

# CURRICULUM VITAE

## WAHEED UDDIN, PH.D., P.E.

### PUBLICATIONS

Dr. Uddin's over 220 publications include three books, two book chapters, one National Academies report, 35 scholarly papers in refereed journals, 13 discussions in refereed journals, 74 peer reviewed papers in refereed conference books and proceedings, 40 papers in other conference proceedings, and 57 research reports for funding agencies (17 reports formally published by the funding agencies).

Author of 19 short course/workshop lecture notebooks and many other consulting reports.

Editor of one *Conference Proceedings CD*, the Second International Symposium on Maintenance and Rehabilitation of Pavements and Technological Control, Auburn, July 29-August 1, 2001

Chief editor of one refereed international journal *IJP – International Journal of Pavements* (ISSN 1676-277) since 2002 (50% papers published from over 300 worldwide contributions); editorial board member of two other international journals.

Dr. Uddin's publication record since joining the University of Mississippi (1993-August 2011):

143 publications (three books, two book chapters, one National Academies report, 80 scholarly papers in refereed journals and peer reviewed papers conference books and proceedings, two discussions in refereed journals, 30 papers in other conference proceedings, and 25 research reports)

Book, book chapter, government report: (Only formal published work is listed here.)

*Infrastructure Management*, McGraw-Hill, Inc., 1997 (W.R. Hudson, R. Haas, and W. Uddin). ISBN 0-07-030895-0

*Infrastructure Management*, Japanese Edition published in Japan, 2001. ISBN 4-627-45211-X

*Infrastructure Management*, Chinese edition published in China, 2005. ISBN 7-5062-6995-3

*Handbook of Highway Engineering* (Editor: T. F. Fwa). ISBN 0-8931-9862. (Chapter author)

Uddin's Chapter "Pavement Management Systems," Pearson-CRC Press, Inc, Aug 2005.

*Handbook of Climate Change Mitigation*. (Editors: Wei-Yin Chen, John M. Seiner, Toshio Suzuki and Maximilian Lackner). ISBN 978-1-44419-7991-9 (Chapter author, approved January 2011)  
Uddin's chapter "Mobile and Area Sources of Greenhouse Gases and Abatement Strategies," Springer, 2011 (available November 2011).

*Research Results Digest 10: Light Detection and Ranging (LIDAR) Deployment for Airport Obstruction Surveys*. Airport Cooperative Research Program (ACRP), TRB, National Research Council, The National Academies, Washington, DC, July 2010.

*Achievements of the DOT-NASA Joint Program on Remote Sensing and Spatial Information Technologies Application to Multimodal Transportation 2000-2002*, U.S. DOT, April 2002,  
Uddin, W. "Transportation, Air Quality, and Remote Sensing Laser Measurements of Air Pollutants Related to Highway Traffic in Mississippi – Oxford and Tupelo." pp. 9-10.

Contributor to two ASCE manuals and English translation of a Pavement Milling Manual.

(Contributor) *Pavement Milling Manual*, English translation of the original Portuguese manual by Valmir Bonfim, São Paulo, Brazil, August 2009.

*Guide for the Design and Maintenance of Paved Low-Volume Roads* (Authors: Zimmerman, Smith, Hoerner, Wade, and Larson), Uddin's contribution on "life cycle cost analysis chapter," Publishers - American Society of Civil Engineers and Federal Highway Administration, 2006.

(Contributor) *Datapave International Contest Manual* (Authors: Datapave International Contest Committee), Uddin's contribution on "Awards Chapter" and "Flexible Pavement Analysis Examples," Publishers - American Society of Civil Engineers and Federal Highway Administration, 2001, 2003.

Pending publications: *Pavement Engineering for Roads and Highway*, Kluwer Academic Publishers (a textbook under contract). ISBN 0-412106817

PUBLICATION (continued)

Scholarly papers published in refereed journals:

1. Uddin, W., Bill Gutelius, and Christopher Parrish. "Airborne Laser Survey Specifications and Quality Management Protocols for Airport Obstruction Surveys." Paper No. 11-1323, *Transportation Research Record 2214, Journal of Transportation Research Board*, Washington, DC, 2011, pp. 117-125.
2. Uddin, W. "Transportation Management: LiDAR, Satellite Imagery Expedite Infrastructure Planning." *Earth Imaging Journal*, January/February 2011, pp.24-27.
3. Uddin, W. "Remote Sensing Laser and Imagery Data for Inventory and Condition Assessment of Road and Airport Infrastructure and GIS Visualization." *International Journal of Roads and Airports (IJRA)*, Vol. 1, No. 1, January 2011, pp. 53-67.
4. Tarefder, Rafiqul A., Arif M. Zaman, and W. Uddin. "Determining Hardness and Elastic Modulus of Asphalt by Nanoindentation." *International Journal of Geomechanics*, American Society of Civil Engineers, Vol.10, No. 3, May/June 2010, pp. 106-116.
5. Uddin, W. "3D-FE Dynamic Analysis of Pavements Subjected to Nondestructive Impact Testing." *Journal of Engineering Research*, NED University of Engineering & Technology, Karachi, Vol. V, No. 1, July-August 2008, pp. 1-15.
6. Uddin, W. "Airborne Laser Terrain Mapping for Expediting Highway Projects: Evaluation of Accuracy and Cost." *Journal of Construction Engineering and Management*, American Society of Civil Engineers, Vol. 134, No. 6, June 2008, pp. 411-420.
7. Uddin, W. "Air Quality Management Using Modern Remote Sensing and Spatial Technologies and Associated Societal Costs." *International Journal of Environmental Research and Public Health*, ISSN 1661-7827, MDPI, Vol. 3, No. 3, September 2006, pp. 235-243.
8. Boriboonsomsin, K. and W. Uddin. "A Simplified Methodology to Estimate Emissions from Mobile Sources for Ambient Air Quality Assessment." *Journal of Transportation Engineering*, American Society of Civil Engineers, Vol. 132, No. 10, October 2006, pp. 817-828.
9. Uddin, W., Kanok Boriboonsomsin, and Sergio Garza. "Transportation Related Environmental Impacts and Societal Costs For Life-Cycle Analysis of Costs and Benefits." *IJP – International Journal of Pavements*, Vol. 4, No. 1-2, January-May 2005, pp. 92-104.
10. Uddin, W. and Sergio Garza. "Pavement Construction Effects on Subgrade Resilient Modulus and Validation by 3D-FE Simulation." *IJRMPD - International Journal of Road Materials and Pavement Design*, Vol. 5, No. 3, 2004, pp. 355-371.
11. Uddin, W. "Crashworthiness Analysis and Simulations of Vehicles Impacting a Roadside Guardrail." *CMES: Computer Modeling in Engineering & Sciences*, Tech Sciences, Vol. 5 (3), 2004, pp. 269-278.
12. Uddin, W. "Viscoelastic Characterization of Polymer-Modified Asphalt Binder of Pavement Applications." *Applied Rheology Journal*, Vol. 13, No. 4, 2003, pp. 191-199.
13. Uddin, W. "Life Cycle Analysis for Investment Decision-Making to Revive Ancient Silk Road and Enhance Economies of Central Asian Countries." *IJP – International Journal of Pavements*, Vol. 1, No. 2, May 2002, pp. 84-97.
14. Uddin, W. and Yamini Nanagiri. "Polymer-Asphalt Highway Performance, Part I." *AIRPORTS: Progressive Technologies*, Vol. 2002, Issue No. 3, 2002. *In Russian*
15. Uddin, W. and Yamini Nanagiri. "Polymer-Asphalt Highway Performance, Part II." *AIRPORTS: Progressive Technologies*, Vol. 2002, Issue No. 4, 2002. *In Russian*

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Scholarly papers published in refereed journals: (continued)

16. Uddin, W. and Yamini Nanagiri. "Performance of Polymer-Modified Asphalt Overlays in Mississippi Based on Mechanistic Analysis and Field Evaluation." *IJP - International Journal of Pavements*, Vol. 1, No. 1, January 2002, pp. 13-24.
17. Al-Turk, Emad and W. Uddin. "Infrastructure Inventory and Condition Assessment Using Airborne Laser Terrain Mapping and Digital Photography." *Transportation Research Record 1690*, Journal of Transportation Research Board, National Research Council, Washington, DC, 1999, pp. 121-125.
18. Uddin, W. and R.M. Hackett. Three-Dimensional Finite Element Modeling of Vehicle Crashes Against Roadside Safety Barriers." *IJCrash 1999 - International Journal of Crashworthiness*, Woodhead Publishing Ltd, Vol. 4, No. 4, 1999, pp. 407-417.
19. Plaxico, C.A., W. Uddin, and R.M. Hackett. "Simulation of A Vehicle Impacting A Modified Thrie-Beam Guardrail." *Transportation Research Record 1599*, Journal of Transportation Research Board, National Research Council, Washington, DC, 1997, pp. 1-10.
20. Uddin, W., R.M. Hackett, A. Joseph, Z. Pan, and A.B. Crawley. "Three-Dimensional Finite-Element Analysis of Jointed Concrete Pavement Having Discontinuities." *Transportation Research Record 1482*, Journal of Transportation Research Board, Washington, DC, 1995, pp. 26-32.
21. Uddin, W., D. Zhang, and F. Fernandez. "Finite Element Simulation of Pavement Discontinuities and Dynamic Load Response." *Transportation Research Record 1448*, Journal of Transportation Research Board, Washington DC, 1994, pp. 100-106.
22. George, K.P., W. Uddin, P.J. Ferguson, A.B. Crawley, and A.R. Shekharan. "Maintenance Planning Methodology for Statewide Pavement Management." *Transportation Research Record 1455*, Journal of Transportation Research Board, Washington DC, 1994, pp. 123-131.
23. Uddin, W. and K.P. George. "User Cost Methodology for Investment Planning and Maintenance Management of Roads and Highways." *Transportation Research Record 1395*, Journal of Transportation Research Board, Washington, DC, 1993, pp. 65-72.
24. George, K.P. and W. Uddin. "Verifying Kneading Resilient Modulus of Soils with Backcalculation Values." *Transportation Research Record 1406*, Journal of Transportation Research Board, Washington, DC, 1993, pp. 116-123.
25. Benson, K.T., W. Uddin, G.E. Elkins, and W.R. Hudson. "Comparison of Methods and Equipment to Conduct Pavement Distress Surveys." *Transportation Research Record 1196*, Journal of Transportation Research Board, Washington, DC, 1988, pp. 40-50.
26. Uddin, W., R. Frank Carmichael III, and W.R. Hudson. "A Microcomputer Program to Evaluate Cost-Effective Alternatives for Concrete Pavement Restoration." *Transportation Research Record 1109*, Journal of Transportation Research Board, Washington, DC, 1987, pp. 69-78.
27. Uddin, W. and B.F. McCullough. "A Systems Approach for Design and Evaluation of Alternatives for Concrete Pavement Rehabilitation." *Transportation Research Record 1109*, Journal of Transportation Research Board, Washington, DC, 1987, pp. 60-68.
28. Uddin, W., A.H. Meyer, and W.R. Hudson "Rigid Bottom Considerations for Nondestructive Evaluation of Pavements." *Transportation Research Record 1070*, Journal of Transportation Research Board, Washington, DC, 1986, pp. 21-29.
29. Uddin, W., A.H. Meyer, W.R. Hudson, and K.H. Stokoe II. "A Project Level Structural Evaluation System for Pavements Based on Dynamic Deflections." *Transportation Research Record 1007*, NDT Pavement Evaluation & Overlay Design, Journal of Transportation Research Board, Washington DC, 1985, pp. 37-45.

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30. Uddin, W., B.F. McCullough, and Melba M. Crawford. "Methodology of Forecasting Air Travel Demand and Airport Expansion Needs." *Transportation Research Record 1025*, Journal of Transportation Research Board, Washington DC, 1985, pp. 7-14.
31. Uddin, W., A.H. Meyer, and W.R. Hudson. "A Flexible Pavement Structural Evaluation System Based on Dynamic Deflections." *Journal of the Association of Asphalt Paving Technologists*, 1985, Vol. 54, pp. 432-453.
32. Uddin, W., A.H. Meyer, and W.R. Hudson. "A Study of Factors Influencing Deflections of CRC Pavements." *Transportation Research Record 933*, Journal of Transportation Research Board, Washington, DC, 1984, pp 47-54.
33. Balasubramaniam, A.S., W. Uddin, H. Zue-Ming, A.R. Chaudhary, and Y.G. Li. "Critical State Parameters and Peak Stress Envelopes for Bangkok Clays." *Quarterly Journal of Engineering Geology*, Vol. 11, 1978, pp. 219-232.
34. Balasubramaniam, A.S. and W. Uddin. "Deformation Characteristics of Weathered Bangkok Clay in Triaxial Extension." *Geotechnique*, Vol. 27, No. 1, 1977, pp. 75-92.
35. Balasubramaniam, A.S., W. Uddin, A.R. Chaudhary, H. Zue-Ming, and Y.G. Li "State Boundary Surface for Weathered and Soft Bangkok Clays." *Australian Geomechanics Journal*, Vol. G6, No. 1, 1976, pp. 43-50.

Discussions published in refereed journals:

1. On "AYMA - A Mechanistic Probabilistic System to Evaluate Flexible Pavement Performance," M. Ayers and M.W. Witzak, *Transportation Research Record 1629*, Journal of Transportation Research Board, Washington, DC, 1998, pp.137-148.
2. On "Effect of Allowable Layer Thickness Variations on Backcalculated Moduli," F. Jooste, S.V. Kekwick, and M. Muthen, *Transportation Research Record 1639*, Journal of Transportation Research Board, Washington, DC, 1998.
3. On "Identifying Error-Generating Factors in Infrastructure Condition Evaluations," by Frannie Humplick, *Transportation Research Record 1344*, Journal of Transportation Research Board, Washington, DC, 1992, pp. 106-115.
4. On "Characterization of Resilient Modulus of Compacted Subgrade Soils Using Resonant Column and Torsional Shear Tests," By Dong-Soo Kim and K.H. Stokoe II, *Transportation Research Record 1369*, Journal of Transportation Research Board, Washington, DC, 1992, pp. 83-91.
5. On "Resilient Testing of Soils Using Gyrotory Testing Machine," by K.P. George, *Transportation Research Record 1369*, Journal of Transportation Research Board, Washington, DC, 1992, pp. 63-72.
6. On "Analytical-Empirical Pavement Evaluation Using the Falling Weight Deflectometer," by P. Ullidtz and R.N. Stubstad, *Transportation Research Record 1022*, Journal of Transportation Research Board, Washington, DC, 1985.
7. On "Pavement Evaluation Using Deflection Basin Measurements and Layered Theory," by A.J. Bush III and D.R. Alexander, *Transportation Research Record 1022*, Journal of Transportation Research Board, Washington, DC, 1985 (with Phil Smith and H.J. Treybig).
8. On "Use of Dynamic Analysis in Predicting Field Multilayer Pavement Moduli," by M.S. Mamlouk, *Transportation Research Record 1043*, Journal of Transportation Research Board, Washington, DC, 1985.

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Discussions published in refereed journals: (continued)

9. On "In Situ Pavement Moduli from Dynaflect Deflections," by S. Husain and K.P. George, *Transportation Research Record 1043*, Journal of Transportation Research Board, Washington, DC, 1983.
10. On "Effect of Hot Climate of Shear Strength of Concrete," by A.F. Abbasi and A.J. Al-Tayyib, *Transportation Research Record 922*, Journal of Transportation Research Board, Washington, DC, 1983.
11. On "Stripping of Asphalt Pavements: State of the Art," By M.A. Taylor and N.P. Khosla, *Transportation Research Record 911*, Journal of Transportation Research Board, Washington, DC, 1983.
12. On "Modifications of the Asphalt Institute's Bituminous Mix Modulus Predictive Equation," By J.S. Miller, J. Uzan and M.W. Witzczak, *Transportation Research Record*, Journal of Transportation Research Board, Washington, DC, 1983.
13. On "Contribution on Membranes and Filter Paper Corrections in Triaxial Tests," *Geotechnique*, Vol 28, No. 2, (1978); Authors' reply to discussion by L. de M. Costa Filho on their paper published in Vol. 27, No. 1 (1977). (with A.S. Balasubramaniam)

Peer reviewed papers published in ASTM, TRB, and other refereed conference proceedings and books:

1. Uddin, W. "Life Cycle Assessment of Sustainable Pavement Systems." *Proceedings, 5<sup>th</sup> ICONFBMP, International Conference Bituminous Mixtures and Pavement*, Thessaloniki, Greece, June 1-3, 2011.
2. Uddin, W., Bill Gutelius, and Christopher Parrish. "Airborne LIDAR Survey Specifications and Quality Management Protocols for Airport Obstruction Surveys." *Online Proceedings, 90th Annual Meeting of Transportation Research Board*, Washington, DC, January 26, 2011.
3. Uddin, W. "Remote sensing and geospatial technologies for inventory and condition monitoring of transport infrastructure assets." *Proceedings, 2<sup>nd</sup> ICTI, International Conference on Transport Infrastructure*, São Paulo, Brazil, August 4-6, 2010.
4. Uddin, W. and Usman Uddin. "Sustainable Personal Rapid Transit Strategies for Congested Cities And Urban Communities." *Proceedings, 2<sup>nd</sup> ICTI, International Conference Transport Infrastructure*, São Paulo, Brazil, August 4-6, 2010.
5. Uddin, W. and S. Garza. "3D-FE Simulation Study of Structural Response Analysis for Pavement-Subgrade Systems Subjected to Dynamic Loads." *Trends in Engineering Mechanics Special Publication (TEMSP) 1, Pavements and Materials: Testing and Modeling in Multiple Length Scales*, Editors: R.A. Tarefder, Yong-Park Kim, Zhanping, and Linbing Wang, ISBN 978-0-7844-1192-2, August 8-11, 2010, pp. 170-181. Also included in ASCE Conference Proceedings 385, 15 (2010).
6. Uddin, Waheed. "Spaceborne Remote Sensing Data for Inventory and Visualization of Transportation Infrastructure and Traffic Attributes." *CD Proceedings, First International Conference on Sustainability Transportation and Traffic Management*, Karachi, Pakistan, July 1-3, 2010, pp 3-12. ISBN 978-969-8620-10-3. Keynote Lecture
7. Uddin, W., Bikila Wodajo, Katherine Osborne, and Mackenzie White. "Expediting infrastructure condition assessment for disaster response and emergency management using remote sensing data." *MAIREPAV6 - 6th International Conference on Maintenance and Rehabilitation of Pavements and Technological Control*, Torino, Italy, July 8-10, 2009.
8. Uddin, W., Carla Brown, E. Scott Dooley, and Bikila Wodajo. "Geospatial Analysis of Remote Sensing Data to Assess Built Environment Impacts on Heat-Island Effects, Air Quality and Global Warming." *Paper No. 09-3146, CD Proceedings, 85th Annual Meeting of The Transportation Research Board*, Washington, DC, January 11-15, 2009.

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Peer reviewed papers published in ASTM, TRB, refereed conference proceedings and books: (continued)

9. Uddin, W. and Christopher Parrish. "LIDAR Obstruction Surveys And Imagery Data For Airport Applications." *Paper 137, ICTI, First International Conference Transport Infrastructure*, Beijing, China, 24-26 April 2008.
10. Uddin, W., Bikila Wodajo, and Katherine Osborne. "Geospatial Analysis Of Satellite Imagery Data for Inventory of Transportation and Urban Infrastructure Assets and Assessment of Disaster Impacts." *Paper 138, ICTI, First Intl. Conference Transport Infrastructure*, Beijing, China, 24-26 April 2008.
11. Uddin, W. "A Methodology for Estimating Seasonal Nonlinear Modulus Values for Design and Evaluation of Asphalt Pavements." *Proceedings, 4th International Conference Bituminous Mixtures and Pavements*, Thessaloniki, Greece, April 19-20, 2007, Vol. 1, pp.13-24.
12. "Geospatial Analysis and Visualization Technologies for Airport Applications." *CD Proceedings, 2006 Second International Conference on Airports: Planning, Infrastructure & Environment*, São Paulo, Brazil, August 2-4, 2006.
13. Boriboonsomsin, Kanok and W. Uddin. "A Consideration of Heat-Island Effect in Ground-Level Ozone Forecasting Model and Its Application in Rural Areas of Northern Mississippi." *Paper 06-1954, CD Proceedings, 85th Annual Meeting of The Transportation Research Board*, Washington, DC, January 22-26, 2006.
14. Uddin, W. "Life-Cycle Societal Costs and Benefits for Sustainable Transportation Decision Making." *CD Proceedings, MAIREPAV4 – 4<sup>th</sup> International Conference on Maintenance and Rehabilitation of Pavements and Technological Control*, Ulster University, Belfast, Northern Ireland, August 18-20, 2005.
15. Uddin, W., Kanok Boriboonsomsin, and Sergio Garza. "Transportation Related Environmental Impacts and Societal Costs For Life-Cycle Analysis of Costs and Benefits." *CD Proceedings, 2005 International Symposium on Pavement Recycling*, São Paulo, Brazil, 14-16 March 2005. First best paper award
16. Uddin, W. and Kanok Boriboonsomsin. "Air Quality Management Using Vehicle Emission Modeling and Spatial Technologies." *Proceedings, Environment 2005 International Conference: Sustainable Transportation in Developing Countries*, Abu Dhabi, UAE, January 30- February 2, 2005, (Published , 2007). Invited Lecture
17. Boriboonsomsin, Kanok and W. Uddin. "Tropospheric Ozone Modeling Considering Vehicle Emissions and Point & Aviation Sources, Validation, and Implementation in Rural Areas." *Paper No. 05-0060, CD Proceedings, 84th Annual Meeting of The Transportation Research Board*, Washington, DC, January 13, 2005.
18. Uddin, W. and S. Garza. "3D-FE Modeling and Simulation of Airfield Pavements Subjected to FWD Impact Load Pulse and Wheel Loads." *Proceedings, 2003 Airfield Pavement Specialty Conference*, American Society of Civil Engineers, Las Vegas, Nevada, September 21-24, 2003, pp. 304-315.
19. Uddin, W. "3D-FE Simulation and Dynamic Response Analysis of FWD Impact Test on Asphalt Pavements." *Proceedings, International Conference on Highway Pavement Data, Analysis and Mechanistic Design Applications*, Columbus, OH, USA, September 8-10, 2003, Vol. 1, pp. 163-174.
20. Uddin, W., S. Garza, and K. Boriboonsomsin. "A 3D-FE Simulation Study of the Effects of Nonlinear Material Properties on Pavement Structural Response Analysis and Design." *Proceedings, MAIREPAV03 - Third International Symposium on Maintenance and Rehabilitation of Pavements and Technological Control*, (ISBN 972-8692, Universidade do Minho Publishers, Editors P. Pereira and F. Branco), Guimarães, Portugal, July 7-10, 2003, pp. 99-108.

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Peer reviewed papers published in ASTM, TRB, refereed conference proceedings and books: (continued)

21. Uddin, W. "Advanced Remote Sensing Technologies for Highway Corridor Assessment and Asset Management." *Proceedings, MAIREPAV03 - Third International Symposium on Maintenance and Rehabilitation of Pavements and Technological Control*, (ISBN 972-8692, Universidade do Minho Publishers, Editors P. Pereira and F. Branco), Guimarães, Portugal, July 7-10, 2003, pp. 825-834.
22. Uddin, W. and Henrique Momm. "Airborne and Spaceborne Remote Sensing Terrain Mapping for Planning and Design of Transportation Infrastructure Assets." *CD Proceedings, 2003 Intl Conference on Airports: Planning, Infrastructure & Environment*, Rio de Janeiro, Brazil, June 8-11, 2003.
23. Uddin, W. "Air Quality Analysis Considering Mobile and Aviation Sources and Monitoring Using Remote Sensing Tunable Laser Technology." *CD Proceedings, 2003 International Conference on Airports: Planning, Infrastructure & Environment*, Rio de Janeiro, Brazil, June 8-11, 2003.
24. Uddin, W., K. Boriboonsomsin and Sean Magoon. "A Synthesis Study and GIS Database for Bridge Cathodic Protection Projects." *Paper 03-2204, CD Proceedings, 82<sup>nd</sup> Annual Meeting of The Transportation Research Board*, Washington, DC, January 2003.
25. Uddin, W., Henrique Momm and Sergio Garza. "Application of The PEDD Methodology of Modulus Backcalculation for TRB Nonlinear Pavement Analysis Project," *Paper 03-4060, CD Proceedings, 82<sup>nd</sup> Annual Meeting of The Transportation Research Board*, Washington, D.C., January 2003.
26. Uddin, W. and S. Garza. "Advanced Modeling and Simulation of In-Service Asphalt Pavements Using Creep Compliance Data and Comparison with Field Evaluation." *Proceedings, 3<sup>rd</sup> International Conference Bituminous Mixtures and Pavements*, Thessaloniki, Greece, November 21-22, 2002.
27. Uddin, W. "Evaluation of Airborne Lidar Digital Terrain Mapping for Highway Corridor Planning and Design." *CD Proceedings, International Conference Pecora 15/Land Satellite Information IV ISPRS*, American Society for Photogrammetry & Remote Sensing, Denver, November 10-15, 2002.
28. Uddin, W. "Application of Remote Sensing Tunable Laser Technology for Measuring Transportation Related Air Pollution." *Proceedings, 7th Intl Conference on Advanced Technology in Transportation*, American Society of Civil Engineers, Cambridge, MA, USA, August 5-7, 2002, pp. 257-265.
29. Uddin, W. "In Situ Evaluation of Seasonal Variability of Subgrade Modulus Using DCP and FWD Tests." *Proceedings, Sixth International Conference on the Bearing Capacity of Roads, Railway, and Airfields*, Lisbon, Portugal, June 24-26, 2002, (ISBN 90-58093964, Balkema Publishers, Editors A. Correia and F. Branco) Volume 1, pp. 741-750.
30. Uddin, W. and E. Al-Turk. "Airport Obstruction Space Management Using Airborne LIDAR Three-Dimensional Digital Terrain Mapping." *CD Proceedings, 2002 Airport Technology Conference*, Federal Aviation Administration, Atlantic City, New Jersey, May 5-8, 2002.
31. Uddin, W. and S. Garza. "In Situ Material Characterization of Pavement-Subgrade Systems Using FWD Data and Validation By 3D-FE Simulations." *CD Proceedings, 2002 Airport Technology Conference*, Federal Aviation Administration, Atlantic City, New Jersey, May 5-8, 2002.
32. Uddin, W. and E. Al-Turk. "Airborne LIDAR Digital Terrain Mapping for Transportation Infrastructure Asset Management." *CD Proceedings, Fifth International Conference on Managing Pavements*, Seattle, August 11-14, 2001.
33. Uddin, W. and L. Ricalde. "Advanced Material Modeling and 3D-FE Simulations of Pavement-Subgrade Systems." *Proceedings, Second International Symposium on 3D Finite Element Modeling for Pavement Analysis and Design*, Charleston, West Virginia, October 11-13, 2000, (ISBN 0-925500-03-8), pp. 355-372.

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34. Uddin, W. and L. Ricalde. "Nonlinear Material Modeling and 3D-FE Dynamic Analysis of Airfield and Highway Pavements." *Proceedings, 26<sup>th</sup> International Air Transport Conference*, American Society of Civil Engineers, San Francisco, California, June 18-21, 2000.
35. Uddin, W. "Finite Element Modeling of Pavement Systems for Nondestructive Evaluation and Dynamic Response Analysis." *CD Proceedings, 1999 Airport Technology Conference*, Federal Aviation Administration, Atlantic City, New Jersey, April 11-14, 1999.
36. Uddin, W. "Characterization of Pavement Materials and Soils Using Gyrotory Shear Test." *GSP 85, Application of Geotechnical Principles in Pavement Engineering, Special Publication*, Geo-Institute, American Society of Civil Engineers, 1998, pp. 59-68.
37. Uddin, W. "Application of 3D-Finite Element Dynamic Analysis for Pavement Evaluation." *Proceedings, First National Symposium on 3D Finite Element Modeling for Pavement Analysis and Design*, Charleston, West Virginia, Nov. 1998, (ISBN 0-937058-49-1), pp. 95-109. Invited lecture
38. Uddin, W. "Application of Micromechanical Modeling and Finite Element Dynamic Analysis for Material Characterization of Asphalt Pavements." *Modeling and Simulation Based Engineering*, (ISBN 09657001-2-7, Tech Science Press), October 1998, Volume 2, pp. 1707-1712.
39. Uddin, W. "Three Dimensional Finite Element Modeling of Vehicle Crashes Against Roadside Safety Barriers." *Proceedings, IJCRASH'98 - International Crashworthiness Conference*, Dearborn, Michigan, September 1998, pp. 573-583. (with R.M. Hackett)
40. Uddin, W. "Application of Finite Element Dynamic Analysis for In Situ Material Characterization of Pavement Systems." *Proceedings, Fifth International Conference on the Bearing Capacity of Roads and Airfields*, Trondheim, Norway, July 1998, Volume 1, pp. 429-438.
41. Uddin, W. and A. Godiwala. "Finite Element Simulation of Nondestructive Testing for Pavement Structural Evaluation." *Proceedings, the 25<sup>th</sup> International Air Transportation Conference*, Austin, Texas, June 1998, pp. 423-446.
42. Uddin, W. and V. Torres-Verdin. "Service Life Analysis for Managing Road Pavements in Mexico." *Proceedings, Fourth International Conference on Managing Pavements*, Durban, South Africa, May 1998, Volume 2, pp. 882-898.
43. Uddin, W. and F. Najafi. "Deterioration Mechanisms and Nondestructive Evaluation for Infrastructure Life-Cycle Analysis." *Proceedings, Infrastructure Condition Assessment Conference*, Boston, Massachusetts, August 25-27, 1997, American Society of Civil Engineers, pp. 524-533.
44. Uddin, W., Z. Pan, P. Noppakunwijai, C.A. Plaxico, and R.M. Hackett. "Finite-Element Dynamic Analysis of Distressed Asphalt Pavement." *Proceedings, 8th International Conference on Asphalt Pavements, International Society of Asphalt Pavements*, Seattle, August 1997, Volume 1, pp. 725-739.
45. Uddin, W. "Service Life Economic Analysis for Pavement Design and Maintenance Planning." *Paper 07\_0010.pdf, Proceedings, CD-ROM, XIII International Road Federation World Meeting*, Toronto, Canada, June 1997, pp. 1-9.
46. Plaxico, C.A., W. Uddin, and R.M. Hackett. "Finite Element Simulation of Vehicle Impact Against a Modified Thrie-Beam Guardrail." *Report No. FHWA-RD-96-212, Proceedings, FHWA Vehicle Crash Analysis Conference*, Federal Highway Administration, McLean, Virginia, April 1997, pp. 79-94.
47. Uddin, W. and R.M. Hackett. "Pavement Nondestructive Evaluation Using Finite-Element Dynamic Simulation." *SPIE Proceedings, Conference on Nondestructive Evaluation of Aging Aircraft, Airports, and Aerospace Hardware*, Scottsdale, Arizona, December 1996, Volume 2945, pp. 282-293.

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48. Plaxico, C.A., W. Uddin, and R.M. Hackett. "A Micromechanical Model for Asphalt Materials." *Proceedings, Materials Congress*, American Society of Civil Engineers, Washington, D.C., November 1996, Volume 1, pp. 761-770.
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53. Uddin, W., A.H. Meyer, W.R. Hudson, and K.H. Stokoe II. "A Structural Evaluation Methodology for Pavements Based on Dynamic Deflections." Report FHWA/TX-86/17+387-1, Texas State Department of Highways and Public Transportation, Austin, Texas, July 1985.
54. Uddin, W., A.H. Meyer, W.R. Hudson, and K.H. Stokoe II. "User Manual for FPEDD1 and RPEDD1 Programs." Report FHWA/TX-86/17+387-2, Texas State Department of Highways and Public Transportation, Austin, Texas, July 1985.
55. Uddin, W., S. Nazarian, W.R. Hudson, A.H. Meyer, and K.H. Stokoe II. "Investigations into Dynaflect Deflections in Relation to Location/Temperature Parameters and In Situ Material Characterization of Rigid Pavements." Report FHWA/TX-83/27+256-5, Texas State Department of Highways and Public Transportation, Austin, Texas, December 1983.

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Research Reports: (continued)

56. Uddin, W., V. Torres-Verdin, W.R. Hudson, A.H. Meyer, B.F. Meyer, and R.B. Rogers. "Dynalect Testing for Rigid Pavement Evaluation." Report FHWA/TX-85/70+256-6F, Texas State Department of Highways and Public Transportation, Austin, Texas, December 1983.
57. Uddin, W. "Forecasting Air Travel Demand and Airport Expansion Needs for Austin Municipal Airport." Center for Transportation Research Report, Prepared for Department of Aviation, The City of Austin, January 1983.

SHORT COURSE/WORKSHOP LECTURE NOTEBOOKS

1. "Traffic Safety and Intelligent Transportation System." a workshop organized by NED University of Engineering & Technology, Karachi, Pakistan, July 15-16, 2008, (partially supported by USAID funding; lecture notebook by W. Uddin and Mir S. Ali).
2. "Air Quality and Global Warming Workshop." PC Hotel in Karachi, Pakistan, organized by the NED University, July 12, 2008, (partially supported by USAID funding; workshop notebook by W. Uddin and Mir S. Ali).
3. "GIS Executive Workshop: GIS-based Decision Support Systems for Infrastructure Management, Disaster Response, and Community Preparedness." NED University, Karachi, Pakistan, June 18, 2008, (partially supported by USAID funding; workshop notebook by W. Uddin and Mir S. Ali).
4. "Advanced GIS Course: Geospatial Analysis for Infrastructure Asset Management and Disaster Assessment." NED University, Karachi, Pakistan, June 19-20, 2008, (partially supported by USAID funding; workshop notebook by W. Uddin).
5. "Road Safety Evaluation in Road and Highway Works." Engineers' Workshop sponsored by Brunei Public Works Department, Brunei Darussalam (coordinated by AsiaEdge, Singapore), November 20-21, 2007, (workshop notebook by W. Uddin).
6. "Traffic Safety Management on Road and Highways." Executive Conference, sponsored by Brunei Public Works Department, Brunei Darussalam (coordinated by AsiaEdge, Singapore), November 19, 2007, (workshop notebook by W. Uddin).
7. "Review of U.S. Best Practices in Traffic Congestion Management." Karachi Metropolitan ITS Stakeholders Group Workshop, sponsored by NED University of Engineering and Technology, Karachi, Pakistan, July 30, 2007, (workshop notebook by W. Uddin and Mir S. Ali).
8. "GIS and Imagery Based Geospatial Analysis." Short course offered at NED University of Engineering and Technology, Karachi, Pakistan (partially supported by USAID funding; hosted by Mir Shabbar Ali of NED University), June 18-21, 2007, (workshop notebook by W. Uddin).
9. "Pavement Engineering and Maintenance Management." Workshop offered at Center for Infrastructure Engineering, Griffith University, Gold Coast Campus, Australia (hosted and coordinated by Professor A.S. Balasubramaniam), September 28-29, 2006, (workshop notebook by W. Uddin).
10. "Pavement Management Systems." one-week short course offered at Department of Civil Engineering, University of Pisa, Italy (hosted and coordinated by Professor Massimo Losa; workshop notebook by W. Uddin), May 17-22, 2004.
11. "Modern Asphalt Technology." One-day short course at Mackenzie University, São Paulo, Brazil, June 5, 2003, (workshop notebook by W. Uddin).
12. "Advanced Computer Simulations of Highway Pavements." One-day short course at Universidade Presbiteriana Mackenzie, São Paulo, Brazil, May 2000, (workshop notebook by W. Uddin).
13. "Tecnología de los Pavimentos II - Modulo 3." Diplomado en Ingeniería de Sistemas Carreteros, Secretaria de Comunicaciones y Transportes/ Departamento de Ingeniería Civil, ITESM, Monterrey, Nuevo Leon, Mexico, April 4-5, 1997, (workshop notebook by W. Uddin).

#### SHORT COURSE/WORKSHOP LECTURE NOTEBOOKS (continued)

14. "Pavement Management System Development and Implementation." sponsored by Presidencia Municipal and CNIC/ICIC, Leon, Mexico, 1994, (lecture notes by V. Torres-Verdin and W. Uddin).
15. Tutorial Session, "Condition and Traffic: Part I - Pavement Condition and Road Inventory Data." Third International Conference on Managing Pavements, Sponsored by Transportation Research Board, San Antonio, Texas, 1994, (lecture notes by W. Uddin).
16. Coordinator and Instructor, "Pavement Management Systems." 3-days short course sponsored by the University of Mississippi, Mississippi Department of Transportation and International Road Federation, Oxford Campus, Mississippi, August 1993, (with K.P. George; workshop notebook by W. Uddin).
17. "Microcomputer Applications in Pavements." 3-days short course sponsored by the University of Mississippi, Mississippi Department of Transportation and International Road Federation, Oxford Campus, Mississippi, August 1993, (with K.P. George; workshop notebook by W. Uddin).
18. Instructor, "Pavement Management." 3-days short course sponsored by the University of Mississippi, Mississippi Department of Transportation and International Road Federation, Oxford Campus, Mississippi, August 1992, (with K.P. George; workshop notebook by W. Uddin).
19. "Airport Pavements." 3-days short course sponsored by the University of Texas at Austin, Center for Transportation Research, and American Association of Airport Executives, August 1987, (coordination and workshop notebook by W. Uddin and B.F. McCullough).

#### COURSE LECTURE NOTEBOOKS

1. ENGR 597-25. "Geospatial Analysis." 3-credit hour course (seniors and graduate students), University of Mississippi, May 2008, updated 2009-2011, p. 250. (required, no other textbook)
2. CE 570. "Infrastructure Management." 3-credit hour course (seniors and graduate students), University of Mississippi, August 2008, 2011, p. 630. (required, with textbook)
3. CE 481. "Transportation Engineering I." 3-credit hour course, University of Mississippi, August 2008, updated 2009, 2011, p. 210. (required, with textbook)
4. CE 417. "Construction Management." 3-credit hour course, University of Mississippi, January 2009, updated 2011, p. 280. (required, with textbook)
5. CE 315. "Construction Materials." 3-credit hour course, University of Mississippi, January 2010, updated 2011, p. 373. (required, with textbook)