petroleum Exploration and Production.*” (Invited Keynote Lecturer).

Aramco, Advanced Materials and Corrosion Technology Annual Colloquium, Dhahran, Saudi Arabia, February 17, 2001.  
Title: “*Leakage Resistance and Structural Integrity of Steel Strip Laminate Composite Pipe and its Joint under Combined Axial Loading, Internal Pressure and Makeup Turns.*”

U.S. Minerals Management Service, Deepwater Technology Seminar Series, New Orleans, LA, May 22, 2001.  
Title: “*Reliability Analysis and Risk Assessment of Deepwater Composite Risers.*”

Toray Industries, Composites Science and Technology Seminar Series, Tokyo, Japan, March 12, 2001.

Title: “*Advanced Composite Materials and Structures for Petroleum Exploration and Production Operations.*”

Chevron Petroleum Technology Center, Annual Technology Review, San Ramon, CA, June 13-14, 2001.

Title: “*Vortex-Induced Vibrations (VIV) of Composite Risers: Effects of Material Systems and Composite Laminate Lay-up.*”

Institute of Aerospace Studies, University of Toronto, Graduate Seminar, Toronto, Canada, July 30, 2001.

Title: “*Long-Term High-Temperature Viscoelastic Creep in Carbon/Polyimide Composites with Chemical and Physical Aging.*”

DoE Fossil Energy Program, Drilling, Completion and Stimulation Technology (DCST) Review, Houston, TX, November 13, 2001.

Title: “*Durability and Environmental Effects of Composite Materials for Petroleum Exploration.*”

American Bureau of Shipping (ABS), *Two-Day Short Course*; Course Director and Lecturer, Houston, TX; December 5 and 6, 2002.

Title: *Introduction to Composite Materials, and Their Applications to Offshore Engineering and Ship Structures.*

Symposium on Viscoelasticity in Composites, *The 14<sup>th</sup> U.S. National Congress of Theoretical and Applied Mechanics*, Blacksburg, VA, June 25, 2002.

Title: *High-Temperature Mechanics of Thermal Oxidation, Degradation and Damage in Polymer-Matrix Composites (Invited Paper.)*

Symposium on Time Dependent Failure Phenomena, *The 14<sup>th</sup> U.S. National Congress of Theoretical and Applied Mechanics*, Blacksburg, VA, June 26, 2002.

Title: *Long-Term Reliability Analysis of Fiber Composite Structures with Applications to Deepwater Offshore Engineering (Invited paper).*

Symposium on Mechanics of Fibrous Composites, *The 14<sup>th</sup> U.S. National Congress of Theoretical and Applied Mechanics*, Blacksburg, VA, June 25, 2002.

Title: *Vortex-Induced Vibrations of Deepwater Composite Risers (Invited Paper).*

The 10<sup>th</sup> U.S. – Japan Conference on Composite Materials, Stanford University, Stanford, CA, September 18, 2002.

Title: *Advanced Composites for Deepwater Offshore Exploration and Production Operations – Past, Present and Future (Keynote Lecture.)*

Ameron International- Materials Seminar, January 17, 2002; Houston, TX.

Title: *High Temperature Failure Envelopes and Design Safety Factors for SSL Composite Laminates under Combined Axial Loading and Internal Pressure.*

ABS Distinguished Lecture Series; May 30, 2002, Houston, TX.

Title: *Advanced Composites Technology for Offshore Engineering and Ship Structures: Past, Present and Future.”*

The 18<sup>th</sup> American Composite Society Annual Meeting, October 19-22, 2003, Gainesville, FL.

Title: *High-Temperature Mechanics Modeling and Experiments of Thermal Oxidation, Degradation and Damage Evolution in Carbon Fiber/Polyimide Composites, (Invited paper).*

DARPA/US Air Force Research Laboratories High-Temperature Polymer Matrix Composites (HTPMC) Durability Workshop, February 2-3, 2004, Sacramento, CA.

Title: *High-Temperature Durability of Carbon Fiber /Polyimide Composites, (Invited Paper).*

National Institute of Justice Review Meeting, US Department of Justice, March 17, 2004.

Title: *Ballistic-Resistance Materials and Penetration Mechanics of Light Weight Armor*

2004 ASME International Mechanical Engineering Congress, November 13-19, 2004, Anaheim, CA.

Title: *Computational Micromechanics for High-Temperature Constitutive Equations of Polymer Matrix Composites with oxidation Reaction, Damage and Degradation (Invited paper)*

National Institute of Standards and Technology Advanced Technology Program, January 8<sup>th</sup>, 2004, Gaithersburg, MD.

Title: *Damage Evolution and Failure Prediction of Steel-Strip Laminate Composites*

National Materials Advisory Board, National Academy of Sciences, April 5, 2004, Washington, D.C.

Title: *Advanced Composite Materials for Deepwater Offshore Operations*

ChevronTexaco Research and Technology Company, June 22, 2004, San Ramon, CA.

Title: *Long-Term Multiaxial Degradation and Life Prediction of Advanced Composites in Seawater Environment*

Total Chemicals, Technology Center Seminar Series, July 21, 2004, Houston, TX.

Title: *Continuum Damage Mechanics (CDM) Approach to Craze Damage Development and Plastic Deformation in High-Impact Polystyrene Polymers*

Dow Chemicals Research and Development Center, October 28, 2004, Houston, TX.

Title: *Advanced Composites for Offshore Wind Energy Production*

GE Energy, December 9, 2004, Houston, TX.

Title: *Failure Prediction and Reliability Analysis of Advanced Composites for High-Performance Turbine Engines*

*The 4<sup>th</sup> International Conference on Composite Materials for Offshore Operations, October 4-6, 2005. "Long-Term Multiaxial Degradation and Failure of Advanced Fiber Composites in Saltwater Environment," S. S. Wang, X. Chen and E. Gokdag, (Invited Paper).*

*The 4<sup>th</sup> International Conference on Composite Materials for Offshore Operations, October 4-6, 2005. "Effect of Saltwater on Multiaxial Cyclic Fatigue of Carbon Fiber/Epoxy Composite Materials", S. S. Wang and D.A. Monaghan (Invited Paper).*

*The 4<sup>th</sup> International Conference on Composite Materials for Offshore Operations, October 4-6, 2005. "Failure Modes, Strength Envelopes and Safety Factors for Allowable Stress Design of Steel-Strip Laminate Composite Pipe at Room and Elevated Temperatures" S. S. Wang and X. Chen (Invited Paper).*

*The 4<sup>th</sup> International Conference on Composite Materials for Offshore Operations, October 4-6, 2005. "Long-Term Reliability Analysis and Risk Assessment of Ultra-Deepwater Composite Risers", X. Chen and S. S. Wang (Invited Paper).*

*The 4<sup>th</sup> International Conference on Composite Materials for Offshore Operations, October 4-6, 2005. "Ultra-Deepwater Composite Riser Structure-Fluid Interaction with Vortex-Induced Vibration," T. P. Yu and S. S. Wang (Invited Paper).*

*2005 TREIA Conference, Forum on Offshore Wind Energy, November 15, 2005. "Offshore Wind Energy Technology: Challenges and Future Development" S. S. Wang (Invited Paper).*

U.S. Department of Energy, Washington, D.C., "Research on Offshore Wind Energy Production Technology", March 8, 2005.

Total Chemicals Technology Center, Houston, "Damage Mechanics for Crazing Development and Plasticity in High Impact Polystyrene", April 22, 2005.

Texas General Land Office and State Energy Conservation Office, Austin, TX, "Development of Offshore Wind Energy along Texas Coast", June 23,, 2005.

National Institute of Standards and Technology, Gaithersburg, MD, "Ballistic Resistance and Penetration Mechanics of Soft Body Armor", July 19, 2005.

General Electric Power Systems, Houston, TX, "Accelerated Life Testing Methodology for Aero-Derivative Engines", August 4, 2005.

International Workshop on Fracture of Materials-Moving Forwards,  
*"A Thermodynamic Approach to Long-Term Deformation and Damage for Polymeric Materials in Hygrothermal Environment"*,  
Sydney, Australia, January 23, 2006 (Invited Paper).

9<sup>th</sup> International Congress on Fatigue,  
*"Multiaxial Cyclic Fatigue of Fiber Composites: Mechanism Based Fatigue Life Theory and Experiment"*,  
Atlanta, Georgia, May 15, 2006.

National Science Council Forum on Offshore Wind Energy,  
*"Offshore Wind Energy: An Overview"*,  
Taipei, Taiwan, October 23, 2006 [Plenary Lecture].

2006 Composites Asia Conference,  
*"Advanced Composites for Offshore Oil and Gas Exploration and Production Operations"*,  
Kuala Lumpur, Malaysia, November 15-16, 2006S. [Plenary Lecture.]

Texas General Land Office and State Energy Conservation Office,  
*“Offshore Wind Energy - Production Technology”*,  
Austin, TX, , March 31, 2006.

National Institute of Standards and Technology,  
*“Ballistic Material Resistance and Penetration Mechanics of Light Weight Body Armor”*  
Gaithersburg, MD, April 17, 2006.

Total Chemicals Technical Center,  
*“High-Temperature Plastic Deformation and Damage Mechanisms in High Impact Polystyrene”*,  
La Porte, TX, July, 13, 2006.

Total Chemicals Technical Center  
*“Plastic Yielding and Craze Morphology in ICP Copolymers”*,  
La Porte, TX, July 13, 2006,

FMC Subsea Technology Center  
*“Composite Umbilical Cables for Subsea Operations”*,  
Kongsberg, Norway, August 16, 2006.

DoE National Renewable Energy Laboratory  
*“Texas Offshore Wind Energy Consortium and Programs”*  
Golden, CO, August 29, 2006.

General Electric-Energy Technical Center,  
*“Accelerated Life Testing Methodology for Packaging Components of Aero-Derivative Gas Turbines”*,  
Houston, TX, September 29, 2006,

Texas General Land Office,  
*“Development of a National Large Wind Turbine Research and Test Facility”*,

Austin, TX, October 18, 2006.

S. S. Wang, "Offshore Wind Energy Technology and Research", Academic Sinica, Taipei, Taiwan, January 5, 2007. (Invited Lecture).

S. S. Wang, "Plastic Deformation and Craze Formation in High-Impact Polystyrene and IPC Copolymer", Total Chemical Technology Center, Houston, TX, February 28, 2008. (Invited Lecture).

S.S. Wang, "Dynamic Response and Vibration of VBV in Aero-derivative Gas Turbine Systems", GE Energy Technical Center, March 14, 2007. (Invited).

S. S. Wang, "Development of a National Large Wind Turbine Research and Test Facility", DoE National Renewal Energy Laboratory (NREL), Golden, CO, April 12, 2007.

S. S. Wang, "Development of a National Large Wind Turbine Test Facility in Texas", Texas ETF Commission, Austin, TX May 31, 2007. (Invited).

S. S. Wang, " Damage Mechanics for Multiaxial Fatigue of Fiber Composite Materials: Theory and Experiments", *Symposium on Mechanics of Time Dependent Composites, ASME Applied Mechanics and Materials Conference McMAT 2007*, University of Texas at Austin, Austin, TX, June 3-7, 2007. (Invited Lecture).

S. S. Wang, "Wind Energy Technology and Lone Star Wind Energy Alliance", The 71th Annual Meeting of Texas Society of Professional Engineers (TSPE), Houston, TX, June 14<sup>th</sup>, 2007. (Invited Keynote Lecture).

S. S. Wang, "Wind Energy", The Houston World Affairs Conference, Houston, TX, June 13, 2007. (Invited Keynote Speaker).

S. S. Wang, "Multiaxial Strength and Stiffness Degradation of Glass/Epoxy Composite", The 22<sup>nd</sup> Annual Technical Conference, American Society for Composites, University of Washington, Seattle, WA, September 17, 2007 (Invited Lecture).

S. S. Wang, "Offshore Wind Energy Production and Technology Challenges", National Institute of Technology and Standards, November 3, 2007. (Invited Lecture).

S. S. Wang, "Offshore Wind Energy and Large Wind Turbine Technology", BP Alternative Energy Conference, Houston and London, November 6, 2007. (Invited).