

Hani G. Melhem, Ph.D., P.E., F. ASCE.

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CAREER HIGHLIGHTS

- **Undergraduate Program Director** for Civil Engineering at KSU (from Fall 2005 to present)
- Martin K. Eby Distinguished Professor in Engineering: (2004-07)
- Instructor of 15 different undergraduate and graduate engineering courses at K-State
- In charge of planning, construction, and development of a full-scale testing facility at KSU (1994-96)
- **Director** of this major testing facility: Testing Lab for Civil Infrastructure (1997-2000)
- **Originator and Director** of the annual Bridge Design Workshop at KSU since 1993 (topics on Page 16)
- **Graduate Program Director** and Chair of departmental Graduate Studies Committee at KSU (1999-02)
- **Chief co-Editor** of the ASCE Journal of Computing in Civil Engineering (2001-06)
- **Chair of the Executive Committee** of the Technical Council on Computing and Information Technology of ASCE (Nov. '07- Oct. '08); Current officer position: Past-chair
- **Vice-President** of the ASCE Global Center of Excellence on Computing
- Vice-President then **President** of the Kansas Section of ASCE (2004-06)
- **Principal Investigator** (primary) in research grants and contract of about \$1.5 million
- First author of 47 and co-author of 42 other publications and technical reports
- **Fellow** of the American Society of Civil Engineers.

P.E. REGISTRATION: Registered Professional Engineer in Texas, License No. 101447

EDUCATION

B.S. in Civil Engineering, with Honor Degree, June 1981, Cairo University, Giza, Egypt.

Graduation Project: Layout and Design of a Medium-span Steel Bridge.

M.S. in Applied Mathematics, April 1987, University of Pittsburgh, Pittsburgh.

Advisor: Professor Charles A. Hall

M.S. in Civil Engineering, April 1987, University of Pittsburgh, Pittsburgh.

Thesis: Finite Element Approximation to Heat Transfer through Combined Solid and Fluid Media.

Advisor: Professor Joel I. Abrams

Ph.D. in Civil Engineering, Dec. 1989, University of Pittsburgh, Pittsburgh, PA.

Dissertation Topic: A Study on Variable Amplitude Fatigue and an Expert System for Fatigue Assessment of Highway Steel Bridges.

Advisors: Professors Karl H. Klippstein and Joel I. Abrams

PERSONAL DATA:

Hobbies: Art, especially painting and music.

Favorite sport activity: Swimming.

Community: Member of Saint Thomas More Catholic Church; Eucharistic ministry; music/choir ministry.

Family: Wonderful wife for 25 years (Mona), two daughters (Theresa, junior at K-State, and Monica, freshman at KU), and a son (George) in 6th grade at Amanda Arnold Elementary School.

TEACHING EXPERIENCE**Courses Taught:**At the University of Pittsburgh: (Undergraduate Courses)

<i>CE131</i>	Structural Elements	<i>Course Instructor</i>
<i>CE232</i>	Indeterminate Analysis	<i>Course Instructor</i>
<i>CE234</i>	Concrete Structures I	<i>Recitation Instructor</i>
<i>CE116</i>	Civil Engineering Analysis	<i>Teaching Assistant</i>
<i>CE164</i>	Civil Engineering Systems Analysis	<i>Teaching Assistant</i>
<i>MATH703</i>	Algebra and Trigonometry	<i>Course Instructor</i>
<i>MATH720</i>	Preparation for Calculus	<i>Course Instructor</i>

At Kansas State University:

<i>CE015</i>	Engineering Assembly	<i>Undergraduate</i>
<i>CE380</i>	Computer Applications in Civil Engineering	<i>Undergraduate</i>
<i>CE333</i>	Statics	<i>Undergraduate</i>
<i>CE533</i>	Mechanics of Materials	<i>Undergraduate</i>
<i>CE534</i>	Mechanics of Materials Lab	<i>Undergraduate</i>
<i>CE537</i>	Introduction to Structural Analysis	<i>Undergraduate</i>
<i>CE542</i>	Structural Engineering in Steel	<i>Undergraduate</i>
<i>CE544</i>	Structural Engineering in Concrete	<i>Undergraduate</i>
<i>CE580</i>	AI Applications in CE (<i>Intersession</i>)	<i>Undergraduate</i>
<i>CE585</i>	CE Project (Senior Design)	<i>Undergraduate</i>
<i>CE732</i>	Advanced Structural Analysis I	<i>Graduate</i>
<i>CE742</i>	Advanced Steel Design	<i>Graduate</i>
<i>CE802</i>	Advanced Mechanics of Materials	<i>Graduate</i>
<i>CE837</i>	Structural Stability/Elastic Stability (formerly CE 737)	<i>Graduate</i>
<i>CE844</i>	Prestressed Concrete Design (formerly CE 744)	<i>Graduate</i>

Graduate Student Advising (*Students Graduated and Research Topics*)

1. Weiqun Zhang, "Computer Program for the Analysis and Design of Prestressed Concrete Continuous Beams with Variable Depth," 1992 (MS)
2. Senaka P. Aturaliya, "Bridge Condition Rating Based on Fuzzy Set Theory and Eigen Vector Approach," 1993 (MS)
3. Khalid Niazi, "A Simplified Method of Multistory-Frame Analysis," 1993 (MS)
4. Amy Moran Sramek, "Methodology Used in the Development of a Bridge Construction Expert System," 1996 (MS)
5. Jingchen Xu, "Temperature Distribution in Layered Pavements," 1996 (MS)
6. M. Sureshkumar Iyer, "Methodology and Instrumentation for Vibrational Analysis of Structures for Non-Destructive Evaluation," 1996 (MS)
7. Srinath Nagaraja, "Bridge Deck Rebar-Corrosion Knowledge Based Decision System Development Using Machine Learning Techniques," 1997 (Ph.D)
8. Rafael Morice, "Guidelines for Removal of Handrails on Narrow Culverts and Bridges on Low Volume Roads," 1998 (MS)
9. Xinhua Yu, "Flexural Design of Continuous Post-tensioned Concrete Haunched Slab Bridges," 1998 (MS)
10. Frederick Sheffield, "Usage of Fourier Analysis and Fundamental Concepts of Vibration Analysis (of Linear Systems)," 2000, (MS)

11. Jiaduo Wang, "A Study of the Cross-hole Sonic Logging Technique for Defect Detection in Drilled Shafts," 2002, (MS).
12. Hansang Kim, "Damage Evaluation of Structures by Wavelet Analysis," 2004, (Ph.D)
13. Yousheng Chen, "Development of Bridge Management Systems using Fuzzy Case-Based Reasoning," 2005, (Ph.D)
14. Loren Dickens, "Structural Check of a Steel Through Truss Bridge," May 2008 (MS)
15. Long Qiao, in progress, "Signal-based Damage Detection of Structures," (Ph.D), co-advisor

Educators' Seminars and Special Training

- Educator's session, AISC Annual National Steel Conference, Las Vegas, Nevada, March 1992
- PCA Professors' Seminar of South Central Cement Association, "Engineering Economics of RC Buildings," Aug. 16-18, 1993.
- Workshop of ASEE Midwest Section, "A New Way of Teaching Structural Analysis," Rolla, Missouri, Mar. 31- Apr.2, 1993.
- Training Seminar of FEMA - Emergency Management Institute, "Multiprotection design summer Institute: Earthquake Protective Design," Emmitsburg, Maryland, July 18-22, 1994.
- Educator's session, AISC Annual National Steel Conference, Phoenix, Arizona, March 1996
- Workshop and Symposium of the Association of European Civil Engineering Faculties, Odense, Denmark, May 5-7, 1997.
- AISI Faculty/Educator's Workshop, "Teaching Steel Bridge Design," Arlington, Virginia, August 14 &15, 1999.
- Educator's session, AISC Annual National Steel Conference, Fort Lauderdale, FL, May 2001
- Participated in K-State Learning Enhancement Action/Resource Network (LEA/RN) project in initial group 1998, and Veteran Group 2000-01.
- AISC Faculty Workshop on Web-Enhanced Teaching of Structural Steel Design, October 25, 2001, Lawrence, KS.
- AISC Digital Database Faculty Workshop, October 14, 2003, Chicago, Illinois
- ASCE Zone III Leadership Workshop – Chicago, Feb 13-15, 2004
- ASCE Student Chapter Advisor's Workshop – Herndon, VA Aug 27-29, 2004
- ASCE Zone III Leadership Workshop – St. Louis, Missouri, Feb 25-27, 2005
- AISC Educator Session: Introducing the New Specifications/Manual, Chicago, Illinois, Oct 20, 2005
- ASCE Zone III Leadership Workshop – Houston, Texas, Feb 17-19, 2006

HONORS & AWARDS

- June 1981 B.S. with Honor Degree, Faculty of Engineering, Cairo University, Egypt.
- Oct. 1986 "An Apple for the Teacher - Awarded for Good Teaching in Mathematics,"
College of General Studies, University of Pittsburgh.
- Mar. 1989 FHWA Research Fellowship Award, University of Pittsburgh, Honors Convocation.
- Aug. 1989 Certificate of Appreciation, US Department of Transportation.
- Sept. 1989 Grant for Research Fellowship (\$20,000), from National Highway Institute (NHI).
- May 1990 Sole-Source Contract (14-months, \$40,000) Awarded by FHWA.
- Nov. 1994 KSU President's Faculty Development Award for a meeting in Italy in March 95
- Dec. 1996 Chi Epsilon National Civil Engineering Honor Society, Initiation
- Apr. 1997 KSU President's Faculty Development Award for a meeting in Denmark in May 97
- June 1998 KSU President's Faculty Development Award for a meeting in Norway in July 98
- May 1999 KSU President's Faculty Development Award for a meeting in England in Sept. 99
- Dec. 2003 Excellence in Teaching Award, Chi Epsilon, Kansas State University
- May 2005 KSU President's Faculty Development Award for a meeting in Cancun in July 05
- Dec. 2005 Outstanding University and Professional Service Award, Dept of Civil Eng'g., KSU
- Dec. 2005 Student Advocate Award, Chi Epsilon, Kansas State University Chapter
- Dec. 2006 Outstanding Faculty Award, ASCE Kansas State University Student Chapter
- Dec. 2006 Undergraduate Teaching Excellence Award, Chi Epsilon, Kansas State University
- Fall 2006 Certificate of Commendation, from ASCE National Committee on Student Activities
for exceptional service as faculty advisor to the KSU Student Chapter of ASCE.
- Dec. 2007 Student Advocate of the Year Award, Chi Epsilon, Kansas State University Chapter
- Dec. 07 & 09 Outstanding University and Professional Service Award, Dept of Civil Eng'g., KSU
- Fall 2008 Charles H. Scholer Faculty Award, KSU College of Engineering
- Dec. 2008 Advisor of the Year Award, ASCE Kansas State University Student Chapter
- May 2009 Professorial Performance Award, Kansas State University, Office of the Provost

PROFESSIONAL EXPERIENCE

Design/Consulting Experience:

- 7/80 – 8/80 International Association for Exchange of Student for Technical Experience (IAESTE)
Hellenic Water Company, Athens, Greece
- 11/81 – 3/82 Part-time Design Engineer, City Planning and Transportation Division
*Bakhoum-Moharram Engineering Consultants:
1 Shampolion Street, Cairo, Egypt.*
- 4/82 – 6/83 Part-time Designer, Structures Division
Samaan-Fam Consulting Engineering Office: 13 Kasr El Nil Street, Cairo, Egypt.
- 6/86 – 8/86 Finite Element Analysis, Structures Dynamics
MRM Engineers, P.C.: 918 Park Ave., Pittsburgh, PA 15234.
- 10/97-4/98 Post-tensioned Haunched Slab Bridge Standards for KDOT
Consultant to P.B. Booker Associates, Inc., Wichita, Kansas
- Current Collaboration with BG Consultants, Manhattan, Kansas, on Structural and Bridge Projects

Job Positions/Titles Held:

- 9/81 - 3/82 & 7/83 - 8/84 Instructor/Teaching Assistant, Structural Analysis & Mechanics, Cairo University, Giza, Egypt.
- 4/82 - 6/83 Teaching Fellow: Structures, Civil Eng. Dept., Military Technical College, Egypt.
- 9/84 - 8/86 Teaching Assistant, Dept. of Maths. and Statistics, University of Pittsburgh.
- 9/86 - 4/87 Teaching Assistant, Civil Engineering Dept., University of Pittsburgh
- 5/87 - 8/88 Research Assistant, Contract DTFH-86-R-00036
Civil Engineering Dept., University of Pittsburgh
- 9/88 - 8/89 Pre-doctoral Fellow, Grant No. DTFH-61-88-P-40012
Project conducted at FHWA Research Center in McLean, Virginia.
- 9/89 - 12/89 Research Assistant, Contract DTFH-86-R-00036
Civil Eng. Dept., University of Pittsburgh.
- 1/90 - 7/91 Research Assistant Professor, Department of Civil Eng., University of Pittsburgh
- 8/91 - 6/96 Assistant Professor, Department of Civil Engineering, Kansas State University.
- 7/96 – 6/03 Associate Professor, Department of Civil Engineering, Kansas State University.
- 7/03 – Present Professor, Department of Civil Engineering, Kansas State University.

Membership in Professional Organizations:

- American Society of Civil Engineers (ASCE): member since 1991*
- Prestressed Concrete Institute (PCI), member since 1993*
- American Institute of Steel Construction (AISC), member*
- Society of Experimental Mechanics (SEM), member*
- American Society of Engineering Education (ASEE), member*
- International Association of Foundation Drilling (ADSC), member till '02*
- Chi Epsilon (National Civil Engineering Honor Society), Fellow member*

Leadership Roles in Professional Organizations:

- Editor of ASCE Journal on Computing in Civil Engineering since Jan 2001 – Dec. 2006.
- Past chair of ASCE Committee on Intelligent Computing (formerly Expert Systems and AI) of the Technical Council on Computing and Information Technology (TCCIT)
- TCCIT Executive Committee (EXCOM): Member since Oct. 2005, **Chair** in FY'08
- TCCIT Global Center of Excellence in Computing: **Vice Chair**, since 2005
- ASCE Kansas Section: Vice President FY'05, **President** FY'06
- Member the Editorial Board (1 of 3) for the Joint Int'l Conf. on Computing and Decision Making in Civil

and Building Eng'g, and member of the Organizing Committee (1 of 5), June 14-16, 2006, Montreal, Canada.

National Technical Committees:

- ASCE Technical Council on Computing and Information Technology: Intelligent Computing Committee, member since 1992 and **Chair** (1998-2000); Publication Committee (Member since 2001)
- ASCE Journal of Computing in Civil Engineering: **Co-editor** Jan. 2001-Dec. 2006).
- ASCE Committee on Emerging Computing Technology, SEI, (formerly STD, secretary in 1994-96, and acting chair in 1995).
- ASCE/ACI Committee 423: Prestressed Concrete, Associate Member (1993-present)
- ASCE Committee on Steel Bridge, member (1996-2002)
- ASCE Committee on Experimental Analysis and Instrumentation (Eng. Mechanics Division), member since 1996

Conference and Sessions Organized/Chaired

1. **ASCE Computing Congress '94**, "Applications of Fuzzy Logic in Civil Engineering," Wash. D.C., [June 20-22, 1994].
2. **ASCE Structures Congress '95**, "Intelligent Damage Monitoring of Civil Engineering Structures," Boston, MA, [April 3-5, 1995], with Richard White as co-chair.
3. **ASCE Structures Congress '95**, "Fuzzy Logic Applications in Structural Engineering, Boston, MA. [April 3-5, 1995].
4. **SEM** Conference on NDT, "Ultrasonic II", June 13, 1996, Nashville, TN.
5. **ASCE Structures Congress '96**, "Intelligent Damage Monitoring of Civil Engineering Structures", Chicago, April 1996.
6. **ASCE Computing Congress '96**, "Machine Learning", Anaheim, CA, [June 17-19,1996]
7. **ASCE Computing Congress '97**, "Machine Learning Applications in Transportation Infrastructure," Philadelphia, PA [June 16-18, 1997].
8. **Civil and Structural Engineering Computing '99**, "Professional and Educational Issues," Oxford, UK, [Sep. 13-15, 1999]
9. **Computing in Civil and Building Engineering**, "Roads to Better Roads", ICCCBE-VIII 2000, Stanford University, Anaheim, [Aug. 14-17].
10. **ASCE Eng. Mechanics Conference**, "Imaging Techniques in Experimental Mechanics," University of Delaware, June 13-16, 2004 (co-chair: Asad Esmaily).
11. Joint International Conference on Computing and Decision Making in Civil and Building Engineering, June 14-16, 2006, Montreal, Canada, Chair of Session 104 "Industrialization and Information processes in Construction."

RESEARCH EXPERIENCE

Sponsored Projects

Hani Melhem (PI), "FASTBRID Expert System," *Sponsor: US DOT/FHWA, Federal Highway Administration, \$40,000, [5/90-6/91].*

Melhem (PI), "Expert System for Fabrication Errors Solutions," *Sponsor: Kansas Department of Transportation (KDOT-KTRAN), \$19,689, [7/92-1/94].*

K. Kurt, C. Thor, R. Stokes, and **Melhem** (Co-PI's), "Computerized Sign Inventory Feasibility Study," *Sponsor: Kansas Department of Transportation (KDOT-KTRAN), \$52,400, [6/93 - 8/94].*

K.K. Hu (PI) and **Melhem** (Co-PI), "Concrete Dead Load Deflections of Continuous Steel Girder Composite Bridges," *Sponsor: Kansas Department of Transportation (KDOT-KTRAN), \$27,000, [6/94-6/95].*

H. Melhem (PI), "Targeting Expert Systems for Bridge Engineering," *Sponsor: Kansas Department of Transportation (KDOT-KTRAN), \$5,200, [10/94-7/95].*

H. Melhem, (PI), "Bridge Construction Expert System," *Sponsor: Kansas Department of Transportation (KDOT), \$22,000, [8/95-8/96].*

H. Melhem (PI) and K.K. Hu (Co-Pi), "Development of an Accelerated Pavement Testing Facility for the Development of an Innovative Load Transfer System for Concrete Pavement: X-FLEX," *Sponsors: Cardwell International, Ltd. \$158,000, and Kansas Technology Enterprise Corp., KTEC, \$100,000, [7/94-6/97].*

H. Melhem (PI), K.K. Hu , M. Hossain, and S. Swartz (Co-PI's), "Development of Accelerated Testing Laboratory for Experimental Studies to Mitigate the Deterioration of Highway Pavement in Kansas," *Sponsor: Kansas Department of Transportation (KDOT), \$198,336, [7/94-2/97].*

M. Hossain (PI) and **H. Melhem** (Co-PI), "Use of FWD Data to Determine Pavement Structural Evaluation (PSE) Values," *Sponsor: Kansas Department of Transportation (KDOT/ KTRAN), \$55,971, [8/95-8/97].*

H. Melhem and K.K. Hu (PI's), "Bridge Rating Using the KDOT-FWD and Other Methodologies, *Sponsor: Kansas Department of Transportation (KDOT/KTRAN), \$42,000, [7/95-1/97].*

H. Melhem (PI), E.R. Russell and B.L. Smith (Co-PI), "Guidelines for Removal of Handrails on Narrow Culverts and Bridges," *Sponsor: Kansas and US Department of Transportation (KDOT and US DOT), \$50,500, [1996-97].*

H. Melhem (PI), M. Hossain, and S.E. Swartz (Co-PI's), "Accelerated Testing for Studying Pavement Design and Performance," *Sponsor: Midwest States Pooled Fund/FHWA, \$112,500, [5/97-4/98].*

H. Melhem (PI), M. Hossain, S.E. Swartz and H. Walker (Co-PI's), "Accelerated Testing for Studying Pavement Design and Performance - FY 98", *Sponsor: Midwest States Pooled Fund/FHWA, \$127,500, [12/97-1/99].*

H. Melhem (PI) and S. Swartz (Co-PI), "Accelerated Testing for Studying Pavement Design and Performance - FY 99," *Study: Rut resistance of Superpave Mixtures with River Sands, Sponsor: Midwest*

States Pooled Fund/FHWA, \$108,271, [9/98-8/99].

H. Melhem (PI) and R. Peterman (Co-PI), "Accelerated Testing for Studying Pavement Design and Performance - FY 00 and Beyond," *Sponsor: Midwest States Pooled Fund/FHWA, \$317,441, [5/99-9/00].*

H. Melhem (PI), "Effect of Moisture/Drainage on Non-Reinforced PCCP and Performance of FRP and Steel Dowels as Joint Repairs," *Sponsor: Midwest States Pooled Fund/FHWA, \$229,264, [7/00-8/01].*

R. Peterman (PI) and **H. Melhem** (Co-PI), "Evaluation of the Strand Development Length in Cracked Prestressed Concrete Members Under Cyclic Loading," *Sponsor: Stresscon Corporation, \$50,230, [1/00-12/01].*

H. Melhem (PI) and A. Esmaily (Co-PI), "Structural Check of a Railroad Bridge for a Steam Locomotive," *Sponsor: Abilene & Smoky Valley Railroad Association, \$6,145 [9/07-5/08]*

H. Rasheed, A. Esmaily, H, **H. Melhem**, and R. Peterman, "Intelligent Bridge Monitoring and Remote Sensing," University Transportation Center, *Sponsors: US DOT/KDOT, \$100,259, [6/06-5/09]*

Publications

Journal Publications

1. **Hani G. Melhem** and James A. Wentworth, "FASTBRID: An Expert System for Bridge Fatigue," Public Roads - A Journal of Highway Research and Development, Vol. 53, No. 4, (FHWA: Washington, D.C., March, 1990), pp 109-117.
2. **H. G. Melhem** and K.H. Klippstein, "An Expert System/Training Aid for Fatigue of Steel Bridges," Journal of Constructional Steel Research, Vol. 28, 1994, pp 23-49.
3. **Hani Melhem**, and Senaka Aturaliya, "Applications of Fuzzy Logic to Bridge Engineering," Journal of Intelligent and Fuzzy Systems, Vol. II, No. 1, 1994, pp 55-68.
4. S. Nagaraja and **H. Melhem**, "A Rebar Corrosion Decision System Using Machine Learning," IABSE Colloquium Bergamo 1995, International Association for Bridge and Structural Engineers (IABSE) Reports, Volume 72, Bergamo, Italy, pp. 293-296.
5. K. Roddis, **H. Melhem**, M. Hess, and S. Nagaraja, "BFX: An Operational Expert System for Bridge Fabrication," Transportation Research Records, No. 1491, TRB, Wash., D.C., 1995, pp. 62-68.
6. **H. Melhem**, WMK. Roddis, S. Nagaraja, and M.R. Hess, "Knowledge Acquisition and Engineering for a Steel Bridge Fabrication Expert System," Journal of Computing in Civil Engineering, Vol. 10, No3, (July 1996), ASCE, New York, pp. 1-9.
7. **Hani G. Melhem** and Senaka Aturaliya, "Bridge Condition Rating Using an Eigen vector of Priority Settings," Microcomputers in Civil Engineering, Vol. 11, No. 6, 1996, pp 421-432.
8. **Hani Melhem** and Srinath Nagaraja, "Machine Learning and its Application to Civil Engineering Systems," Civil Engineering Systems, Vol. 13, 1996, pp. 259-279.

9. **H.G. Melhem**, V.K. Bhuvanagiri, and X. Yu, “*Design and Development of a PC-Based Real-Time Strain Data Acquisition System*,” in Computing Development in Civil and Structural Engineering, B. Kumar and B.H.V. Topping, Eds., Civil-Comp Press, Edinburgh, Scotland, 1999, pp 229-235.
10. Eugene Russell, **H. Melhem**, and Rafael Morice, “*Guidelines for the Removal of Concrete Bridgerails on Narrow, Low-Volume Roads in Kansas*,” Journal of the Transportation Research Forum, Vol. 40, No. 3, Summer 2001, pp 79-89.
11. **Hani G. Melhem** and Yousheng Cheng, “*Prediction of Remaining Service Life of Bridge Decks Using Machine Learning*,” Journal of Computing in Civil Engineering, ASCE, Vol. 17, No.1, January 2003, pp. 1-9.
12. **Hani G. Melhem**, Yousheng Cheng, Deb Kossler, and Dan Scherschligt, “*Wrapper Methods for Inductive Learning: An Example Application to Bridge Decks*,” Journal of Computing in Civil Engineering, ASCE, Vol. 17, No.1, January 2003, pp. 46-57.
13. **Hani Melhem** and Hansang Kim, “*Damage Detection in Concrete by Fourier and Wavelet Analyses*,” Journal of Engineering Mechanics, ASCE, Vol. 129, No. 5, May 2003, pp. 571-577.
14. Hayder A. Rasheed, H. Charkas, and **H. G. Melhem**, “*Rational Procedure for Calculating Deflections of RC Beams Strengthened with FRP Plates*,” ACI Special Publication SP-210: Deflection Control for the Future (sponsored by ACI Committee 435 on Deflection of Concrete Structures), N.J. Gardner Editor, ACI, 2003, pp. 115-148.
15. Hansang Kim and **Hani Melhem**, “*Fourier and Wavelet Analyses for Fatigue Assessment of Concrete Beams*,” Experimental Mechanics, The International Journal of the Society of Experimental Mechanics, SEM, Vol. 43, No.2 (June 2003), pp. 131-140.
16. Hassan Charkas, H.A. Rasheed, and **H. G. Melhem**, “*Rigorous Procedure for Calculating Deflections in FRP-Strengthened RC Beams*,” ACI Structural Journal, Vol. 100, No. 4 (July-Aug. 2003), pp. 529-547.
17. Hayder A. Rasheed, Hassan Charkas, and **Hani Melhem**, “*Simplified Nonlinear analysis of FRP Strengthened Concrete Beams Based on a Rigorous Approach*,” ASCE Journal of Structural Engineering, July 2004, 130(7), pp. 1087-1096.
18. Hayder Rasheed, Rim Nayal, and **Hani Melhem**, “*Response Prediction of Concrete Beams Reinforced with FRP Bars*,” Composite Structures, **65** (2004), pp. 193-204.
19. Hansang Kim and **Hani Melhem**, “*Damage Detection of Structures by Wavelet Analysis*,” Engineering Structures - the journal of earthquake, wind, and ocean engineering, Volume 26, Issue 3, Feb 2004, pp. 347-362.
20. Cheng, Y. and Melhem, H., “*Monitoring bridge health using fuzzy case-based reasoning*.” Advanced Engineering Informatics. **19**(4), 2005, 299-315.
21. Osama Abudayyeh, Amber Dibert-DeYoung, William Rasdorf, and **Hani Melhem**, “*Research Publication Trends and Topics in Computing in Civil Engineering*,” Journal of Computing in Civil Engineering, Vol. 20, No. 1, Jan/Feb 2006, pp. 2-12.

22. Rasheed, Hayder, Brandon Decker, Robert Peterman, Asad Esmaily, and **Hani Melhem**, "*Exploring Wireless Strain Measurement for Civil Infrastructure*," Strain (International Journal), Accepted for publication April 9, 2008.
23. Long Qiao, Asad Esmaily, and Hani G. Melhem, "*Structural Damage Detection using Signal Pattern-Recognition*," Key Engineering Materials, Vols. 400-402 (2009) pp 465-470, Online at <http://www.scientific.net> © (2009) Trans Tech Publications, Switzerland.
24. Long Qiao, Asad Esmaily and **Hani G. Melhem**, "*Signal Pattern-Recognition Intelligent Computing for Damage Diagnosis in Structures*," Submitted in October 2008 to Advanced Engineering Informatics.

Conference Papers:

1. J. Boland, G.M. Ermentrout, C.A. Hall, W. Layton, and **H. Melhem**, "*Numerical and Analytical Studies of Natural Convection Problems*," in Differential Equations and Application, A. R. Aftabzadeh, ed., Proceedings of the International Conference on Theory and Applications of Differential Equations, Columbus, Ohio 1988 (Vol. 1, pp 83-90). Presentation by Layton.
2. **Hani G. Melhem** and Karl H. Klippstein, "*An Expert System for Fatigue Inspection and Rehabilitation of Steel Bridges*," in Structures Congress '91 Compact Papers, Proceedings of 9th Annual ASCE Structures Congress on Fatigue and Fracture, Indianapolis, Indiana, April 29 to May 1, 1991 (pp. 315-318). Presentation by Melhem.
3. **Hani Melhem**, "*Finite Element Approximation to Heat Transfer Through Construction Glass Blocks*," in Mechanics Computing in 1990's and Beyond, H. Adeli and R. L. Sierakowski, eds., Proc. of the ASCE Engineering Mechanics Specialty Conference, Columbus, Ohio, May 19-22, 1991 (Vol. 1, pp 193-197). Presentation by Melhem.
4. **Hani G. Melhem**, Karl H. Klippstein, William J. Wright, "*Work-In-Progress Report on Long-Life-Fatigue Behavior of Welded-Steel Bridge Girder Details*," by Proc. 8th Annual Int. Bridge Conf. held in Pittsburgh, PA., June 10-11, 1991. Presentation by Melhem.
5. **H. Melhem** and S. Swartz, "*Inspection of Bridges for Fatigue and Remedial Measures Using an Expert System Approach*," in Structural Failure, Product Liability and Technical Insurance, IV (Proc. 4th Int. Conf., Vienna, Austria, 6-9 June 1992), H.P. Rossmanith, ed., Elsevier, New York, NY, 1992, pp. 309-316. Presentation by Swartz.
6. **H. G. Melhem** and K. Niazi, "*A Simplified Method of Multistory-Frame Analysis Including the P-DELTA Effect*," Computing in Civil Engineering, (Proc. of the first Congress held in conjunction with A/E/C Systems '94., June 20-22, 1994, Washington, D.C.), K. Khozimeh, Ed., ASCE, New York, NY, pp. 1302-1309. Presentation by Melhem.
7. **H. Melhem** and J. Schlup, "*An Assessment of the Usage of FRP Composites in Highway Structures*," in Materials and Design Technology - 1994, T.J. Kozik, ed., (Proceeding, of ASME: Energy-sources Technology Conf., Jan 23-26, 1994, New Orleans, Louisiana), PD-Vol. 62, pp. 43-50 (1994). Presentation by Melhem.
8. **H. G. Melhem** and W. Zhang, "*Computer Analysis of Continuous P/C Highway Bridge Girders with*

- Variable Depth*," Computing in Civil Engineering, (Proc. of the first Congress held in conjunction with A/E/C Systems '94., June 20-22, 1994, Washington, D.C.), K. Khozeimeh, Ed., ASCE, New York, NY, pp. 696-703. Presentation by Melhem.
9. S. Nagaraja and **H. Melhem**, "*An Inductive Knowledge-Based System for Mitigation of Bridge Fabrication Errors*," Computing in Civil Engineering, (Proc. of the first Congress held in conjunction with A/E/C Systems '94., June 20-22, 1994, Washington, D.C.), K. Khozeimeh, Ed., ASCE, New York, NY, pp. 1083-1090. Presentation by Melhem.
 10. **H. Melhem** and S. Aturaliya, "*Bridge Condition Rating Using Fuzzy Sets and an Eigenvector of Priority Setting*," Computing in Civil Engineering, (Proc. of the first Congress held in conjunction with A/E/C Systems '94., June 20-22, 1994, Washington, D.C.), K. Khozeimeh, Ed., ASCE, New York, NY, pp. 1908-1916. Presentation by Melhem.
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- "Accelerated Pavement Testing in Kansas," presented at the 86th Annual Meeting of the Mississippi Valley Conference of AASHTO, Chicago, Illinois, July 12-13, 1995.
- Guest Editor of Microcomputers in Civil Engineering - Special Issue on Computer-Aided Bridge Engineering, Vol. 11, No. 6, 1996.
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- Director and originator of the **Bridge Design Workshop** at K-State: Bridge Design Software ('93), Bridge Substructure and Foundations ('94), Falsework and Timber Bridges ('95), Prestressed Concrete Bridges ('96), Structural Steel: Present and Future ('97), Practical LRFD ('99), LRFD and Geotechnical Issues ('00), Shop Drawings for Steel and Concrete Bridges ('01), Innovative Bridge Solutions ('02), Innovative Bridge Materials ('03), Bridge Rehabilitation ('04), Bridge Foundations – LRFD ('05), Bridge Materials: Production, Defects and Solutions ('06), Bridge Software Applications ('07), Field Erection ('08), New Trends in Concrete Bridges ('09) .