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- 220 C.T. Love, G. Xian and V.M. Karbhari, "Adhesion and Characterization of High Density Polyethylene/Elvaloy Blends for Hot Melt Coating of Steel," Proceedings of the American Society for Composites Twentieth Technical Conference, Philadelphia, PA, September 2005, 15 pp.
- 221 Q. Yang, L. Lee, D.A. Lumbard and V.M. Karbhari, "Durability Study of Hygro-Thermal Effects on Epoxy and Wet Layup Carbon/Epoxy Composites," Proceedings of the Caltrans Bridge Research Conference 2005, Sacramento, Oct. 31-Nov. 1, 2005, Paper 03-502, 8 pp. (Also Page 26 of the abstracts book).
- 222 C. Love, G. Xian and V.M. Karbhari, "Hot Melt Bonding Anti-Corrosion Coatings to Steel With Application for Rehabilitation," Proceedings of the Caltrans Bridge Research Conference 2005, Sacramento, Oct. 31-Nov. 1, 2005, Paper 03-503, 9 pp. (Also Page 27 of the abstracts book).
- 223 J. Delaney and V.M. Karbhari, "Determination of Defect Criticality and the Resulting Performance Effects of CFRP Strengthened RC Beams," Proceedings of the Caltrans Bridge Research Conference 2005, Sacramento, Oct. 31-Nov. 1, 2005, Paper 03-504, 9 pp. (Also Page 28 of the abstracts book).
- 224 P. Surathi and V.M. Karbhari, "Hygrothermal Effects on Durability and Moisture Kinetics of Fiber-Reinforced Polymer Composites," Proceedings of the Caltrans Bridge Research Conference 2005, Sacramento, Oct. 31-Nov. 1, 2005, Paper 03-505, 9 pp. (Also Page 29 of the abstracts book).
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- 226 L.S. Lee, V.M. Karbhari and C. Sikorsky, "Integrity and Effectiveness of Watson Wash Bridge Deck Rehabilitation Using CFRP Composites," Proceedings of the Caltrans Bridge Research Conference 2005, Sacramento, Oct. 31-Nov. 1, 2005, Paper 03-508, 8 pp. (Also Page 32 of the abstracts book).
- 227 K.K. Ghosh and V.M. Karbhari, "Progressive Damage and NDE of FRP Rehabilitation at Component and System Level," Proceedings of the Caltrans Bridge Research Conference 2005, Sacramento, Oct. 31-Nov. 1, 2005, Paper 03-510, 9 pp. (Also Page 34 of the abstracts book).
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- 229 S.A. Youakim and V.M. Karbhari, "Prestress Losses in Cast-In-Place Post-Tensioned Bridges: Analysis and Comparisons With Design Codes," Proceedings of the Caltrans Bridge Research Conference 2005, Sacramento, Oct. 31-Nov. 1, 2005, Paper 05-501, 10 pp. (Also Page 46 of the abstracts book).
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- 234 G. Xian and V.M. Karbhari, "DMTA Characterization of Moisture Aged Epoxy," Proceedings of SAMPE '06 (Volume 51 of SAMPE Conference Proceedings), Long Beach, Ca, April 30-May 4, 2006, 9 pp.
- 235 C.T. Love and V.M. Karbhari, "High Density Polyethylene/Reactive Ethylene Terpolymer Composites for Strengthening Steel Structures," Proceedings of SAMPE '06 (Volume 51 of SAMPE Conference Proceedings), Long Beach, Ca, April 30-May 4, 2006, 10 pp.
- 236 P.N. Clark and V.M. Karbhari, "Resin Degassing Effects on Air Solubility in Epoxy" Proceedings of SAMPE '06 (Volume 51 of SAMPE Conference Proceedings), Long Beach, Ca, April 30-May 4, 2006, 10 pp.
- 237 Mufti, A.A., Bakht, B., Banthia, N., Benmokrane, B., Desgagne, G., Eden, R., Erki, M-A., Karbhari, V., Kroman, J., Lai, D., Machida, A., Neale, K., Tadros and Taljsten, B., "New CHBDC Design Provisions for Fibre Reinforced Structures," Proceedings of the 2nd fib Congress, Naples, Italy, June 5-8, 2006,
- 238 X.P. Qing, Z. Wu, F-K. Chang, K. Ghosh, V. Karbhari and C. Sikorsky, "Monitoring the Disbond of Externally Bonded CFRP Composite Strips for Rehabilitation of Bridges," Proceedings of EWSHM '06, Granada, Spain, July 5-7, 2006, 7 pp.
- 239 K. Ghosh, H. Guan and V.M. Karbhari, "Assessment and NDE of FRP Rehabilitation of Bridge Deck Slabs at Systems Level," Proceedings of the 3rd International Conference on Bridge Maintenance, Safety, Management, Life-Cycle Performance and Cost, Porto, Portugal, July 16-19, 2006, 8pp (Also pages 995-996 in the book of abstracts)
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- 241 A.A. Mufti, B. Bakht, N. Banthia, B. Benmokrane, G. Desgagné, R. Eden, M.A. Erki, J. Kroman, D. Lai, K. Neale, G. Tadros, A. Machida, B. Täljsten, and V. Karbhari, "New CHBDC Provisions for Design of Fibre Reinforced Structures," Proceedings of the 7th International Conference on Short & Medium Span Bridges, Montreal, Canada, August 23-25, 2006.
- 242 A.A. Mufti, B. Bakht, N. Banthia, B. Benmokrane, G. Desgagné, R. Eden, M.A. Erki, J. Kroman, D. Lai, K. Neale, G. Tadros, A. Machida, B. Täljsten, and V. Karbhari, "CHBDC Design Provisions for Rehabilitation of Bridges With FRPs," Proceedings of the 7th International Conference on Short & Medium Span Bridges, Montreal, Canada, August 23-25, 2006.
- 243 R. Navada and V.M. Karbhari, "Environmental Sensitivity and Defect Criticality in FRP Bond to Concrete Through a Fracture Mechanics Approach," Proceedings of the 3rd International Conference on FRP Composites in Civil Engineering, Miami, FL, December 13-15, 2006, pp. 43-46.
- 244 R.A. Atadero and V.M. Karbhari, "Load and Resistance Factor Design for FRP Strengthening of Concrete Structures," Proceedings of the 3rd International Conference on FRP Composites in Civil Engineering, Miami, FL, December 13-15, 2006, pp. 255-258.

- 245 V.M. Karbhari, "From Replacement Components to the Development of Large-Scale Artificial Living Environments – Use of FRP for Intelligent Sustainable Infrastructure Systems" Proceedings of the International Conference on Recent Advances in Composite Materials, New Delhi, February 20-23, 2007, pp. 614-623.
- 246 V.M. Karbhari, C. Stachowski and L. Wu, "Combined Bending Stress and Hygrothermal Effects on Durability of E-Glass/Vinylester Composites," Proceedings of CDCC 2007, Quebec City, Canada, May 22-24, 2007, pp. 1-8.
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- 248 K. Ghosh, Q. Yang and V.M. Karbhari, "Comprehensive Durability Evaluation of FRP Systems Used in External Strengthening," Proceedings of CDCC 2007, Quebec City, Canada, May 22-24, 2007, pp. 251-258.
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- 250 S.L. Svetlik and V.M. Karbhari, "Extending Predictive Degradation Models to Hot, Humid Environments," Proceedings of SAMPE 2007, Baltimore, MD, June 3-7, 2007, 14 pp.
- 251 C.T. Love and V.M. Karbhari, "Interfacial Adhesion in MultiWalled Carbon Nanotube/Reactive Ethylene Terpolymer Composites," Proceedings of SAMPE 2007, Baltimore, MD, June 3-7, 2007, 5 pp.
- 252 A. Pridmore and V.M. Karbhari, "Reliability and Durability of Prefabricated FRP Deck Formwork Systems," Proceedings of SAMPE 2007, Baltimore, MD, June 3-7, 2007, 10 pp.
- 253 C.T. Love, G. Xian and V.M. Karbhari, "Wet Adhesion and Cathodic Disbondement in Thermoplastic Blend Coatings," Proceedings of SAMPE 2007, Baltimore, MD, June 3-7, 2007, 14 pp.
- 254 C.T. Love, A. Gapin and V.M. Karbhari, "Multi-Walled Carbon Nanotube/Reactive Thermoplastic Composites," Proceedings of Nanopolymer 2007, Berlin, Germany, June 12-13, 2007, Paper 15, 7 pp.
- 255 R.P. Maloney and V.M. Karbhari, "Degradation of Cellulose/Hemp Biocomposites Under Various Processing and Hydrothermal Environments," Proceedings of the 16th International Conference on Composite Materials, Kyoto, Japan, July 8-13, 2007, MoGM1-03, 5 pp. (Also Pg. 122 in the book of Abstracts)
- 256 K.K. Ghosh and V.M. Karbhari, "Progressive Failure and Rehabilitation of RC Deck Systems With Composites," Proceedings of the 16th International Conference on Composite Materials, Kyoto, Japan, July 8-13, 2007, WeGM1-03, 10 pp. (Also Pgs. 698-699 in the book of Abstracts)
- 257 S.L. Svetlik and V.M. Karbhari, "A Mechanical Analysis of E-Glass/Vinylester in Hot, Humid Environments," Proceedings of the 16th International Conference on Composite Materials, Kyoto, Japan, July 8-13, 2007, MoGM1-03, 7 pp. (Also Pgs. 700-701 in the book of Abstracts)
- 258 G. Hegemier, F. Seible, V. Karbhari, C. Lee, T. Rodriguez-Nikl, M. Oesterle, T. Hutchinson, K. Morrill and J. Crawford, "The Use of Fiber Reinforced Polymers to Mitigate Natural and Man-Made Hazards," Proceedings of the 8th International Symposium on Fiber-Reinforced Polymer Reinforcement for Concrete Structures, Patras, Greece, July 16-18, 2007, Paper K-2, 25 pp. (Also pp. 12-36 in the book of abstracts.)
- 259 J. Delaney and V.M. Karbhari, "Defect Criticality in FRP Strengthening," Proceedings of the 8th International Symposium on Fiber-Reinforced Polymer Reinforcement for Concrete Structures, Patras, Greece, July 16-18, 2007, Paper 3-20, 10 pp. (Also pp. 166-167 in the book of abstracts).

- 260 R.A. Walker and V.M. Karbhari, "Durability Based Design for FRP Rehabilitation of Concrete," Proceedings of the 8th International Symposium on Fiber-Reinforced Polymer Reinforcement for Concrete Structures, Patras, Greece, July 16-18, 2007, Paper 13-7, 10 pp. (Also pp. 532-533 in the book of abstracts).
- 261 A. Shirazi and V.M. Karbhari, "Quantifying Defects and Progression of Damage in FRP Rehabilitation of Concrete Through IR Thermography," Proceedings of the Asia-Pacific Conference on FRP in Structures, Hong Kong, December 12-14, 2007, pp. 605-610.
- 262 P. Wilcox, Q. Yang and V.M. Karbhari, "Durability of FRP Strengthened Systems," Proceedings of the Asia-Pacific Conference on FRP in Structures, Hong Kong, December 12-14, 2007, pp. 619-624
- 263 V.M. Karbhari, "FRP Structural Stay-in-Place Formwork as a Means of Rapid, Durable and Cost-Effective Construction and Rehabilitation," Proceedings of the International Conference & Exhibition of Reinforced Plastics (ICERP) 2008, Mumbai, India, February 7-9, 2008, Paper CP-b1-4, 8 pp.
- 264 V.M. Karbhari, A. Pridmore, L. Cheng and C. Sikorsky, "FRP Structural Stay-in-Place Formwork as a Means of Rapid, Durable and Cost-Effective Construction of Bridge Decks," Proceedings of the 2008 Accelerated Bridge Construction – Highway for Life Conference, Baltimore, MD, March 19-21, 2008, pp. 431-436.
- 265 C. Sikorsky, H. Guan and V.M. Karbhari, "Innovative Modular FRP Bridge Systems – Results of Monitoring After Over Five Years of Use," Proceedings of the 2008 Accelerated Bridge Construction – Highway for Life Conference, Baltimore, MD, March 19-21, 2008, pp. 437-442.
- 266 G. Brungraber and V.M. Karbhari, "Long-Term Integrity of Epoxy-Bonded Rebar Couplers," Proceedings of SAMPE '08, Long Beach, CA, May 18-22, 2008, 20 pp.
- 267 Q. Yang, V.M. Karbhari and C. Sikorsky, "Durability Study of Three Prefabricated Carbon/Epoxy Composites and their Respective Epoxy Adhesives Used for Bonding Them to Concrete," Proceedings of SAMPE '08, Long Beach, CA, May 18-22, 2008, 16 pp.
- 268 A. Pridmore and V.M. Karbhari, "Evaluation of Prefabricated FRP Structural Formwork Bridge Deck Systems," Proceedings of SAMPE '08, Long Beach, CA, May 18-22, 2008, 20 pp.

***TECHNICAL PRESENTATIONS (Including Invited, Keynote and Plenary Lectures)***

- Running Problem Sessions in the Sciences, University of Delaware, Center for Teaching Effectiveness, Annual Conference, Newark, DE, August 31, 1988.
- Running Problem Sessions in the Sciences and Engineering, University of Delaware, Center for Teaching Effectiveness, Annual Conference, Newark, DE, August 29, 1989.
- Scale Effects on Fracture and Damage Mechanisms in Composites, 1989, Center for Composite Materials, University-Industry Research Symposium, Newark, DE, September 21, 1989.
- Scale Effects in Fracture of Composites, University of Delaware, Department of Civil Engineering, Newark, DE, October 2, 1989.
- Running Review Sessions in Math and Engineering, (with M. Greenberg), University of Delaware, Annual Conference for Graduate Teaching Assistants, Newark, DE, August 27, 1990.
- Scale Effects in Composites, (with D.J. Wilkins), Center for Composite Materials, 1990 University-Industry Research Symposium, Newark, DE, September 13, 1990.
- The Scale Concept in Integrated Design for Composites, (with J.M. Henshaw and D.J. Wilkins), Center for Composite Materials, 1990 University-Industry Research Symposium, Newark, DE, September 13, 1990.
- Concurrent Engineering for Composites Manufacturing and Design, (with D.J. Wilkins), presented at the 10th Annual CCM Composites Workshop, Newark, DE, April 22-24, 1991.
- Introduction to Liquid Molding, presented at the 10th Annual CCM Composites Workshop, Newark, DE, April 22-24, 1991.
- Concurrent Engineering for Composites: Overcoming the Barriers, US Army/NSF Joint Symposium for the technology transfer of Concurrent Engineering Tools and Methodologies, Huntsville, AL, June 4-5, 1991, **INVITED PRESENTATION.**
- Decision Support Systems for the Concurrent Engineering of Composites, ASM/ESD Conference, Detroit, September 30-October 3, 1991.
- Effect of Preform Architecture and Injection Strategies on the Robustness of RTM Parts, ASM/ESD Conference, Detroit, September 20-October 3, 1991.
- Support Systems for Composites Product Development, 23rd International SAMPE Technical Conference, Lake Kiamesha, NY, October 1991.
- Effect of Fiber Architecture on Performance and Manufacturability of RTM Parts, 23rd International SAMPE Technical Conference, Lake Kiamesha, NY, October 1991.
- Strategies for Designing Multi-Element Preforms for RTM, 23rd International SAMPE Technical Conference, Lake Kiamesha, NY, October 1991.
- Influence of Microstructure on the Damage Mechanics of Composite Materials, Special Seminar on Mechanical Behavior of Materials, Massachusetts Institute of Technology, Boston, MA, December 2, 1991.
- The Total Quality Design (TQD) Approach to Concurrent Engineering, U.S. Army Chemical Research, Development and Engineering Center, Aberdeen Proving Ground, MD, February 19, 1992.
- Selecting Materials Processes and Shapes: Getting it Right the First Time, 37th International SAMPE Symposium, Anaheim, CA, March 9-12, 1992.
- The Role of Expert and Decision Support Systems in Composites Design and Manufacturing, CADCOMP '92, Newark, DE, May 13-15, 1992.
- Microcrack-Interaction Induced Toughening in Ceramics and Advanced Composites, CADCOMP '92, Newark, DE, May 13-15, 1992.
- Concurrent Engineering and Design for Composites, (with D.J. Wilkins), 1992 CCM Composites Workshop, Newark, DE, May 20, 1992.
- Introduction to Liquid Molding – Resin Transfer Molding, 1992 CCM Composites Workshop, Newark, DE, May 29, 1992.



- Microcrack-Interaction Toughening in Ceramics and CMCs, 6th ASCE Engineering Mechanics Conference, College Station, TX, May 1992.
- Determination of Interfacial Shear and Normal Stresses in Fiber Pull-out, 6th ASCE Engineering Mechanics Conference, College Station, TX, May 1992.
- V.M. Karbhari, D.A. Steenkamer and D.J. Wilkins, The Use of Expert and Decision Support Systems for the Facilitation of Rapid Decision Making in Composites Design and Manufacture, 6th International SAMPE Electronic Materials and Processes Conference, Baltimore, MD, June 23-25, 1992.
- The Use of Advanced Composites in Civil Engineering – Dreams or Reality?, Department of Applied Mechanics and Engineering Sciences, University of California, San Diego, (UCSD), January 22, 1993, **INVITED SEMINAR.**
- Total Quality Design – An Approach to Design Integration, US Army Chemical Research, Development and Engineering Center, Aberdeen Proving Grounds, MD, February 3, 1993.
- Civil Engineering (with J.S. McDermott), JTEC Workshop on Advanced Manufacturing Technology for Polymer Composite Structures in Japan, Arlington, VA, February 18, 1993.
- Manufacturing Science, JTEC Workshop on Advanced Manufacturing Technology for Polymer Composite Structures in Japan, Arlington, VA, February 18, 1993.
- Product and Process Development Methods, JTEC Workshop on Advanced Manufacturing Technology for Polymer Composite Structures in Japan, Arlington, VA, February 18, 1993.
- Findings of the JTEC Panel on Advanced Manufacturing Technology for Polymer Composite Structures in Japan, Polymers and Coatings Committee, 1993 SAE International Congress and Exposition, Detroit, MI, March 1, 1993, **INVITED TALK.**
- Effect of Preform Architecture on Flow and Processing in Resin Transfer Molding, 1993 SAE International Congress and Exposition, Detroit, MI, March 1, 1993.
- Impact Resistant Glass Fiber Architectures for Increased Energy Absorption and Structure Survivability through RTM, 1993 SAE International Congress and Exposition, Detroit, MI, March 1, 1993.
- Use of Waste Injection Molding Pellets as Aggregate in Concrete: A Preliminary Study of Viability, 1993 SAE International Congress and Exposition, Detroit, MI, March 1, 1993.
- Development of Composite Materials and Technology for Use in Bridge Structures, NSF Symposium on Practical Solutions for Bridge Strengthening and Rehabilitation, Des Moines, IA, April 5-6, 1993.
- A View of the Japanese Advanced Composites Industry Approach to Market Development, Operations Research Seminar, University of Delaware, Newark, DE, April 22, 1993.
- Composites: Materials and Applications in Civil Engineering, Oak Ridge National Laboratories, Oak Ridge, TN, May 4, 1993, **INVITED LECTURE.**
- Resin Transfer Molding, (with D.J. Steenkamer), 1993 CCM Composites Workshop, Newark, DE, May 18-20, 1993.
- Impact: Design, Materials, Damage, and NDL, (with K.V. Steiner and R.W. Rydin) 1993 CCM Composites Workshop, Newark, DE, May 18-20, 1993.
- Decision Support Systems, (with R. Pitchumani and D. Claar), 1993 CCM Composites Workshop, Newark, DE, May 18-20, 1993.
- Concurrent Engineering and Design, 1993 CCM Composites Workshop, Newark, DE, May 18-20, 1993.
- Composites in Construction, 1993 CCM Composites Workshop, Newark, DE, May 18-20, 1993.
- Composites: Materials and Applications in Civil Engineering Infrastructure, SAMPE Wilmington-Philadelphia Chapter, PA, May 20, 1993.
- Resin Transfer Molding and 3D Reinforced Composites, CRCAS Workshop, Melbourne, September 16-17, 1993, **PRINCIPLE LECTURER.**

- The Use of Composites for Civil Infrastructure, joint meeting of the Australian Composite Structures Society (ACSS) and the Society for the Advancement of Materials and Process Engineering (SAMPE), Melbourne, September 16, 1993, **INVITED TALK.**
- Resin Transfer Molding and 3D Reinforced Composites, CRCAS Workshop, Sydney, September 23-24, 1993, **PRINCIPLE LECTURER.**
- Effect of Sizings on Microscopic Flow Encountered in RTM Processing, 25th International SAMPE Technical Conference, Philadelphia, PA, October 1993.
- Civil Engineering Applications for Advanced Composites, Defense Conversion Workshop, El Segundo, CA, November 3-4, 1993, **INVITED TALK.**
- Influence of Preform Architecture on Progressive Crush and Post-Impact Behavior of a Stiffened Plate RTM Structure, 9th Annual ASM/ESD Advanced Composites Conference, Dearborn, MI, November 1993.
- Composites Issues and Activities in Infrastructure, Gordon Research Conference, Ventura, CA, January 10-14, 1994.
- Civil Engineering Applications for Advanced Composites, Composites, Composites Technology Center – CTC Cerritos College and GLCC, Cerritos, CA, January 21, 1994, **KEYNOTE SPEAKER.**
- Applications of Composites Materials to Civil Construction and Infrastructure Rehabilitation, Center for Advanced Technology for Large Structural Systems (ATLSS), Lehigh University, April 13, 1994, **INVITED SEMINAR.**
- A Global Overview of Composites for Infrastructure, 1994 CCM Composites Workshop, Newark, DE, May 10-12, 1994.
- Resin Transfer Molding, (with G. Palmese), 1994 CCM Composites Workshop, Newark, DE, May 10-12, 1994.
- Advanced Issues in Resin Transfer Molding, (with G. Palmese), 1994 CCM Composites Workshop, Newark, DE, May 10-12, 1994.
- Applications for Composites in Civil Infrastructure, (with S.G. Borleske, DuPont), The Second Annual Wilson Forum, San Diego, CA, April 18-19, 1994.
- Issues of Design and Durability for the Use of Composites in Civil Infrastructure, 1994 SEM Spring Conference, Baltimore, MD, June 6, 1994, **PLENARY LECTURE.**
- Strategies for the Use of Composite Wraps on Concrete Columns, Exploratory Workshop on Repair of Concrete Piers by ACM, Ministry of Transportation, Ontario, Toronto, Canada, September 17, 1994, **INVITED LECTURE.**
- Methods for Using Composites in Infrastructure Rehabilitation, Composite Materials for Civil Engineering Applications, 1994 BFRL Building Technology Symposia Series, National Institute of Standards and Technology, October 12, 1994, **INVITED LECTURE.**
- Flexural and Toughening Behavior of Cementitious Composites Reinforced by Waste Prepreg and Recycling Issues Thereof, 10th ASM/ESD Advanced Composites Conference and Exposition, Detroit, MI, November 1994.
- Effect of Sizings on Microscopic Flow Encountered in RTM Processing of S2-Glass Fibers, 10th ASM/ESD Advanced Composites Conference and Exposition, Detroit, MI, November 1994.
- Nonwovens as Reinforcement in Commercial and Infrastructure Composite Applications, IDEA '95 The International Nonwovens Conference and Exposition, Philadelphia, PA, April 27, 1995, **INVITED PRESENTATION.**
- Effect of Fabric Architecture on the Impact Response of RTM Composites: Use of Novel Metrics, 40th International SAMPE Symposium and Exhibition, Anaheim, CA, May 8-11, 1995.
- On the Use of a Modified Peel Test for Determination of Concrete-Composite Bond Durability, 40th International SAMPE Symposium and Exhibition, Anaheim, CA, May 8-11, 1995.

- Composites for Infrastructure Renewal – Issues and Concepts, A New World for Composites, Cerritos College, Norwalk, CA, September 13, 1995, **INVITED TALK.**
- Use of Fibers, Polymers and Composites in Infrastructure Renewal – Concepts, Materials and Manufacturing Issues, ASCE Technical Activities Committee on Emerging Materials in Civil Engineering, Milwaukee, WI, September 26, 1995.
- Characteristics of Adhesion Between Composites and Concrete as Related to Infrastructure Rehabilitation, 27th SAMPE International Technical Conference, Albuquerque, NM, October 12, 1995.
- Effect of Fiber Sizing on Processing and Performance of S2 Glass Composites, 27th SAMPE International Technical Conference, Albuquerque, NM, October 12, 1995.
- On the Use of Composites in Civil Infrastructure: Renewal and Rehabilitation, Mechanical and Aerospace Engineering Colloquium, San Diego State University, San Diego, Ca, November 30, 1995.
- Issues in Joining of Composites to Concrete – Rehabilitation and Retrofit, Composites '96, ASM Manufacturing and Tooling Conference, Anaheim, CA, January 24, 1996, **INVITED TALK.**
- Status and Concepts in Composite Bridge Deck Development, 4th Annual Wilson Forum, San Francisco, March 11, 1996.
- Processing of Composites Using Resin Transfer Molding and Resin Infusion Type Processes, 1996 Spring Seminar, ASM International, San Diego, March 21, 1996, **INVITED TALK.**
- Effect of Braid Architecture on the Progressive Crush of Composite Tubes, 41st International SAMPE Symposium, Anaheim, Ca, March 28, 1996.
- Civil Infrastructure and Composite Materials: Issues in Materials and Manufacturing, 41st International SAMPE Symposium, Anaheim, Ca, March 28, 1996.
- Fabrication and Testing of Fiber-Reinforced Composite Bridge Decks, 4th National Workshop on Bridge Research in Progress, Buffalo, NY, June 19, 1996.
- Effects of Sizings and Interphases on Processing and Performance of Composites: Issues for Large Structural Composites, Special Meeting of the Australian Composite Structures Society, Melbourne, Australia, June 24, 1996, **INVITED TALK.**
- Fiber Reinforced Composites in Civil Engineering and Infrastructure Applications, Cooperative Research Center for Aerospace Structures, Melbourne, Australia, June 25, 1996, **INVITED TALK.**
- Fiber Reinforced Composites and Civil Infrastructure – Towards the 21st Century, Institution of Engineers, Sydney, Australia, June 26, 1996, **INVITED LECTURE.**
- Fiber Reinforced Composites for Renewal of Civil Infrastructure in the 21st Century, 3rd International Conference on Composites Engineering, New Orleans, LA, July 26, 1996, **DISTINGUISHED LECTURE.**
- On the Use of Composites in Bridging, Research and Development Establishment, Dighi, India, August 30, 1996, **INVITED TALK.**
- On the Role of the Interphase in Polymer Matrix Composites, Polymer Composites Group, RD&E and Pune University, Pune, India, September 3, 1996, **INVITED TALK.**
- Large Scale Fiber Reinforced Structures for the 21st Century, Shimizu Institute of Technology, Tokyo, Japan, October 22, 1996, **INVITED SEMINAR.**
- On the Use of Fiber Reinforced Composites for Infrastructure Renewal – A Systems Approach, 1996 ASCE Annual Convention and 4th Materials Conference, Washington DC, November 12, 1996.
- Fiber Reinforced Composite Decks for Infrastructure Renewal – Results and Issues, International Composites Exposition, Nashville, TN, January 28, 1997.
- Durability Considerations of Composites for Seismic Retrofit, UDOT Workshop on Composites Retrofit Technology, Salt Lake City, UT, February 5, 1997.
- On the Use of Composites for Bridge Strengthening and Rehabilitation – Manufacturing and Durability, 2nd Symposium on Practical Solutions for Bridge Strengthening and Rehabilitation, Kansas City, KS, March 25, 1997.

- Progressive Crush of Hybrid Composite Components, Advanced Composites Conference/The United New Generation Vehicle Conference, Detroit, MI, April 8, 1997.
- Use of Composite Materials in Infrastructure, New England Composite Materials Conference, Portland, Maine, April 10, 1997. **INVITED TALK.**
- On the Use of Composites for Bridge Renewal: Materials, Manufacturing and Durability, 42nd International SAMPE Symposium, Anaheim, CA, May 4, 1997.
- The Use of Composites in the Japanese Construction Industry, World Technology Evaluation Center, National Science Foundation, Arlington, VA, May 22, 1997, **SPECIAL SEMINAR.**
- Use of Composites for 21st Century Bridge Infrastructure, 8th SICOMP Conference on Manufacturing and Design of Composites, Pitea, Sweden, June 2, 1997, **KEYNOTE LECTURE.**
- Application of Composite Materials to the Renewal of 21st Century Civil Infrastructure, 11th International Conference on Composite Materials, ICCM-11, Gold Coast, Australia, July 15, 1997, **PLENARY TALK.**
- Seismic Applications, FHWA Region 7 Seminar, July 23, 1997.
- Durability and Systems Level Design Guidelines for the Use of Fiber Reinforced Composite Reinforcement in Civil Infrastructure, 3rd International Symposium on Non-Metallic (FRP) Reinforcement for Concrete Structures, Sapporo, Japan, October 1997.
- Composite Materials and Processing Methods, Workshop on Advanced Technologies for Bridge Infrastructure Renewal, Rome, Italy, November 21, 1997, **INVITED TALK.**
- Fiber Reinforced Composites for Civil Engineering and Infrastructure Applications, 15th Australasian Conference on the Mechanics of Structures and Materials, Melbourne, Australia, December 8, 1997, **KEYNOTE PAPER.**
- Standards, Durability and Test Methods for Materials, Manufacturing, and Quality Control in Repair, NIST Workshop on Standards Development for FRP Repair, Tuscon, AZ, January 7, 1998.
- Fiber Reinforced Composites for Civil Infrastructure – Applications, Materials and Manufacturing, San Diego Chapter of ASM International, January 15, 1998.
- Use of Composites in Civil Infrastructure, Japan Reinforced Plastics Study Tour, San Diego, CA, January 26, 1998.
- Cross Cutting Technical Challenges in Civil Infrastructure, NIST Workshop on Composites for Infrastructure and Offshore Applications, Gaithersburg, MD, January 29, 1998.
- Composite Materials Technology, Composites for Naval Structures Workshop, La Jolla, Ca, March 3, 1998.
- Composites for 21st Century Civil Infrastructure – Materials, Manufacture and Design, IMM Workshop on Materials for the Infrastructure, La Jolla, CA, April 3, 1998.
- Use of Composites for the Rehabilitation of Bridge Infrastructure, International Concrete Repair Institute, 3rd Annual Symposium on Repair and Strengthening of Concrete, Pleasanton, CA, May 7, 1998, **INVITED TALK.**
- Status of Composites for 21st Century Civil Infrastructure – Manufacturing and Design Issues, 12th ASCE Engineering Mechanics Conference, La Jolla, CA, May 19, 1998.
- Design Considerations for FRP Rehabilitation of Concrete Structures, Damstruc '98, Rio-de-Janeiro, Brazil, May 1998.
- Structural Characterization of Fiber Reinforced Composite Short- and Medium-Span Bridge Systems, European Conference on Composite Materials, Naples, Italy, June 3, 1998.
- Japan's Model for R&D and Deployment of Composites in Bridge Infrastructure, US DOT seminar on Creative Financing and Deployment of Innovative Transportation Technologies in the NAFTA Region, San Diego, July 27, 1998.
- Environmental Durability of Glass Fiber Reinforced Composites – Short Term Effects, First International Conference on Durability of Fibre Reinforced Composites for Construction, Sherbrooke, Canada, August 6, 1998.

- Damage Tolerance and Durability of an Advanced Composite Bridge System, First International Conference on Durability of Fibre Reinforced Composites for Construction, Sherbrooke, Canada, August 6, 1998.
- Repair of PCCP with Fiber Reinforced Composites, ASCE Conference: Pipelines in the Constructed Environment, San Diego, August 26, 1998.
- Rehabilitation of Concrete Structures Using Fiber Reinforced Composites, 2nd RILEM International Conference on Rehabilitation of Structures, Melbourne, Australia, September 23, 1998.
- An Overview of Fiber Composites Usage in Civil and Structural Engineering, Advance Composites in Civil and Structural Engineering Conference, ACCSE '98, Brisbane, Australia, September 25, 1998, **KEYNOTE TALK.**
- Materials and Design Considerations in FRP Rehabilitation of Concrete Structures, 3rd International Conference on Fracture Mechanics of Concrete and Concrete Structures, Gifu, Japan, October 15, 1998, **INVITED TALK.**
- FRP Composites Bridges, Composite Fabricators Association – 1998 Polymer Concrete Seminar, San Antonio, TX, October 20, 1998, **INVITED TALK.**
- Durability of Adhesives for FRP/Concrete Bonding: Microanalysis of the Adhesive Bond Surface, ACI Fall Convention, Los Angeles, CA, October 26, 1998.
- Composites in Cold Regions: Results, Implications, and the Future, US Army Cold Regions Research and Engineering Laboratory, Hanover, NH, November 22, 1998, **INVITED SEMINAR.**
- Enhancing Computing/Control Facilities, Research, and Education Related to Seismic Effects on Structures, Technology for Education 2000, UCSD, San Diego, CA, January 12, 1999.
- The HITEC Evaluation Program for Composite Column Wrap Systems for Seismic Retrofit, International Composites Exposition '99, Cincinnati, OH, May 10, 1999.
- Materials Design Considerations for the Use of FRP Composites for Renewal of Civil Infrastructure, International Composites Exposition '99, Cincinnati, OH, May 11, 1999.
- FRP Composites for Twenty-First Century Civil Infrastructure – Concepts for Structures Designed with Composites, International Composites Exposition '99, Cincinnati, OH, May 11, 1999.
- Effect of Concrete Based Alkaline Solutions on the Short Term Response of Composites, 44th International SAMP Symposium, Long Beach, CA, May 27, 1999.
- Composites: Materials, Design, Processing and Durability – Implications for Use in Civil Infrastructure Renewal, Royal Institute of Technology, Stockholm, Sweden, May 29, 1999, **INVITED SEMINAR.**
- The Renewal of Civil Infrastructure: The Future of Composites, Swedish Institute of Composites, Pitea, Sweden, June 1, 1999, **KEYNOTE LECTURE.**
- Seismic Retrofitting and Strengthening of Columns with Composite Materials, Infrastructure Regeneration and Rehabilitation, University of Sheffield, Sheffield, UK, June 29, 1999.
- Materials and Process Considerations in the Development of Composite Material Forms for Infrastructure Rehabilitation, Advanced Composites Group, Darby, UK, June 30, 1999, **INVITED SEMINAR.**
- Durability of Fiber Reinforced Composites in Civil Infrastructure: Issues, Results and Implications, DURACOSYS '99, Brussels, Belgium, July 13, 1999.
- Composites in Infrastructure, IVW Kaiserslautern, Kaiserslautern, Germany, July 15, 1999, **INVITED SEMINAR.**
- Developments in Design Standards for Advanced Composites in Infrastructure Applications, Cooperative Research Center for Advanced Composite Structures, Melbourne, Australia, August 17, 1999, **INVITED TALK.**
- Composites Manufacturing for 21st Century Infrastructure, Australia Composites Structures Society, Melbourne, Australia, August 18, 1999, **INVITED TALK.**

- Developments in Composites Fueled by 21st Century Infrastructure, Hawker deHavilland, Bankstown, Australia, August 19, 1999, **INVITED TALK.**
- New Developments in Materials for Transportation and Infrastructure Applications, RTA, Sydney, Australia, August 20, 1999, **INVITED TALK.**
- Composites in Civil Infrastructure: Implications of Materials, Manufacturing, and Durability, SAMPE Los Angeles Chapter, Los Angeles, CA, October 19, 1999, **INVITED TALK.**
- Durability of Composites in Civil Infrastructure – Status Overview, CFA, Chicago, October 26, 1999.
- Post-Strengthening of Concrete Slabs, ACI Fall Convention, Baltimore, MD, November 2, 1999.
- FRP Composites for Infrastructure Renewal – Status and Challenges for the 21st Century, ACUN-2, Sydney, Australia, February 15, 2000.
- Durability and Long-Term Performance of Composite Repair and Rehabilitation Systems, Conference on Seismic Repair and Rehabilitation of Structures 2, Fullerton, CA, March 22, 2000
- Composite Materials in Infrastructure, SAMPE San Diego Chapter and California Society of Professional Engineers, San Diego, CA, April 27, 2000
- Critical Gaps in Durability Data for FRP Composites in Civil Infrastructure, 45th International SAMPE Symposium, Long Beach, Ca, May 22, 2000.
- Design Considerations for FRP Rehabilitation and Upgrading of Concrete Structures, 2nd International Conference on the Behavior of Damaged Structures, Niteroi, Brazil, June 3, 2000, **SPECIAL LECTURE.**
- Composites in the Renewal of Civil Infrastructure – Materials, Manufacturing, Design and Durability, 9th US-Japan Conference on Composite Materials, Mishima, Japan, July 4, 2000, **PLENARY TALK.**
- The HITEC Process As a Facilitator of New Technology for Bridge Components, CERF International Symposium and Innovative Technology Tradeshow, Washington, DC, August 16, 2000
- Characterization of Hybrid FRP Beam-Slab Bridge Systems, 3rd International Conference on Advanced Composite Materials in Bridges and Structures, Ottawa, Canada, August 17, 2000.
- Overview of Composites in Civil Engineering, 1st Fibre Composites Design and Development Conference, Brisbane, Australia, September 14, 2000, **PLENARY TALK.**
- Retrofit of Existing Civil Structures, 1st Fibre Composites Design and Development Conference, Brisbane, Australia, September 14, 2000
- Testing Protocols for Composite Bridge Structures, 1st Fibre Composites Design and Development Conference, Brisbane, Australia, September 14, 2000
- FRP Composites As Materials of Construction, ENCORD Advanced Polymer Composite Materials for Structural Use, Stockholm, Sweden, October 16, 2000, **KEYNOTE SPEECH.**
- Effect of Moisture/Solution on Composites for Civil Infrastructure, 2000 ASME International Mechanical Engineering Congress and Exposition, Orlando, FL, November 9, 2000.
- Effect of Alkaline Environments on Composites for Civil Infrastructure, 2000 ASME International Mechanical Engineering Congress and Exposition, Orlando, FL, November 9, 2000.
- MDA/CERF Durability Program – The Path Forward, 2000 ASME International Mechanical Engineering Congress and Exposition, Orlando, FL, November 9, 2000.
- Use of FRP Composite Materials in the Renewal of Civil Infrastructure in Seismic Regions, 2nd Workshop on Mitigation of Earthquake Disaster By Advanced Technologies, MEDAT-2, Las Vegas, NV, November 30, 2000
- Development of Carbon Fiber Reinforced Composites as Construction Materials for Bridge Structures, The Global Outlook for Carbon Fiber 2000, San Antonio, TX, December 5, 2000, **INVITED LECTURE.**
- Aqueous Environment Related Moisture Kinetics and Durability of E-glass/Vinylester Composites, ACUN-3 Conference, Sydney, Australia, February 9, 2002. **GUEST OF HONOR LECTURE.**

- Rational Use of FRP Composites in Civil Infrastructure Renewal, Caltrans, Engineering Services Center, Sacramento, CA, January 17, 2001
- Strengthening and Repair of Concrete Structures Using Composites, Faculty of Civil Engineering and Technology, Universidade Nova de Lisboa, Lisbon, Portugal, March 1, 2001
- Impact on Composite Plates at Moderately High Speeds, Faculty of Civil Engineering and Technology, Universidade Nova de Lisboa, Lisbon, Portugal, March 1, 2001
- Development and Characterization of Modular FRP Bridge Systems, ISIS Canada, University of Manitoba, Winnipeg, Canada, May 24, 2001
- A Rational Approach to the Durability, Characterization and Lifetime Prediction of Composites, 6th Caltrans Seismic Research Workshop, Sacramento, Ca, June 12, 2001.
- Characterization of Sub-Zero Response of Vinylester FRP in Civil Infrastructure Renewal, 11th International Offshore and Polar Engineering Conference, Stavanger, Norway, June 20, 2001.
- Latest Advances in Advanced Composites for Building Marine Oil Terminals, California State Lands Commission, Martinez, CA, June 27, 2001, **INVITED TALK.**
- Design and Evaluation of Modular Bridge Systems Using FRP Composite Materials, 5th conference on Fibre Reinforced Plastics for Reinforced Concrete Structures, Cambridge, UK, July 17, 2001.
- Materials Characterization and Design Allowables for the Use of Polymers and FRP Composites, 2nd International Advanced Engineered Wood Composites, Bethel, Maine, August 16, 2001.
- Durability of FRP in Corrosion and Construction Applications, 12th CFA Technical Conference on Construction and Corrosion, Las Vegas, NV, September 11, 2001
- Durability, Damage Tolerance, and Monitoring of FRP Composites Used for Seismic Retrofit and Strengthening of Bridges, International Conference on Composites in Construction, Porto, Portugal, October 11, 2001, **KEYNOTE LECTURE.**
- Correlation of Laboratory and Field Studies of Ageing Degradation of Composite Systems in Civil Infrastructure, 5th International Conference on Durability Analysis of Composite Systems, DURACOSYS 2001, Tokyo, Japan, November 9, 2001, **KEYNOTE LECTURE.**
- Durability of FRP Composites in Civil Infrastructure – Myth or Reality, International Conference on FRP Composites in Civil Engineering, CICE 2001, Hong Kong, December 12, 2001, **INVITED THEME PAPER.**
- 3rd Energy Absorbing Characteristics of Circular Frustra, International Crashworthiness Conference, Melbourne, Australia, February 25, 2002
- Materials and Durability Characterization of Composite Seismic Wrap Systems using NOL Ring Tests, 14th Symposium on Composite Materials: Testing and Design, ASTM, Pittsburgh, PA, March 11, 2002.
- Durability of FRP Composites for Civil Infrastructure – Myth, Mystery, or Reality, Conference on Advanced Polymer Composites for Structural Applications, Southampton, UK, April 16, 2002, **KEYNOTE LECTURE.**
- Beyond Rehabilitation – Use of FRP Composites in New Structural Systems: Laboratory and Field Implementation, Conference on Advanced Polymer Composites for Structural Applications, Southampton, UK, April 16, 2002, **KEYNOTE LECTURE.**
- Design Allowables and Materials Resistance Factors, 2nd International Conference on Durability of Fibre Reinforced Polymer (FRP) Composites for Construction, Montreal, Canada, May 29, 2002, **KEYNOTE LECTURE.**
- Characterization and Modeling of Moisture and Alkali Effects on E-Glass/Vinylester Composites, 2nd International Conference on Durability of Fibre Reinforced Polymer (FRP) Composites for Construction, Montreal, Canada, May 30, 2002
- Development of FRP Composite Deck Systems and Implementation on the Kings Stormwater Channel Bridge, International IASS Symposium on Lightweight Structures in Civil Engineering, Warsaw, Poland, June 24, 2002.



















- \$473,584: Rapid performing technology for ceramic matrix composites, Defense Advanced Research Projects Agency, May 1992 – January 1994 (*co-PIs: A.N. Beris, T.W. Chou and D.J. Wilkins*).
- \$473,584: Rapid placement technology for polymer matrix composites, Defense Advanced Research Projects Agency, May 1992 – January 1994 (*co-PIs: S.G. Advani, J.W. Gillespie, K.V. Steiner and D.J. Wilkins*).
- \$3,430,000: ARO/URI Multidisciplinary program in manufacturing science of polymeric composites, Army Research Office, April 1992 – March 1997 (*co-PIs: S. G. Advani, A.N. Beris, T.W. Chou, P.S. Dhurjati, J.W. Gillespie, J.B. Mehl, R.B. Pipes, M.H. Santare, A.D. Shine, K.V. Steiner and D.J. Wilkins*).
- \$5,000: RTM of honeycomb panels, Lockheed Aeronautical and Space Systems, February 1992 – April 1992.
- \$60,000: Studies for RTM of CMCs, Dow Corning Corporation, December 1991 – December 1992.
- \$178,859: Damage containment and monitoring for increased survivability using textile structural composites, US Army TACOM, October 1991 – September 1993.
- \$99,999: Feasibility study and fabrication of potential composite components of a production intent lightweight electric generator, Ft. Belvoir RD&E Laboratories, September 1991 – October 1992 (*co-PIs: J.W. Gillespie and K.V. Steiner*).
- \$20,000: Application of TQD for materials selection and review of draft standards, US Army MICOM, November 1990 – July 1991.