

*Curriculum Vitae of*

## **RAJAN SEN**

Department of Civil and Environmental Engineering  
University of South Florida  
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### **EDUCATION**

Ph.D	State University of New York at Buffalo NY	1984
M.A.Sc	University of British Columbia, Vancouver, Canada	1970
B.Tech	Indian Institute of Technology, Kharagpur, India	1968

### **PROFESSIONAL REGISTRATION**

Florida, License Number 36886; Ontario, Canada, # 41539016 (until 1996)

### **PROFESSIONAL HISTORY**

Professor, Department of Civil and Environmental Engineering, University of South Florida, Tampa, FL, 1993

Samuel & Julia Flom Endowed Chair, Department of Civil and Environmental Engineering, University of South Florida, Tampa, FL, 1997

Adjunct Professor, School Architecture and Community Design, University of South Florida, Tampa, FL, 1986-99

Associate Professor, Department of Civil and Environmental Engineering, University of South Florida, Tampa, FL, 1988

Assistant Professor, Department of Civil and Environmental Engineering, University of South Florida, Tampa, FL, 1984

Doctoral Research, Department of Civil Engineering, SUNY, Buffalo, NY, 1983-84

Freeman, Fox and Partners, London, UK (seconded by Department of Transport), Summer 1980

Engineer, Bridges Engineering Standards Division, St. Christopher House, Department of Transport, London, UK, 1979-83

Engineer, Highways Engineering Computer Branch, St. Christopher House, Department of Transport, London, UK, 1974-79

Assistant Engineer, Highways Engineering Computer Branch, St. Christopher House, Department of Transport, London, UK, 1972-1974

Research Associate, Dept of Civil Engineering, University of British Columbia, Canada, 1970

Research Assistant, Dept of Civil Engineering, University of British Columbia, Canada, 1968

## HONORS AND AWARDS

- Chair (with co-chair) FRPRCS10 International Conference, Tampa FL, April 2011
- Doctoral Dissertation by Chandra Khoe selected for publication by VDM Publishing, 2010
- FPCA Recognition for Outstanding Achievement, First Place Overall, National Design Competition, 2010
- PCI, Award for Excellence, Big Beam Contest, 2010
- PCI, Award for Excellence, Big Beam Contest, 2009
- Provost's Award for Top Performing Faculty, USF, 2009
- First Prize, Best Report, PCI Big Beam Contest 2009
- Conference Paper #9 Selected for Bi-lingual Italian Publication, 2009
- Papers # 42, 44 on seal slab included in entirety in design and construction manual for marine foundations prepared by *Deep Foundations Institute*, NJ, 2009
- FPCA Award for Outstanding Performance in Big Beam Contest, 2009
- First Prize for Innovative Design, PCI Big Beam Contest, 2008
- PCI, Award for Excellence, Big Beam Contest, 2008
- Provost's Award for Top Performing Faculty, USF, 2008
- Paper # 19 Nominated for Best Paper Award, TRB 2008
- Paper # 23 Nominated by Publication Council, ASCE for Outstanding Paper Award 2008
- Dissertation by Nick Bradford selected for publication by VDM Verlag, Germany, 2008
- Research featured in *Composites Technology*, December 2004
- Research featured as Cover Story in *Steel Bridge News*, October 2003
- Presidential Award for Faculty Excellence, USF, 2003
- Fellow, *American Concrete Institute* 2003
- United States Southern Command Award, Caribbean Engineering Conference, 2002
- Fellow, *American Society of Civil Engineers* 2001
- USF Engineering Delegate, Tour of South African Universities, 2000
- Appointed Samuel and Julia Flom Professor, 1997
- Teacher Incentive Program Award, USF, 1995
- Nominated for Outstanding USF Teacher Award, 1994
- Outstanding Researcher, College of Engineering, USF, 1993
- Authors and Artists Award, USF, 1992
- Certificate of Merit, American Institute of Architects, Tampa, 1992
- Graduated First, Indian Institute of Technology, Kharagpur, India, 1968
- Award for Best Project, IIT, Kharagpur, India, 1968
- Class Prize, Indian Institute of Technology, Kharagpur, India 1964, 1966, 1967, 1968
- Institute Merit Scholar, IIT Kharagpur, India, 1964-68

## PROFESSIONAL ACTIVITIES

### A. Editorial

- Guest Editor, Special Issue on Corrosion Repair, *International Journal of Materials and Products Technology*, UK, 2005
- Member, International Editorial Board, ASCE, *Journal of Composites for Construction*, 2002-
- Member, International Editorial Board, *Advances in Civil Engineering*, Hindawi, NY, NY, 2008-

## **B. Technical Committee Membership**

- TRB Committee on Structural Fiber Reinforced Polymers (AFF80 ) 2007-2009, 2009-2011
- Member, FRP Infrastructure Committee, SAMPE, 2005
- Member, RILEM Technical Committee, FRP-Concrete Bond in Structural Strengthening and Rehabilitation, 2004
- Member, *ACI Committee 440*, 1995
- Member, ASCE, *Methods of Analysis Committee*, 1989-95
- Member, *ACI Committee 444*, 1988
- Member, *ACI Committee 215*, 2001
- Member, *ASCE Subcommittee S8 on Advanced Composites*, 1989; Secretary, *ASCE Subcommittee S8 on Advanced Composites*, 1989-91

## **C. Technical Society Membership**

- Member, American Society for Engineering Education
- Member, International Association for Bridge Maintenance and Safety
- Member, International Association for Bridge and Structural Engineering
- Fellow, American Society of Civil Engineers
- Fellow, American Concrete Institute

## **D. Government Advisory Committee**

- International Advisory Board, Fiber Reinforced Polymer Institute, India

## **E. NSF Delegate to International Conferences**

- Member of US Delegation from NSF to the *Second International Conference on FRP Reinforcement*, Ghent, Belgium, August 1995.
- Member of US Delegation from NSF to the *International Conference on Fibre Reinforced Structural Plastics in Civil Engineering*, Madras, India, December 1995.
- Member of US Delegation from NSF to the *Third International Conference on FRP Reinforcement*, Sapporo, Japan , October 1997.
- Member of US Delegation from NSF to ICERP 2008, Bombay, February 2008.

## **F. Professional Service**

- Tenure and promotion reviews/ distinguished professor
- External Examiner, Ph.D Dissertations
- Composite Durability and Multifunctional Materials for Facilities Workshop, Champaign, IL, 2005, 2008
- Cold Regions Composites Workshop, CRREL, Hanover, NH, NSF, 1998
- Coordinated Program for Research on Advanced Composites in Construction (RACC), National Science Foundation, 1993-94.

## **F. Workshops Organized at USF**

- Host, BASF/USF Workshop, August 2008
- Host, Post Tensioning Institute Phoenix, AZ Seminar & Workshop 2007
- Segmental Bridge Workshop, June 2002
- USF/NSBA Steel Bridge Seminar, January 2002
- Vessel Collision Design of Highway Bridges, 1992
- Teaching Prestress Concrete, 1985

## **G. Proposal Reviewer**

- National Science Foundation Panel Reviewer Unsolicited Proposals
  - 1995, 1999, 2002 (Feb/Nov), 2005, 2006, 2008 (invited - could not attend)
- National Science Foundation, Panel Reviewer CAREER Proposals 2001, 2004, 2008
- National Science Foundation, Panel Reviewer I/UCRC Program 2005
- National Science Foundation, Panel Reviewer PATH Proposal 2003
- National Science Foundation, Reviewer SGER 2004
- National Science Foundation, International Research and Education 2008
- National Science Foundation, Reviewer I/UCRC 2004
- National Science Foundation, Reviewer Global Scientists and Engineers 2006
- National Science Foundation, Reviewer, CMMI, 2006, 2008
- National Sea Grant College Program,  
NOAA External Reviewer 1998
- Natural Sciences and Engineering Research Council of  
Canada External Reviewer 2000, 2002
- Research Grants Council, Hong Kong, China 2009, 2010, 2011
- Coordinacion de Equipamiento para el Transporte, Queretaro,  
Mexico External Reviewer 2002
- King Fahd University, Dhahran, Saudi Arabia
  - Proposals 2002
  - Sabbatical 2004
  - Final Report 2007
- City College, NY External Reviewer  
Internal Collaborative Grant 2004

- Louisiana Board of Regents Out of State Expert,  
Research Competiveness SubProgram 2002, 2009
- University of Missouri Research Board  
External Reviewer 2009
- Oregon Transportation Research and Education Consortium (OTREC)  
Invited Expert External Reviewer 2007, 2010
- Texas Higher Education Coordinating Board Grants  
Competition External Reviewer 2003, 2009
- West Virginia University Research Corporation  
External Reviewer 2006
- University of South Florida  
Panel Reviewer 2004  
Reviewer 2007, 2009

#### **H. Manuscript Reviewer**

- ACI, Concrete International
  - ACI, External Reviewer for TAC
  - ACI SP
  - ACI, Structural Journal
  - AISC, Engineering
  - ASCE, Journal of Architectural Engineering
  - ASCE, Journal of Aerospace Engineering
  - ASCE, Journal of Bridge Engineering
  - ASCE, Journal of Composite Construction
  - ASCE, Journal of Materials in Civil Engineering
  - ASCE, Journal of Structural Engineering
  - PTI, Journal of Post-Tensioned Institute
  - Canadian Journal of Civil Engineering
  - Cement and Concrete Composites (UK)
  - Composites B Part 2 (UK)
  - Composites, Part A (UK)
  - Corrosion
  - Engineering Structures (UK)
  - Fatigue and Fracture of Engineering Materials and Structures (UK)
  - Material and Structures, RILEM (France)
  - Structural Engineering and Mechanics (Korea)
  - Steel and Composite Structures (Korea)
  - Various FRP Conferences, ASCE, SAMPE, ISOPE, TRB, CICE, CDCC, ICERP
- Book Reviewer, PWS Engineering, Boston, MA  
Book Reviewer, McGraw-Hill, New York, NY

## **G. International Conference Chair /Co-chair**

- Advanced Composite Materials in Civil Engineering Structures, ASCE Specialty Conference, Las Vegas, NV, January/February 1991
- 10<sup>th</sup> International Symposium: Fiber Reinforced Polymer (FRP) Reinforcement for Concrete Structures, Tampa FL April 2-4 2011.

## **H. Session Chair/Co-Chair (*Selected*)**

- FRPRCS-10 Conference, Tampa, April 2011
- CITC-V Conference, Istanbul, Turkey, May 2009
- IABSE Conference, Helsinki, Finland, June 2008
- ICERP Conference, Bombay, India, February 2008
- ICE Bridge Design, Construction & Maintenance Conference, Beijing, China, Sept. 2007.
- CDCC 2007, Third International Conference on Durability of Fibre Reinforced Polymer (FRP) Composites for Construction, Quebec City, Canada, May 2007.
- Structural Faults + Repair - 2006, Edinburgh, Scotland, June 2006.
- 3<sup>rd</sup> International Conference on Construction in the 21<sup>st</sup> Century, Athens, September 2005.
- 3<sup>rd</sup> European Conference on Structural Control, Vienna University of Technology, Vienna, Austria, July 2004.
- Second International Structural Engineering and Construction Conference ISEC-02, Rome, Italy September, 2003.
- ACI Spring Convention, Vancouver, Canada, March, 2003.
- International Conference on the Performance of Materials in the New Millennium (ICPHM), Cairo, Egypt, February, 2003.
- International Workshop and Conference on Construction Management and Materials (CONMAT 2003), Indian Institute of Technology, Kharagpur, India, January, 2003
- International Conference on FRP Composites in Civil Engineering, Hong Kong, China, December 2001
- ASCE Materials Conference, Houston, October, 2001
- 46<sup>nd</sup> International SAMPE 2001, Long Beach, CA, May 2001
- Second Conference on Seismic Repair and Rehabilitation of Structures (SRRS2), Fullerton, CA, March 2000.
- International Composites Conference on Composites in the Transportation Industry, ACUN-2, Sydney, Australia, February 2000
- 3<sup>rd</sup> NACE Latin American Corrosion Congress, Cancun, Mexico, August 1998
- 42<sup>nd</sup> International SAMPE, Anaheim, CA, May 1997
- ASCE Materials Conference, Washington, DC, November 1996
- International FRP Conference, Madras, India, December 1995
- Second International FRP Conference, Ghent, Belgium, August 1995
- ACI Convention, Tampa, FL, October, 1994

## ACADEMIC SERVICE

### A. Ph. D Supervision

1. *Oxygen Diffusion Characterization of FRP Composites Used in Concrete Repair and Rehabilitation. Doctoral dissertation submitted by Chandra K. Khoe, Department of Civil and Environmental Engineering, University of South Florida, Tampa, May 2011 (co-major professor). Selected for publication by VDM Publishing House.*
2. *Application of Luminescence Sensors in Oxygen Diffusion Measurement and Study of Luminescence Enhancement/Quenching by Metallic Nanoparticles.* Doctoral dissertation submitted by Sanchari Chowdhury, Department of Chemical and Biomedical Engineering, University of South Florida, Tampa, May 2010 (co-major professor).
3. *Underwater FRP Repair of Corrosion Damaged Prestressed Piles.* Doctoral dissertation submitted by Kwangsuk Suh, Department of Civil and Environmental Engineering, University of South Florida, Tampa, August 2006.
4. *Performance Based Design of Degrading Structures.* Doctoral dissertation submitted by Mouchir Chenouda, Department of Civil and Environmental Engineering, University of South Florida, Tampa, May 2006 (co-major professor).
5. *Design Optimization of FRP Composite Panel Building Systems: Emergency Shelter Application. Doctoral dissertation submitted by Nick Bradford, Department of Civil and Environmental Engineering, University of South Florida, Tampa, December 2004. Selected for publication by VDM Verlag, Germany, 2008*
6. *Cold Bending and Heat Curving of Structural Steel I-Girders.* Doctoral dissertation by Antoine N. Gergess to the Department of Civil and Environmental Engineering, University of South Florida, Tampa, August 2001.
7. *Ultimate Capacity of Damaged Prestressed Piles.* Doctoral dissertation submitted by David L. Snyder Jr. to the Department of Civil and Environmental Engineering, University of South Florida, Tampa, FL, May 2000.

### B. Ph. D in Progress

S. Stroh	2011	W. Chang	2014
J. Aguilar**	2011	W. Lindecamp	2014

\*\* co-advisor

### C. Master's Thesis

1. *Rehabilitation of Composite Deck Panel Bridges.* Master's thesis submitted by Atiq Alvi to the Department of Civil and Environmental Engineering, University of South Florida, Tampa, FL, December 2010.

2. *Seismic Design of Buildings Using ASCE 7-05*. Master's thesis submitted by Enrique Martinez. Exchange Student from University of Oviedo, Spain, December 2009.
3. *LRFD Design of Double Composite Box Girder Bridges*. Master's thesis submitted by Purvik Patel to the Department of Civil and Environmental Engineering, University of South Florida, Tampa, FL, December 2009.
4. *Post-Charley Evaluation of Undamaged Homes in Punta Gorda Isles*. Master's thesis submitted by Virgilet Pierrisaint to the Department of Civil and Environmental Engineering, University of South Florida, Tampa, FL, March 2006.
5. *Deterioration Process and Deck Failure Mechanism of Florida's Precast Deck Panel Bridges*. Master's thesis submitted by Ivan Gualtero to the Department of Civil and Environmental Engineering, University of South Florida, Tampa, FL, November 2004.
6. *Finite Element Analysis of Florida Precast Panel Deck Bridges*. Master's thesis submitted by Oscar Gomez to the Department of Civil and Environmental Engineering, University of South Florida, Tampa, FL, August 2004.
7. *Replacement Prioritization of Precast Deck Panel Bridges in Florida*. Master's thesis submitted by Ganesh Deshmukh to the Department of Civil and Environmental Engineering, University of South Florida, Tampa, FL, March 2004.
8. *Evaluation of FRP as an Oxygen Barrier in Structural Repairs*. Master's thesis submitted by J. Wu to the Department of Civil and Environmental Engineering, University of South Florida, Tampa, FL, November 2003.
9. *Effectiveness of CFRP in Reducing Corrosion Rate of Prestressed Sections*. Master's thesis submitted by K. S. Suh to the Department of Civil and Environmental Engineering, University of South Florida, Tampa, FL, June 2002.
10. *Strength of Repaired Piles*. Master's thesis submitted by Jeffrey Fischer to the Department of Civil and Environmental Engineering, University of South Florida, Tampa, FL, December 1999.
11. *Finite Element Modeling of Pullout Tests*. Master's thesis submitted by George Atluri to the Department of Civil and Environmental Engineering, University of South Florida, Tampa, FL, August 1999.
12. *In-Situ Testing of CFRP/Concrete Interface Bond*. Master's thesis submitted by Robert K. Race to the Department of Civil and Environmental Engineering, University of South Florida, Tampa, FL, May 1999.
13. *Analysis of Concrete Masonry Repaired with Carbon Fiber*. Master's thesis submitted by Dan Engebretson to the Department of Civil and Environmental Engineering, University of South Florida, Tampa, FL, December 1997, pp. 137.
14. *Parametric Studies on the Durability and Bond of AFRP and CFRP Prestressed Piles in a Marine Environment Using Finite Element Analysis*. Master's thesis submitted by



David Snyder to the Department of Civil and Environmental Engineering, University of South Florida, Tampa, FL, May 1996, pp. 268.

15. *Durability of E-glass in an Alkaline Environment*. Master's thesis submitted by Tom Salem to the Department of Civil and Environmental Engineering, University of South Florida, Tampa, FL, May 1996, pp. 156.
16. *Strengthening of Concrete Masonry Walls using CFRP Material*. Master's thesis submitted by Alfred Hartley to the Department of Civil and Environmental Engineering, University of South Florida, Tampa, FL, December 1995, pp. 215.
17. *Studies in Durability of CFRP Pretensioned Piles*. Master's thesis submitted by Satya Sukumar to the Department of Civil Engineering & Mechanics, University of South Florida, Tampa, FL, May 1995, pp. 215.
18. *Studies in Durability of AFRP Pretensioned Piles*. Master's thesis submitted by Jose Rosas to the Department of Civil Engineering & Mechanics, University of South Florida, Tampa, FL, May 1995, pp. 241.
19. *Restraint Effect of Bridge Bearings*. Master's thesis submitted by Usha Ramachandaran to the Department of Civil Engineering & Mechanics, University of South Florida, Tampa, FL, May 1994, pp. 280.
20. *Uplift Resistance of Slab-on-Grade*. Master's thesis submitted by Rodolfo O. Paroan to the Department of Civil Engineering & Mechanics, University of South Florida, Tampa, FL, May 1994, pp. 70.
21. *Design of FFRP Pretensioned Beams for Durability Study*. Master's project submitted by S. Michael Bijan to the Department of Civil Engineering & Mechanics, University of South Florida, Tampa, FL, May 1994, pp. 56.
22. *Steel Composite Bridge Sections Strengthened by Carbon Fiber Reinforced Plastic Laminates*. Master's thesis submitted by Larry W. Liby to the Department of Civil Engineering & Mechanics, University of South Florida, Tampa, FL, December 1993, pp. 353.
23. *Bridge Strengthening Using Advanced Composites*. Master's thesis submitted by Yufeng Wang to the Department of Civil Engineering & Mechanics, University of South Florida, Tampa, FL, December 1992, pp. 141.
24. *Modeling, Testing and Analysis of a Composite Bridge*. Master's thesis submitted by Ken Spillett to the Department of Civil Engineering & Mechanics, University of South Florida, Tampa, FL, December 1992, pp. 157.
25. *Strength and Durability of Fiberglass Pre-tensioned Piles*. Master's thesis submitted by

Daniel Mariscal to the Department of Civil Engineering and Mechanics, University of South Florida, Tampa, FL, December 1991, pp. 301.

26. *Feasibility of Fiberglass as a Prestressing Material for Piles*. Master's Thesis submitted by Patricia Wadsack to the Department of Civil Engineering & Mechanics, University of South Florida, Tampa, FL, June 1991, pp. 174.
27. *Static and Fatigue Response of Fiberglass Pretensioned Beams*. Master's thesis submitted by Zeying L. Sun to the Department of Civil Engineering and Mechanics, University of South Florida, Tampa, FL, June 1991, pp. 199.
28. *Studies in Prestress Concrete*. Master's thesis submitted by Ali Saadat to Department of Civil Engineering and Mechanics, University of South Florida, December, 1990, 126 pp.
29. *Two Dimensional Elastic Analysis of Continuous Prestressed Voided Slab Bridges*. Master's thesis submitted to the Department of Civil Engineering & Mechanics by Xianghong Sun, December 1989, 166 pp.
30. *Evaluating Fiber Content of Fresh and Hardened Concrete*. Master's project submitted to the Department of Civil Engineering & Mechanics by Dan Teal, November 1989 (co directed with Dr. Bruce Suprenant).
31. *Micro\_Piles : Testing, Analysis and Design*. Master's thesis submitted to the Department of Civil Engineering & Mechanics by Brian Jory, March 1989, pp. 176.
32. *Collapse Load Analysis of Continuous, Prestressed Voided Slab Bridges*. Master's thesis submitted to the Department of Civil Engineering and Mechanics by Antoine Gerges, July 1988, pp. 141.
33. *Ultimate Capacity of Micro-Piles*. Master's thesis submitted to the Department of Civil Engineering & Mechanics by N. Michael Jackson, February 1988, 93 pp.
34. *Ultimate Strength Analysis of Curved, Post-tensioned Bridges Prestressed Longitudinally and Transversely*. Master's thesis submitted to the Department of Civil Engineering and Mechanics by David S. Hodge, Jr., January 1988, 95 pp.
35. *Design Rules for Prestressed Concrete Bridges : A Comparative Study*. Master's project submitted to the Department of Civil Engineering & Mechanics by Paul R. Steijlen, July 1986, 131 pp.
36. *Rehabilitation of an AASHTO Beam Bridge - A Geometric Widening Study*. Master's thesis submitted to Department of Civil Engineering & Mechanics by Robert A. Heck, March 1986, 72 pp.

**D. Undergraduate Honors Theses**

1. *The Bridge of the Future: The Use of Smart Technology in Bridge Engineering*. Honors Thesis, Submitted to the University of South Florida by Mike Slaven, December, 1997.

*Paper by Mr. Slaven based on thesis entitled “The Bridge of the Future” was awarded the best paper prize at the 15<sup>th</sup> International Bridge Conference, Pittsburgh, June 15-17, 1998*

2. *Design of a Concrete Bridge*, Honors Thesis Submitted to the University of South Florida, by Mike Thrasher, April 2007.
3. *Green Building: Basics and Local Survey of Tampa*, Honors Thesis Submitted to the University of South Florida, by Darin Goldin, December 2007.
4. *Innovative Method for Testing Roof Tile Connections under Variable Uplift*. Honors Thesis Submitted to the University of South Florida, by Jorge Fuentes, December 2007.

**E. Research Experience for Undergraduates**

R. Fernandez (2009)	C. Privitere (2010)
M. Durshimer (2008)	M. Rubin (2009)
J. Dodson (2006)	M. Farrello (2007)
N. Meloy (2004)	A. Harley (1995)
K. Spillett (1992)	E. Hogue (1991)
M. Muchard (1990)	B. Washington (1990)
B. Jory (1988)	M. Jackson (1987)
D. Hodge (1987)	P. Steijlen (1986)

**F. McNair Faculty Research Mentor**

J. Fuentes (2006)

Mr. Fuentes’ innovative research topic on testing tile fastenings under variable uplift force was one of two selected for presentation at UC, Berkeley in 2006.

**G. NSF – Step Program *Applied Calculus II Project***

Alyssa Ordmandy, Spring 2009

Austin Potts, Fall 2009

*Project Report by Austin Potts “Modulus of Subgrade Reaction” published in “USF Undergraduate Journal of Mathematical Modeling One + Two”, Vol. 2:1 Fall 2009*

**H. Gaither High School Interns - Research Mentor**

Anthony Gonzalez Zack Massey Alan Mohammed Andrew Williams (2010)

## **I. Post-Doctoral Supervision**

- Dr. M. Issa (1987-89)
- Dr. A. Torres-Acosta (2001-02)
- Dr. N. Pai (2003-10)

## **J. Research Experience for Teachers**

- R. Davison, King High School, Tampa, Summers 2003, 2004
- S. Brown, 6<sup>th</sup> Grade Science Teacher, Seven Springs Middle School, Pasco, Summer 2005

## **K. Courses offered**

EGN 3313	Statics
EGN 3331	Mechanics of Materials
EGN 3331L	Mechanics of Materials Laboratory
CES 3402	Civil Engineering Laboratory - Soils Section
CES 4001	Structures I
ECI 4312	Soil Mechanics II
CES 4700	Cement and Concrete Design
CES 4702	Concepts in Concrete Design
CES 4704	Structural Design – Concrete
CES 4820	Timber and Masonry Design
ARC 5587	Architectural Structures I
ARC 5588	Architectural Structures II
CES 5715	Prestress Concrete
CES 6326	Bridge Design
CES 6726	Advanced Concrete Design
CGN 6933-904	Infrastructure I - Repair and Rehabilitation
CGN 5933-901	Design of Masonry Structures

## **L. University Service**

Acting Chair, CEE, Summer 2009  
USF Task Force on Faculty Roles, Responsibilities, and Rewards, 2008-9  
Acting Chair, CEE, Summer 2008  
Member, Search Committee for Transportation Faculty 2008  
Chair, Department Tenure and Promotion Committee 2007  
Acting Chair, CEE, Summer 2007  
Chair, CEE Advisory Board Selection Committee, 2007  
Vice-Chair, University Council on Educational Policy and Issues 2007-  
Member, University Publications Committee 2007-  
Chair, Department, ABET Industrial Committee, 2006-07  
Chair, University Honors and Awards Committee, 2005-07  
Member, University Publications Council 2007-  
Chair, Department, ABET Industrial Committee, 2006-07  
Chair, University Honors and Awards Committee, 2005-07  
Member, College Governance Committee, 2004-05

Member, University Honors and Awards Committee, 2004-05  
 Member, Search Committee, Architecture Dean, 2004-05  
 Chair, Department Tenure and Promotion Committee 2004  
 Member, University Diversity Committee, 2004-  
 Member, University Honors and Awards Committee, 2004-  
 Chair, Department Tenure and Promotion Committee, 2002  
 Chair, Department Tenure and Promotion Committee, 2001  
 Chair, Department Tenure and Promotion Committee, 2000  
 Member, Engineering Faculty USF Development Delegation to South Africa, May 2000  
 Chair, College Grievance Committee, March 2000  
 Chair, Search Committee, Structures Faculty, 2000  
 Member, Search Committee, Dean, College of Engineering, 1999-2000  
 Member, College Promotion and Tenure Committee, 1988-90, 1995, 1998, 1999  
 Member, Search Committee, Director, School of Architecture, 1998-1999  
 Member, College Salary Equity Appeals Committee, May 1999  
 Member, University Distinguished Professor Selection Committee, 1999  
 Member, University Strategic Planning Task Force, Virtual Library, 1998  
 Chair, Search Committee, Chairman, Dept of Civil and Environmental Engineering, 1996  
 Chair, Search Committee, Chairman, Dept of Civil and Environmental Engineering, 1995  
 Member, Search Committee, Structures Faculty, 1996  
 Chair, Search Committee, Transportation Faculty, 1994  
 Member, Tenure and Promotion Committee, School of Architecture, 1990, 92, 95, 97  
 Member, College of Engineering Research Council, 1991  
 Member, College of Engineering Minority Affairs Committee, 1989-91  
 Member, Search Committee, School of Architecture, 1990-91  
 Member, College of Engineering Governance Committee, 1988-90  
 Member, Search Committee, Department of Civil Engineering & Mechanics, 1989-90

## **PUBLICATIONS**

### **A. Books**

1. Iyer, S. and Sen, R. (Editors) Advanced Composite Materials in Civil Engineering Structures, ASCE, NY, NY, 1991.
2. Sen, R., Seracino, R., Shield, C. and Gold, W. (Editors). Fiber Reinforced Polymer Reinforcement for Concrete Structures, 10<sup>th</sup> International Symposium, ACI SP-275, ISBN 0-87031-412-2, 2011.

### **B. Book Sections**

1. Mullins, G., Sosa, R., Sen, R. and Issa, M. (2009). "Seal-Slab Prestressed Pile Interface Bond from Full-Scale Testing," in "Deep Marine Foundations" Editors Robert B. Bittner and Roderic A. Ellman, Deep Foundations Institute, NJ, pp. 263-276.
2. Mullins, G., Sosa, R., Sen, R. and Issa, M. (2009). "Seal-Slab Steel Pile Interface Bond from Full-Scale Testing," in "Deep Marine Foundations" Editors Robert B. Bittner and Roderic A. Ellman, Deep Foundations Institute, NJ, pp 277-287.

3. Gergess, A. and Sen, R. (2007). "Heat Curving HPS 485W Bridge I-Girders" in *Innovations in Bridge Engineering Technology* (Ed K. Mahmoud), Taylor and Francis, Netherlands, pp. 115-124.
4. Banerjee, P.K. and Sen, R., Chapter 3. (1987). "Dynamic Behavior of Axially and Laterally Loaded Piles and Pile Groups" in *Dynamic Behaviour of Foundations and Buried Structures*, (Ed. Banerjee & Butterfield), Elsevier Applied Science Publishers, London, pp. 95-134.
5. Banerjee, P.K., Sen, R. and Davies, T.G., (1987). Chapter entitled "Static and Dynamic Analyses of Axially and Laterally Loaded Piles and Pile Groups", in *Geotechnical Modeling and Applications* (Ed. S.M.Sayed), Gulf Publishing, Houston, TX, pp. 322-354.

### **C. Patent**

1. Bond Enhancement for Underwater Repair. US Patent US 7,871,483 B2, Issued to Gray Mullins and Rajan Sen, January 18, 2011.

### **D. Refereed Papers in Journals**

1. Khoe, C., Sen, R. and Bhethanabotla, V. (2011). "Oxygen Permeability of Fiber Reinforced Polymers Characterization of FRP as an Oxygen Barrier", ASCE, *Journal of Composites for Construction* (in press).
2. Khoe, C., Sen, R. and Bhethanabotla, V. (2011). "Characterization of FRP as an Oxygen Barrier". ACI SP-275-18, ACI, Farmington Hills, MI.
3. Sen, R., Mullins, G., Aguilar, J. and Winters, D. (2011) "Advances in Corrosion Repair of Piles Using FRP". ACI SP-275-30, ACI, Farmington Hills, MI.
4. Sen, R. and Patel, P. (2011). "Citation Rates of Award-Winning ASCE Papers". ASCE *Journal of Professional Issues in Engineering Education and Practice* (in press).
5. Stroh, S., Sen, R. and Ansley, M. (2010). "A Report on Load Testing of a Double Composite Steel Box Girder Bridge". *Transportation Research Record 2200*, pp. 36-42.
6. Aguilar, J., Winters, D., Sen, R., Mullins, G. and Stokes, M. (2010). "FRP-CP System for Pile Repair in Tidal Waters". *Transportation Research Record 2150*, pp. 111-118.
7. Chowdhury, S., Bhethanabotla, V., Sen, R. (2010). "Measurement of Oxygen Diffusivity and Permeability in Polymers using Fluorescence Microscopy". *Microscopy and Microanalysis*. Published doi: 10.1017/S1431927610000401, August.
8. Gergess, A. and Sen, R. (2010). "Post-yield Response of Cold-Cambered Wide Flange Steel Beams". *Journal of Constructional Steel Research*, Vol. 66, pp. 1155-1163.
9. Suh, K.S., Mullins, G., Sen, R. and Winters, D. (2010). "Effective Repair for Corrosion Control Using FRP". ASCE, *Journal of Composites for Construction*, Vol. 14, No. 4, pp. 388-396.

10. Khoe, C., Chowdhury, S., Bhethanabotla, V. and Sen, R. (2010). "Measurement of Oxygen Permeability in Epoxy Polymers, *ACI Materials*, Vol. 107, No. 2, March-April, 138-146.
11. Aguilar, J., Winters, D., Sen, R., Mullins, G. and Stokes, M. (2009). "Improvement in FRP-Concrete Bond by External Pressure". *Transportation Research Record*, No. 2131, pp. 145-154.
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## **F. Non-Refereed Papers in Proceedings**

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10. Sen, R., and Steijlen, P. R. (1987). "A Comparative Study of Code Requirements for the Design of Precast, Prestressed Concrete Short Span Bridges. In *Developments in Mechanics, Volume 14a*, 20th Midwestern Mechanics Conference, Purdue University, West Lafayette, Indiana, pp. 239-244.
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## **G. Publications for UK Department of Transport**

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2. Sen, R., *Suite of Bridge Design and Analysis Programs : Program GRIDS (HECB/B/9)*. (1979). Published by the *Department of Transport*, London, UK, 2nd Edition, 227 pp.
3. Sen, R., *GRIDS - A Programmer's Manual. DTp* (1977), London, UK, 377 pp.

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5. BS 5689 : Part 7 *Design of Lighting Columns* - Responsible for several changes to the draft design provisions prepared for the Department under contract to the University of Manchester.
6. Updated UK Departmental Standard on *Design of Footbridges*.
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15. Sen, R. (1982) "Evaluation of Design Rules for Lighting Columns", *Report for Department of Transport*, London, UK.
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21. Sen, R. (1978). "Specifications for Developing Computer Programs in Structural Engineering", *Report for Department of Transport*, London, UK, 1978.
22. Sen, R. (1978). "Idealisation of Skew Slabs as Skew Grillages". *Report for Department of Transport*, London, UK, September.

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2. Sen, R. and Mullins. G. (2010). "Underwater FRP Repair of Corroding Piles Incorporating Cathodic Protection". Final Report NCHRP-IDEA 128, 28 pp.
3. Aguilar, J., Winters, D., Sen, R., Mullins, G. and Stokes, M. (2009). "Innovative Underwater Pile Repair Incorporating Cathodic Protection". Final Report, Hillsborough County, 45 pp.

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6. Suh, K.S., Mullins, G., Sen, R., and Winters, D. (2005). Use of FRP for Corrosion Strengthening Applications in a Marine Environment. Final Report submitted to Florida / US Department of Transportation, Tallahassee, FL Oct., 406 pp.
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13. Mullins, G., Sosa, R. and Sen, R. (2000). "Seal Slab/Pile Interface Bond". *Final Report submitted to Florida Department of Transportation*, June, 151 pp.
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15. Sen, R., Mullins, G. and Snyder, D. (1999). "Ultimate Capacity of Corrosion Damaged Piles". *Final Report submitted to Florida Department of Transportation*, March, 178 pp.
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21. Sen, R. and Johnson, S. (1996). "Durability of Epoxy Bond with Concrete". *Final Report (Phase I) submitted to Florida Department of Transportation*, 27 pp.
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25. Sen, R. and Spillett, K. (1994). Restraint Effect of Bridge Bearings. Final Report submitted to *Florida and US Department of Transportation*, January, 118 pp.
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29. Sen, R., Issa, M. and Oline, L (1990). "Analytical and Experimental Evaluation of Stiffness Parameters of Voided Slab Bridges". Final Report submitted to *Florida Department of Transportation*, January, 234 pp.
30. Sen, R., and Hodge, D. (1989). "Strength Design of Voided, Post-Tensioned Continuous Slab Bridges", Final Report submitted to *Florida and U.S. Department of Transportation*, May, 97 pp.
31. Sen, R., Jackson, N.M. and Issa, M. (1988). "Micro-Pile Load Tests". Final Report submitted to *Florida Grouting Company, Tampa, FL, March*, 35 pp.
32. Sen, R., Davies, T.G. and Banerjee, P.K. (1983). "Dynamic Behavior of Axially and Laterally Loaded Piles and Pile Groups in Nonhomogeneous Soil". Report prepared for the *National Science*

*Foundation, SUNY, Buffalo, NY, 134 pp.*

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## **I. Thesis/ Dissertations**

1. *Buckling of Thin Plates Using the Framework Method*. M.A.Sc. Thesis. University of British Columbia, Vancouver, Canada, 1970, pp. 88.  
**Advisor:** Prof. A. Hrennikoff
2. *Dynamic Analysis of Buried Structures*. Ph.D Thesis. State University of New York, Buffalo, NY, July 1984, pp. 269.  
**Advisor:** Prof. P. K. Banerjee

## **RESEARCH CONTRACTS AND GRANTS**

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2. G. Mullins (2010). "Design and Construction of Precast Piles with Stainless Reinforcing Steel". Florida Department of Transportation, \$200,000. December 2009 – November 2011, Co-PI R. Sen and A. Sagues.
3. R. Sen, (2009). "Remote Bridge Monitoring", \$233,283. Subcontract from Mistras Group Inc., Princeton Junction, NJ. August 2009 – July 2011. Co-PI G. Mullins, A. Sagues.
4. R. Sen, (2008). "Assessment of Friendship Trail Bridge". Hillsborough County Public Works Department, October – March 2009, \$20,000. Co-PI. G. Mullins
5. R. Sen, (2008). "Development of Double Composite Concept for Steel Box Girder Bridges", Florida Department of Transportation/ Federal Highway Administration, Supplementary Award, January 2008-September 2009, \$65,000.
6. R. Sen, (2007). "Underwater FRP Repair of Corroding Piles Incorporating Cathodic Protection". Transportation Research Board's IDEA Program, October 2007-June 2010, \$92,445. Co-PI G. Mullins
7. R. Sen, (2007). "Oxygen Diffusion Characterization of Fiber Reinforced Polymers", National Science Foundation, REU Supplementary, \$11,994 (until May 2009). Co-PI. V. Bhethanabotla.
8. R. Sen, (2006). USF Travel Grant, "Structural Faults and Repairs Conference, Edinburgh, Scotland, 2006, \$1,500.
9. R. Sen, (2006). "Innovative Underwater FRP Pile Repair", Hillsborough County Public Works Department, October 2006 – September 2008, \$30,000. Co-PI. G. Mullins.

10. R. Sen, (2005). "Development of Double Composite Concept for Steel Box Girder Bridges", Florida Department of Transportation/ Federal Highway Administration, Supplementary Award, 12 month \$80,234.
11. R. Sen, (2005). "Innovative Underwater FRP Pile Repair", Hillsborough County Public Works Department, 12 month, \$25,000. Co-PI. G. Mullins
12. R. Sen, (2005). "Development of Double Composite Concept for Steel Box Girder Bridges", Florida Department of Transportation/ Federal Highway Administration, Supplementary Award, \$94,063.
13. R. Sen, (2004). "Impact of Hurricane Charley on Residential and Commercial Construction", National Science Foundation, Small Grant for Exploratory Research, November 2004-April 2005, \$5,040. Co-PI G. Mullins.
14. R. Sen ,(2004). "Collapse Analysis and Displacement Estimates of Degrading MDOF Structures". Subcontract of NSF project, PI. A. Ayoub, University of Missouri-Rolla, MO, \$26,426.
15. R. Sen, (2004). "Oxygen Diffusion Characterization of Fiber Reinforced Polymers", National Science Foundation, June 2003-2006, \$300,000. Co-PI. V. Bhethanabotla.
16. R. Sen, (2004). "Development of Double Composite Concept for Steel Box Girder Bridges", Florida Department of Transportation/ Federal Highway Administration, 2 year study, \$200,000.
17. R. Sen, (2004). "CFRP Repair and Strengthening of Structurally Deficient Piles", Florida Department of Transportation/ Federal Highway Administration, Supplementary Award, \$91,250. Co-PI. G. Mullins
18. R. Sen, (2003). USF Travel Grant, International Workshop and Conference on Construction Management and Materials, Indian Institute of Technology, Kharagpur, India, 2003, \$1,500.
19. R. Sen, (2002). "NDT Evaluation and Replacement Prioritization of Composite Precast Deck Panel Bridge Decks", Florida Department of Transportation/ Federal Highway Administration, 30 month, \$350,000. Co-PI. G.Mullins, A. Ayoub.
20. R. Sen, (2002). "CFRP Repair and Strengthening of Structurally Deficient Piles", Florida Department of Transportation/ Federal Highway Administration, 2 years, \$250,000. Co-PI. G. Mullins
21. R. Sen, (2003). "CFRP Repair and Strengthening of Structurally Deficient Piles". Florida Department of Transportation, Supplementary Award, 12 month study, \$20,000. Co-PI. G. Mullins.
22. R. Sen, (2000). "CFRP Repair and Strengthening of Structurally Deficient Piles". Florida Department of Transportation, Supplementary Award, 18 months, \$54,600. Co-PI G.Mullins.
23. R. Sen, (2000). College of Engineering Grant, "USF Delegate for Tour of South African Universities, 2000, \$800.
24. R. Sen, (2000). "Wind Resistant Modular Buildings in FRP". Office of Naval Research through Center for Disaster Management (CDMHA, USF). Joint Study with USF's School of Architecture and Community Design, 12 months, \$108,520. Co-PI. G. Mullins, S. Cooke.



25. R. Sen, (1999). "Lateral Capacity Reduction in Corrosion Damaged Pile Bents". Florida Department of Transportation, 30 months, \$200,000. Co-PI G. Mullins.
26. R. Sen, (1998). "Bond Cast-in-Place Concrete and Other Surfaces". Florida Department of Transportation, 24 months, \$150,000. Co-PI G. Mullins.
27. R. Sen, (1998). "Development of New Concept for Long Span Bridges" with Parsons, Brinckerhoff, Tampa. Florida Department of Transportation, \$280,000.
28. R. Sen, (1997). USF Travel Grant, Third International Symposium on Non-Metallic (FRP) Reinforcement for Concrete Structures, Sapporo, Japan, 1997, \$645.
29. G. Mullins, (1997). "Catch Mechanism to Perform Axial Load Test", Federal Highway Administration, Washington, 12 months, \$60,000, Co-PI R.Sen.
30. R. Sen, (1997). "Strength of Repaired Piles". Florida Department of Transportation, 3 years, \$150,000. Co-PI. G. Mullins
31. R. Sen, (1996). USF Travel Grant, Second International Symposium on Non-Metallic (FRP) Reinforcement for Concrete Structures, Ghent, Belgium, 1996, \$695.
32. R. Sen, (1996). "Structural Repair of Corroded Piles in a Marine Environment", Florida Department of Transportation, 3 year study, \$175,562. Co-PI G. Mullins
33. R. Sen, (1995). USF Travel Grant, First International Conference on Fibre Reinforced Structural Plastics in Civil Engineering, Madras, India, 1995, \$875.
34. R. Sen, (1995). "Durability of Epoxy Bond with Concrete". Florida Department of Transportation, \$19,950.
35. R. Sen, (1994). "Durability of Fiberglass in Alkaline Environment". US Army Corp of Engineers, Vicksburg, 18 month, \$29,190.
36. R. Sen (1994). "Investigation of Bond between Aramid and Carbon in Pretensioned Elements", Florida Department of Transportation/ Federal Highway Administration, 2 year study, \$95,561.
37. R. Sen, (1994). "Non-linear Analysis of Structures Strengthened by Advanced Composites". Florida Department of Transportation, 6 month, \$9,975.
38. R. Sen, (1993). "Bridge Strengthening Using Advanced Composites". Florida Department of Transportation, 12 month, \$25,739.
39. R. Sen, (1992). "Durability of Non-Metallic Tendons in a Marine Environment", Florida Department of Transportation / Federal Highway Administration, 24 months, \$172,812.
40. R. Sen, (1991). "Masonry Design Aids". Florida Concrete Products Association, Orlando (3 awards), 6 month, \$8,079.
41. R. Sen, (1991). "Restraint Effect of Bridge Bearings". Florida Department of Transportation / Federal Highway Administration, 1 year, \$47,174.
42. R. Sen, (1989). "Feasibility of Using Fiberglass Prestressed Piles in a Marine Environment". Florida Department of Transportation / Federal Highway Administration, 3 year study, \$300,638.

43. R. Sen, (1988). "Computer Analysis of Voided Slab Bridges". Florida Dept of Transportation, 1 year, \$42,925.
44. R. Sen, (1988). "Micro-pile load tests", Florida Grouting, Tampa, 1 year, \$12,800.
45. L. Oline (1986). "Analytical and Experimental Investigation of Continuous, Post-Tensioned, Voided Slab Bridges", Florida Department of Transportation (3 awards), 4 year study, \$320,757, Co-PI R.Sen.
46. R. Sen, (1986). "Non-linear Finite Element Analysis of Reinforced and Prestressed Structures", President's Council Award, USF, \$4,155.

## TECHNICAL PRESENTATIONS

### A. Invited Presentations

1. R. Sen (with G. Mullins), "Corrosion Repair Using FRP". ICERP 2011, Mumbai, India March 2011 (unable to present).
2. R. Sen, "Reflections on the Big Beam Contest". Presentation to FPCA, Tampa, FL, October 29, 2010.
3. R.Sen, "Sustainable Infrastructure Materials for the 21<sup>st</sup> Century". National Science Foundation, CMMI, Arlington, VA, August 12, 2010.
4. R. Sen, "Fatigue in Double Composite Box Girders". ACI Spring Convention, Chicago, IL. Presentation to ACI Committee 215, March 21, 2010.
5. R. Sen (with G. Mullins and A. Sagues), "Remote Monitoring of Bridges in the Everglades". ACI Spring Convention, Chicago, IL, March 23 2010. (Presentation given by J. Aguilar).
6. R. Sen, "Design and Evaluation of Steel Bridges with Double Composite Action". Presentation to Structures Group, Florida Department of Transportation, Burns Building, Tallahassee, FL, September 25, 2009 (with N. Pai, P. Patel, S. Stroh, D. Golabek).
7. R. Sen, "Role of Pre-Wrap Repair on FRP Corrosion Mitigation Performance". ACMA, Construction, Corrosion and Infrastructure Conference, Las Vegas, NV, April 30, 2009.
8. R. Sen, "*USF Perspective on the Big Beam Contest*". Presentation to Florida Concrete Products Association's Education Committee. Winter Meeting, Lake Mary, FL, January 14, 2009.
9. R. Sen, "*Remote Bridge Monitoring*". Presentation to Review Panel, Florida Department of Transportation Research Panel, Tallahassee, FL, January 7, 2009 (with G. Mullins, R. Gostautus).

10. R. Sen, “*New Directions in Infrastructure Repair*”. Presentation at USF-BASF Seminar on Waterproofing Structures on Florida's Gulf Coast and Concrete Restoration and Protection. TECO Room, University of South Florida, Tampa, August 13, 2008.
11. R. Sen, “*Underwater Repair of Corroding Piles Incorporating Cathodic Protection*”. Presentation to NCHRP Committee, Wood’s Hole, MA, June 13, 2008.
12. R. Sen, “*FRP Repair of Corroding Piles in a Marine Environment*”. Presentation at the International Conference and Exhibition on Reinforced Plastics, ICERP 2008, Bombay, India, February 9, 2008.
13. R. Sen, “*Curving Steel Bridge Girders by Cold Bending*”. Presentation at the World Steel Bridge Symposium, New Orleans, December 6, 2007.
14. R. Sen, “*New Directions in Infrastructure Repair*”. Presentation at 3<sup>rd</sup> Annual LEAP User Conference, St. Petersburg FL, December 3, 2007
15. R. Sen, “*Monitoring Steel Corrosion in FRP Wrapped Prestressed Specimens*”. Presentation at the ASNT 16<sup>th</sup> Annual Research Symposium, Orlando, March 28, 2007.
16. R. Sen, “*Developments in Underwater FRP Repair of Corroding Piles*”. Bakht Symposium at ICRACM, New Delhi, February 20-23, 2007.
17. R. Sen, “*Corrosion Monitoring of FRP Wrapped Piles*”. Presentation at the ASNT 15<sup>th</sup> Annual Research Symposium, Orlando, FL March 15, 2006.
18. R. Sen, “*Underwater FRP Repair of Corroding Piles*”, Department of Civil Engineering, University of California, Irvine, November 21, 2005.
19. R. Sen, “*Steel Bridges with Double Composite Action*”. Presentation to Ordine Degli Ingegneri, Catania, Italy, May 13, 2005.
20. R. Sen, “*Underwater FRP Repair of Corroded Piles*”. Presentation, Department of Civil Engineering, University of Catania, Catania, Italy, May 12, 2005.
21. R. Sen, “*Deck Panel Bridge Study*”. Florida Department of Transportation, R&D Meeting, Tampa, FL, December 8, 2004.
22. R. Sen, “*Underwater FRP Wrap Application*”. ICRI, Florida West Coast Chapter, Clearwater, FL, Dec 1, 2004.
23. R. Sen, “*Use of FRP for Corrosion Mitigation of Piles*”. ACMA, Composites 2004, Tampa, FL, Oct. 7, 2004.
24. R. Sen, “*Cold Straightening I-Girders*”. FHWA Workshop on Heat Straightening, US Army Corp of Engineers, Jasper, TX, February 10, 2004.
25. R. Sen, “*Advances in the Application of FRP for Corrosion Mitigation*”. International

- Centre for Fibre Reinforced Concrete Composites, Chennai, India, January 8-10, 2004.
26. R. Sen, “*New Directions in Infrastructure Research*”, ACI-USF Annual Meeting, Suncoast Chapter, Tampa, FL, January 8, 2004.
  27. R. Sen, “*Cold Bending Steel Girders - How and Why*”. Steel Bridge Symposium, National Steel Bridge Alliance, Orlando, FL, November 21, 2003.
  28. R. Sen, “*Simplified Analysis of Heat Curved Steel Girders*”, Presentation to Committee A2F07, Fabrication and Inspection of Metal Structures, TRB 82<sup>nd</sup> Annual Meeting, Washington, DC, January 14, 2003. Presentation made by A. Gergess.
  29. R. Sen, “*Repairing Corrosion Damaged Piles Using FRP*”. **Plenary Lecture**, CONMAT 2003, Indian Institute of Technology, Kharagpur, India, January 9, 2003.
  30. R. Sen, “*Repairing Settlement Damage in Block Walls Using CFRP*”, Caribbean Engineer Conference, Sponsored by USSOUTHCOM, Punta Cana, Dominican Republic, May 9, 2002.
  31. R. Sen, “*CFRP Wrapping to Mitigate Corrosion*”, Presentation to ACI Committee 444, Detroit, MI April 22, 2002.
  32. R. Sen, “*Cold Bending Research Needs*, Presentation to AASHTO / NSBA Research and Technology Sub-Committee TG7, Orlando, FL, April 11, 2002.
  33. R. Sen, “*Seal-Slab: Full-Scale Testing*”, Presentation to ACI Committee 444, Dallax, TX, October 29, 2001.
  34. R. Sen, “*Use of Alternative Technology for Rapid Deployment Structures*”, Caribbean Engineer Conference, Sponsored by USSOUTHCOM, Nassau, Bahamas, June 6, 2001.
  35. R. Sen, “*After the Hurricane: Rapid Deployment Shelter*, Center for Disaster Management and Humanitarian Assistance, College of Public Health, Conference, Tampa, FL, June 22-23 2000.
  36. R. Sen, “*CFRP Studies in Strengthening and Durability*”, Department Lecture Series, University of Illinois, Chicago, IL, April 28, 2000.
  37. R. Sen, “*Settlement Repair of Lightly Reinforced Concrete Block Walls Using CFRP*”, California State University, Fullerton, CA, March 22, 2000.
  38. R. Sen, “*Strengthening Concrete Block Walls with Carbon-Fiber Reinforced Polymers*“, American Concrete Institute, Florida Suncoast Chapter, Tampa, FL, February 8, 2000.
  39. R. Sen, “*Prestressing in Marine Applications*”. Second Composites Durability Study Workshop, International Composites Exposition (ICE’99), Civil Engineering Research Foundation (CERF), Cincinnati, Ohio, May 10, 1999.

40. R. Sen, “*Development of a Double Composite Steel Bridge Concept*”. Joint ASCE Steel Bridge Committee, ASCE Structures Congress, New Orleans, LA, April 18, 1999.
41. R. Sen, “*Durability of Advanced Composites in a Marine Environment*”. LATINCORR 98, Third NACE Latin American Region Corrosion Congress, August 31, 1998, Cancun, Mexico.
42. R. Sen, “*Capacity of Damaged Columns in Compression and Bending*”. Florida Department of Transportation, 1998 Annual Maintenance Conference, Fort Lauderdale, FL, May 6, 1998.
43. R. Sen, “*Strengthening Concrete Block Walls using CFRP*”. US Army Corp of Engineers, Vicksburg, MS, October 29 1997.
44. R. Sen, “*A Decade of Progress: Infrastructure Research at USF 1986-96*”. Flom Inaugural Lecture to Joint meeting of ACI, ASCE and FES, Tampa, FL, April 10, 1997.
45. R. Sen, “*Testing of Concrete Block Walls*”, Florida Engineering Society, Tampa, FL, November 13, 1995.
46. R. Sen, “*Durability Research in Florida*”, Second University-Industry FRP Research Workshop, Toronto, Canada, March 24-26, 1995.
47. R. Sen, “*FRP Research in Florida*”, FHWA Workshop, Washington, D.C., January 8, 1994.
48. R. Sen, “*The Florida Masonry Design Manual*”, Annual Meeting of the Masonry Society, **Keynote Lecture** (with Harrington, J), Orlando, FL, February 8, 1992.

## **B. Conference Presentations**

1. Sen, R., Mullins, G., Aguilar, J. and Winters, D. (2011). “Advances in Corrosion Repair of Piles Using FRP”. FRPRCS10 Symposium, ACI Spring Convention, Tampa FL. Presentation by Julio Aguilar on April 3.
2. Khoe, C., Sen, R. and Bhethanabotla, V. (2011). “Characterization of FRP as an Oxygen Barrier”. FRPRCS10 Symposium, ACI Spring Convention, Tampa FL. Presentation by Chandra Khoe on April 2.
3. Gualtero, I., Sen, R, Pai, N., A. Alvi, A. and Mullins, G. (2010). "Prioritization Strategy for Replacing Florida's Deck Panel Bridges". 34th International Symposium on Bridges and Structural Engineering, Large Structures and Infrastructures for Environmentally Constrained and Urbanized Areas. Venice, Italy, Presentation by R. Sen on September 23, Session 5C.
4. Gergess, A. and Sen, R. (2010). ““Non-Linear Analysis of High Performance Steel Plate Girders Subjected to Weak Axis Bending””. Proceedings of the 10<sup>th</sup> International Conference on Computational Structures Technology, Valencia, Spain. Presentation by A.

Gergess on September 16.

5. Aguilar, J., Winters, D., Mullins, G., Sen, R. and Stokes, M. (2010). "Pressure Bagging for Repairing Corroding Piles Using FRP". ICCE-18, Anchorage, AL. Presentation by R.Sen on July 7.
6. Winters, D., Aguilar, J., Sen, R., Mullins, G. and Stokes, M. (2010). "Improving FRP-Concrete Bond in Pile Repair". SAMPE Europe, 31<sup>st</sup> Technical Conference and Forum April12-14, Paris, France. Presentation by R. Sen on April 12.
7. Chowdhury S., Bhethanabotla V.R., and Sen, R. (2009), "*Fluorescence Quenching of CdSe/ZnS Nanocrystals by Binding to Copper Nanoparticles*". Materials Research Society, Boston, MA, Presentation by S. Chowdhury on December 2.
8. Chowdhury S., Bhethanabotla V.R., and Sen, R. (2009), "*SPR Tuning of Silver-Copper Alloy Nanoparticles: Application in Metal Enhanced Luminescence*". Materials Research Society, Boston, MA, Presentation by S. Chowdhury on December 1.
9. Chowdhury S, Bhethanabotla V, and Sen R. (2009). "*Fluorescence Quenching of CdSe/ZnS Nanocrystals near Copper Nanoparticles in Aqueous Solution*". AIChE Annual Meeting, Nashville, TN, 2009. Presentation by S. Chowdhury on November 12.
10. Chowdhury S, Bhethanabotla V, and Sen R. (2009). "*Composition Effect of Ag-Cu Alloy Nanoparticles on Luminescence Enhancement/Quenching of Vicinal Luminophores*". AIChE Annual Meeting, Nashville, TN, 2009. Presentation by S. Chowdhury on November 11.
11. Aguilar, J., Winters, D., Mullins, G. and Sen, R. (2009). "*Monitoring Performance of Cathodically FRP Repaired Piles*". ACI Fall Convention, New Orleans. Presentation by J. Aguilar on November 11.
12. Patel, P., Sen, R., Pierresaint, V. and Mullins, G. (2009). "*Performance of New Homes in a Category 4 Hurricane*". IABSE Symposium on Sustainable Infrastructure, Bangkok, Thailand, Presentation by R. Sen on September 9.
13. Gergess, A. and Sen, R. (2009). "*Implication of Increased Live Load on the Design of Prestressed Continuous Concrete Bridges*". 5<sup>th</sup> New York City Bridge Conference, New York, NY. Presentation by A. Gergess on August 18.
14. Winters, D., Mullins, G., Stokes, M. and Sen, R. (2009). "*Development of Vacuum / Pressure Bagging System for FRP Repair*". Fifth International Conference on Construction in the 21<sup>st</sup> Century (CITC-V), Istanbul, Turkey. Presentation by R. Sen on May 20.
15. Suh, K., Sen, R., Mullins, G. and Winters, D. (2009). "*Effectiveness of FRP in Reducing Corrosion in a Marine Environment*". US Army Corrosion Summit, Clearwater, FL. Presentation by R. Sen on February 5.
16. Khoe, C., Bhethanabotla V.R., and Sen, R. (2009), "*A New Diffusion Cell for Characterizing Oxygen Permeation in Fiber Reinforced Polymers*". COMPOSITES & POLYCON 2009,

- American Composites Manufacturers Association, Presentation by C. Khoe on January 16.
17. Aguilar, J., Winters, D., Sen, R., Mullins, G. and Stokes, M. (2009), "*Improvement in FRP-Concrete Bond by External Pressure*". TRB 88<sup>th</sup> Meeting, Washington, DC. Presentation by R. Sen on January 12.
  18. Chowdhury S., Bhethanabotla V.R., and Sen, R. (2008), "*Silver-Copper Alloy Nanoparticles for Metal Enhanced Luminescence*", AIChE Annual Meeting, Philadelphia, PA, United States, Presentation by S. Chowdhury on November 19.
  19. Chowdhury, S.; Bhethanabotla, V. R. and Sen, R. (2008), "*Aluminum and Copper Nanostructures for Metal Enhanced Luminescence*", AIChE Annual Meeting, Philadelphia, PA, United States, Presentation by S. Chowdhury on November 20.
  20. Sen, R., Gualtero, I, Pai, N. and Mullins, G. (2008). "*Prioritization Strategy for Replacing Florida's Deck Panel Bridges*", 10<sup>th</sup> International Bridge and Structure Management Conference, TRB/NRC, Buffalo, NY. Presentation by R. Sen on Oct. 21.
  21. Gergess, A. and Sen, R. (2008). "*Finite Element Modeling for Heat-Curved Steel Girders*", IABSE Conference, ICT for Bridges, Buildings and Construction Practice, Helsinki, Finland. Presentation by R. Sen on June 6.
  22. Gergess, A. and Sen, R. (2008). "*Cold Bending Steel Girders*", TRB, 87<sup>th</sup> Annual Meeting, Washington, DC, Presentation by A. Gergess on Jan 16.
  23. Chowdhury S, Bhethanabotla VR, and Sen R. (2007). "*Measurement of Diffusion and Permeation Coefficients of Oxygen in Polymer based on Luminescence Quenching*", AIChE Annual Meeting, Salt Lake City, Utah. Presentation by S. Chowdhury on November 6.
  24. Chowdhury S, Hirai M, Bhethanabotla VR, Kumar A, and Sen R. (2007). "*Silver-Copper Nanoparticles Platform for Metal-Enhanced Luminescence*". AIChE Annual Meeting, Salt Lake City, Utah. Presentation by S. Chowdhury on November 5.
  25. Sen, R. and Mullins, G. (2007). "*Further Developments in Underwater FRP Pile Repair*". COMPOSITES & POLYCON 2007, American Composites Manufacturers Association, Tampa, FL. Presentation by R. Sen on October 18.
  26. Chowdhury, S., Bhethanabotla, V. and Sen, R. (2007). "*Measurement of Diffusion Coefficient of Oxygen in FRP using Luminescence Quenching*". COMPOSITES & POLYCON 2007, American Composites Manufacturers Association, Tampa, FL, Presentation by S. Chowdhury on October 17.
  27. Sen, R. and Mullins, G. (2007). "*New Developments in Underwater Pile Repair Using Fiber Reinforced Polymers*". 5<sup>th</sup> International Conference on Current and Future Trends in Bridge Design, Construction and Maintenance, Beijing, China. Presentation by R. Sen on September 17.

28. Gergess, A. and Sen, R. (2007). “*Heat Curving HPS 485W Bridge I-Girders*” 2007 New York City Bridge Conference Manhattan, NY. Presentation by A. Gergess on August 27.
29. Sen, R., Mullins, G., Suh, K.S. and Winters, D. (2007). “*Performance of FRP in Reducing Corrosion in Prestressed Elements*”. ISOPE Conference, Lisbon, Portugal, Presentation by R. Sen on July 4.
30. Suh, K.S., Mullins, G. Sen, R. and Winters, D.. (2007). “*Corrosion Monitoring of FRP Wrapped Piles*”, CDCC 2007, Third International Conference on Durability of Fibre Reinforced Polymer Composites for Construction, Quebec City, Canada, Presentation by R.Sen on May 24.
31. Sen, R. and Mullins, G. (2007). “*Advances in Underwater Pile Repair Using FRP*”, COBRAE Conference 2007, University of Stuttgart, Germany, March 28-30. Presentation by R. Sen on March 30.
32. Sen, R., Mullins, G. and Shahawy, M. (2007). “*CFRP Repair and Strengthening of Structurally Deficient Piles*”. TRB, 86<sup>th</sup> Annual Meeting, Washington, DC, Jan 21-25.
33. Gergess, A. and Sen, R. (2006). “*Adoption of High Performance Steel for Curved Bridge Structures*”, International Conference on Civil Engineering Infrastructure Systems (CEIS 2006), American University Beirut, Beirut, Lebanon. Presented by A. Gergess, June 13.
34. Sen, R., Mullins, G., Suh, K.S. and Winters, D. (2006). “*Underwater FRP Repair of Corroded Piles*”. Structural Faults + Repair - 2006, Edinburgh, Scotland. Presented by R. Sen, June 13.
35. Sen, R., Mullins, G., Suh, K.S. and Winters, D. (2006). “*Repair of Reinforced Piles Using FRP*”. 2006 Concrete Bridge Conference, Reno, NV. Presented by R. Sen, May 9.
36. Sen, R., Mullins, G., Suh, K.S. and Winters, D. (2005). “*FRP Application for Underwater Repair of Corroded Piles*”. FRPRCS-7 Symposium Session, ACI Fall Convention, Kansas City MO. Presentation by R. Sen, November 8.
37. Sen, R., Mullins, G., Suh, K.S. and Winters, D. (2005). “*Corrosion Monitoring of FRP Wrapped Piles*”. ACI Fall Convention, Kansas City MO. Presentation by R. Sen, November 6.
38. Alvi, A., Gualtero, I., Pai, N., Sen, R. and Mullins, G. (2005). “*Role of Construction in the Poor Performance of Deck Panel Bridges*”. 3<sup>rd</sup> International Conference on Construction in the 21<sup>st</sup> Century, Athens, Greece. Presentation by R. Sen, September 16.
39. Sen, R., Mullins, G., Suh, K.S. and Winters, D. (2004). “*Long Term Corrosion Monitoring of Underwater FRP Wrapped Prestressed Piles*”. 3<sup>rd</sup> European Conference on Structural Control, Vienna, Austria. Presentation by R. Sen, July 15.
40. Sen, R. and Mullins, G. (2004). “*Use of FRP for Corrosion Mitigation of Piles*”. 83<sup>rd</sup> Annual Meeting of TRB, Washington, DC. Presentation by R. Sen, January 12.



41. Mullins, G., Fischer, J., Sen, R. and Issa, M. (2003). “*Improving Interface Bond in Pile Repair*”. Presented by R. Sen at the Second International Conference on Structural and Construction Engineering, September 23, Rome, Italy.
42. Sen, R., Mullins, G., Suh, K.S. and Goulish, A. (2003). “*FRP Repair of Corrosion Damaged Piles in Tidal Waters*”. Presented by R. Sen at the Thirteenth International Offshore and Polar Engineering Conference, Honolulu, Hawaii, May 26.
43. Mullins, G., Sen, R., Sosa, R. and Issa, M. (2003). “*Full-Scale Testing of Seal Slab / Pile Interface Bond*”. Presented by G. Mullins at the ACI Spring Convention, Vancouver, Canada, March 26.
44. Mullins, G., Fischer, J., Sen, R. and Issa, M. (2003). “*Effectiveness of Powder Actuated Nails in Piles Repair*” Presented by R. Sen at the International Conference on Performance of Construction Materials in the New Millennium, February 18, Cairo, Egypt.
45. Mullins, G., Sosa, R., Sen, R. and Issa, M. (2002). “*Interface Bond in Sal Slabs from Full-Scale Testing*”. Presented at the First International Conference on Bridge Maintenance, Safety and Management by R. Sen, July 16, Barcelona, Spain.
46. Mullins, G., Sen, R., Suh, K.S., Goulish, A. and Torres-Acosta, A. (2002). “*Evaluation of Transverse Strain in Corroding Square Prestressed Concrete Elements*”. Presented at the 47<sup>th</sup> International SAMPE Symposium and Exhibition-Science of Advanced Materials and Process Engineering Series by K S Suh, May 15, Long Beach, CA.
47. Sen, R. (2001). “*Durability of Advanced Composites*”, Special Durability Session. Presented at the CICE Conference, Dec 12-15, Hongkong, China.
48. Fischer, J., Mullins, Sen, R. and Issa, M. (2001). “*Studies on the Use of Powder Actuated Nails in Pile Repair*”. Presented at the ASCE National Convention by J. Fischer, Oct 10-14, Houston, TX.
49. Sen, R., Shahawy, M., Mullins, G. and Spain, J. (2001). “*Effect of Environment on the Integrity of CFRP/Concrete Bond*”. Presented at the Eleventh International Offshore and Polar Engineering Conference by R. Sen, June 18-22, Stavanger, Norway.
50. Bradford, N., Sen, R. and Mosallam, A. (2001). “*Development of New Modular Composite Panel*”. Presented at the 46<sup>th</sup> International SAMPE Symposium and Exhibition-Science of Advanced Materials and Process Engineering Series by N. Bradford, May 7-10, Long Beach, CA.
51. Gergess, A. and Sen, R. (2001). “*Inelastic Response of Simply Supported I-Girders Subjected to Weak Axis Bending*”. Presented at the International Conference on Structural Engineering, Mechanics and Computation by A. Gergess, April, Cape Town, South Africa.
52. Sen, R., Shahawy, M., Mullins, G. and Spain, G. (2000). “*Durability of CFRP/Epoxy Concrete Bond*”. Presented at ACUN-2, International Composites Conference Composites in the Transportation Industry by R. Sen, February, Sydney, Australia.

53. Sen, R. and Bradford, N. (2000). "*Wind Resistant Modular Shelters*". Presented at the CDMHA Conference by R. Sen, June 23, Tampa, FL.
54. Mullins, G., Sen, R., Engebretson, D. and Hartley, A. (2000). "*CFRP Repair of Settlement Damaged Concrete Block Walls*". Presented at the Third International Conference on Advances in Composites ADCOMP-2000, 24-26 August 2000 by R. Sen, Bangalore, India.
55. Mullins, G., Race, R. and Sen, R. (1999). "*A New Device for In-Situ Testing of FRP/Concrete Adhesion*". Presented at the Fourth International FRP Symposium by R. Race, October, Baltimore, MD.
56. Mullins, G., Sen, R. and Spain, J. (1998). "*Testing of CFRP/Concrete Bond*". Presented at the Second International Conference on Composites in Infrastructure by J. Spain, January, Tucson, AZ.
57. Sen, R., Shahawy, M., Rosas, J. and Sukumar, S. (1998). "*Effect of Tidal Exposure on Bond of CFRP Rod*". Presented at the Second International Conference on Composites in Infrastructure by S. Sukumar, January, Tucson, AZ.
58. Sen, R., Shahawy, M., Rosas, J. and Sukumar, S. (1997). "*Durability of AFRP & CFRP Pretensioned Piles in a Marine Environment*". Presented at the Third International Symposium on Non-Metallic (FRP) Reinforcement for Concrete Structures by R. Sen, October, Sapporo, Japan.
59. Sen, R., Shahawy, M., Rosas, J. and Sukumar, S. (1997). "*Durability of Aramid in Piling Applications*". Presented at the US-Canada-Europe Bridge Workshop by R. Sen, July, Zurich, Switzerland.
60. Engebretson, D., Sen, R., Mullins, G. and Hartley, A. (1996). "*Strengthening Concrete Block Walls with Carbon Fiber*". Presented at the Materials for the New Millennium, ASCE Conference by R. Sen, November, Washington, DC.
61. Sen, R., Liby, L., Mullins, G. and Spillett, K. (1996). "*Strengthening Steel Composite Beams with CFRP Laminates*". Presented at the Materials for the New Millennium, ASCE Conference by R. Sen, November, Washington, DC.
62. Sen, R., Rosas, J., Mullins, G., Liby, L., Sukumar, S. and Spillett, K. (1996). "*Field Measurement of Transfer Length*". Presented at the First International Conference on Composites in Infrastructure by R. Sen, January, Tucson, AZ.
63. Sen, R. and Shahawy, M. (1995). "*Durability Testing of Fibre Reinforced Plastics*". Presented at the International Conference on Fibre Reinforced Structural Plastics in Civil Engineering by R. Sen, December, Madras, India.
64. Sen, R., Liby, L., Spillett, K. and Mullins, G. (1995). "*Strengthening Steel Composite Bridge Members Using CFRP Laminates*". Presented at the Second International Conference on FRP by R. Sen, August, Ghent, Belgium.

65. Sen, R., Rosas, J., Sukumar, S. and Shahawy, M. (1995). “*Durability and Bond of AFRP and CFRP Pretensioned Elements*”. Presented at the ACI National Convention by R. Sen, November, Minneapolis, MN.
66. Sen, R., Mariscal, D., Spillett, K. and Shahawy, M. (1994). “*Corrosion in Steel Pretensioned Beams under Simulated Tides*”. Presented at the International Conference on Corrosion and Corrosion Protection of Steel in Concrete by K. Spillett, July, Sheffield, England.
67. Sen, R., Liby, L., Spillett, K. and Shahawy, M. (1994). “*Bridge Rehabilitation using Advanced Composites*”. Presented at the 39th International SAMPE Symposium and Exhibition by R. Sen, April, Anaheim, CA.
68. Sen, R. and Shahawy, M. (1994). “*Application of Advanced Composites for Highway Structures -Florida's Experience*”. Presented at the Infrastructure: New Materials and Methods for Repair, Third Materials Engineering Conference by R. Sen, ASCE, November, San Diego, CA.
69. Sen, R., Mariscal, D., Issa, M. and Shahawy, M. (1993). “*Durability and Ductility of Fiber Reinforced Plastics*”. Presented at the *Structural Engineering in Natural Hazards Mitigation*, ASCE Structures Congress by R. Sen, April, Irvine, CA.
70. Sen, R., Mariscal, D. and Shahawy, M. (1993). “*Investigation of S-2 Glass/Epoxy Strands in Concrete*”. Presented at the International Symposium on FRP Reinforcement for Concrete Structures by R. Sen, March, Vancouver, Canada.
71. Shahawy, M. and Sen, R.(1992). “*Feasibility of Fiberglass Pretensioned Piles in Marine Environment*”. Presented at the Annual Meeting of the Transportation Research Board by R. Sen, January, Washington, DC.
72. Sen, R. and Mariscal, D. (1992). “*Durability of S-2 Glass Pretensioned Piles*”. Presentation by R. Sen to ACI Committee 440, March, Washington, DC.
73. Sen, R., Issa, M., Shahawy, P. and Wadsack, P. (1992). “*Driving Stresses in Fiberglass Pretensioned Piles*”. Presented at the ACI Spring Convention by R. Sen, March, Washington, DC.
74. Sen, R., Issa, M, Mariscal, D. (1992). “*Feasibility of Fiberglass Pretensioned Piles*”. Presented at the Third NSF Workshop on Bridge Engineering Research in Progress by R. Sen, November, San Diego, CA.
75. Sen, R., Iyer, S., Issa, M. and Shahawy, M. (1991). “*Fiberglass Pretensioned Piles in Marine Environment*”. Presented at the ASCE Specialty Conference on Advanced Composite Materials in Civil Engineering by R. Sen, January-February, Las Vegas, NV.
76. Issa, M., Sen, R. and Amer, A. (1991). “*Transfer Length of Fiberglass Pretensioned Elements*”. Presented at the ACI Fall Convention by M. Issa, November, Dallas, TX.

77. Sen, R., Gerges, A. and Sun, X. (1990). "*Analysis of Prestress Effects in Continuous, Curved, Prestress Girders*". Presented at the International Conference on Developments in Short and Medium Span Bridges by A. Gerges, August, Toronto, Canada.
78. Issa, M., Sen, R. and Oline, L. (1990). "*Testing of Continuous Post-tensioned Voided Slab Bridges*", Presented by R. Sen at the Second NSF Sponsored Workshop on Bridge Engineering Research in Progress, October, Reno, NV.
79. Sen, R. and Hodge, D. (1989). "*Ultimate Moment Capacity of Longitudinally and Transversely Prestressed Sections*". Presented by R. Sen to TRB Committee A2C03 Concrete Bridges, 68th Annual Meeting of Transportation Research Board, January, Washington, D.C.
80. Sen, R. and Hodge, D. (1989). "*Ultimate Strength of Longitudinally and Transversely Prestressed Sections*". Presented by R. Sen at the 12th Canadian Congress of Applied Mechanics, June, Ottawa, Canada.
81. Sen, R. and Hodge, D. (1988). "*Ultimate Strength of Longitudinally and Transversely Prestressed Members*". Presented by R. Sen at the ACI Spring Convention, March, Orlando, FL.
82. Issa, M. and Sen, R. (1988). "*Collapse Analysis for Curved Continuous Post-Tensioned Bridge*". Presented by R. Sen at the ACI Spring Convention, March, Orlando, FL.
83. Sen, R. (1988). "*Grillage Analysis of Skew Slabs*". SECTAM XIV, April, Biloxi, MS.
84. Sen, R. and Hodge, D. (1988). "*Strength Design of Continuous Curved Voided Slab Bridges*". Presented by R. Sen at the Bridge Research in Progress Conference, Sponsored by NSF and Iowa State University, September, Des Moines, Iowa.
85. Sen, R. (1987). "*Interaction Factor Analysis for Harmonically Loaded Vertical Piles*". Presented by R. Sen at the 11th Canadian Congress of Applied Mechanics, May/June, Edmonton, Alberta, Canada.
86. Sen, R., and Steijlen, P. R. (1987). "*A Comparative Study of Code Requirements for the Design of Precast, Prestressed Concrete Short Span Bridges*". Presented by R. Sen at the 20th Midwestern Mechanics Conference, Purdue University, West Lafayette, Indiana.
87. Sen, R. and Banerjee, P.K. (1986). "*Green's Function Implementation for Pile Analysis*". Presented by R. Sen at the Third ASCE Engineering Mechanics Specialty Conference, April, Los Angeles, CA.
88. Sen, R., Davies, T.G. and Banerjee, P.K. (1986). "*Dynamic Boundary Element Analysis of Laterally Loaded Piles in Non-Homogeneous Medium*". Presented by R. Sen at SECTAM XIII, April, Columbia, SC.
89. Sen, R., and Banerjee, P.K. (1985). "*Dynamic Pile Group-Pile Cap Interaction using the Boundary Element Method*". Presented by R. Sen at the 19th Midwestern Mechanics

Conference, Ohio State University, September, Columbus, Ohio.

90. Davies, T.G., Sen, R. and Banerjee, P.K. (1984). “*Dynamic Analysis of Axially Loaded Pile Groups*”. Presented by T. Davies at the ASCE Specialty Conference, September, Minneapolis, MN.
91. Sen, R. (1975). “*Idealisation of Bridge Decks*”. Conference on Computerised Bridge Design, June, Bristol, England.
92. Sen, R. (1975). “*GRIDS - A Grillage Program*”. Conference on Computerised Bridge Design, June, Bristol, England.
93. Hrennikoff, A., C.I. Mathew, and Sen, R. (1971). “*Stability of Cylindrical Shells by the Use of Rectangular Bar Cells.*” Presented by A. Hrennikoff at the International Assoc. of Shell Structures, Symposium on Hydromechanically Loaded Shells, October, Hawaii.

## CONTINUING EDUCATION

### A. Design

- *ASCE 7-05: Minimum Design Loads for Buildings and Bridges*, Webinar, December 2005
- *Connector Workshop*, Simpson Strong-Tie, Jacksonville, FL May 2005
- *Fundamentals of Post-Tensioning*, Post-Tensioning Institute, Tampa, October 2004
- *Repair of Concrete, Workshop*, ACI Educational Seminar, Tampa, FL, December 2002
- *Structural Masonry Code Seminar*, ACI Educational Seminar, Tampa, FL, Nov 2002
- *Wood Solutions Fair*, Tampa, FL, Oct 24, 2002
- *Seminar on ACI 318-02*, Tampa, FL, June 12-13, 2002
- *Design and Construction Guidance for Community Shelters*, ASCE, Orlando, Jan. 2001
- *Georgia Steel Bridge Forum*, Georgia Tech University, Atlanta, GA, December, 2000
- *How to Design Masonry Structures*, ACI Educational Seminar, NY, NY, Nov 2000
- *Structural Masonry Code*, ACI Educational Seminar, Tampa, FL, November 1999
- *LRFD Workshop for Highway Bridges*, Tampa, FL, September 1997
- *Seminars on ACI 318-89, 318-95*, Tampa, FL, 1990, 1996
- *Professors’ Seminar*, PCA, Skokie, IL, Aug. 1995
- *Structural Masonry Code*, ACI Educational Seminar, Miami, FL, 1992
- *University Professors Masonry Workshop*, University of Colorado, Boulder CO, 1988
- *Design of Hollow Core Slabs*, Tampa, FL 1987
- *Engineering for Extreme Winds*, Texas Tech University, Dallas, TX, November 1986
- *Lectures on Concrete Design*, ACI Suncoast Chapter, Tampa, FL, March/April 1986
- *Concrete Pipe Design Seminar*, Tampa, FL, May 1985
- *Teaching Prestressed Concrete*, by Dr. Collins & Dr. Mitchell, Boston, MA, Jan. 1985
- *Structural Design of Welded Joints*, Welding Institute, Cambridge, England, Oct 1981
- *Steel Design*, Polytechnic of Central London, 1973-74
- *Concrete Bridge Design II*, Cement and Concrete Assoc, Slough, Bucks, UK, March 1973
- *Concrete Bridge Design I*, Cement and Concrete Assoc, Slough, Bucks, UK, Oct 1972

**B. Analysis**

- *Finite Element Analysis*. Course by Dr. Hinton & Dr. Owen, University of Wales, Swansea, January 1979.
- *Numerical Analysis*. Course of Lectures, Mathematics Department, City University, London, UK, 1978.
- *Databases*. Course of Lectures, Polytechnic of Central London, London, UK, 1977.

**C. Teaching**

- *Effective Teaching: A Workshop*, R. Felder and R. Brent, NC State, Tampa, FL March 2000
- *Ethics in the Curriculum*, Michael Davis, Illinois Institute of Technology, Tampa, February 1999
- *Writing in the Engineering Curriculum*, Molly Johnson, Texas A & M, Tampa, October 1998
- *Cooperative Learning Workshop*, Dan Budny, Purdue University, Tampa, March 1998

**D. Accreditation**

- *ABET Faculty Workshop on Sustainable Assessment Processes*, Tampa FL, February 2011.