

Eyad Masad, Ph.D., P.E., F.ASCE
Zachry Professor in Design and Construction Integration II
Executive Director of Global Partnerships –Texas A&M Engineering
Experiment Station

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EDUCATION

- Ph.D. Civil Engineering (May 1998) (Geomechanics and Infrastructure Materials)
 Washington State University, Pullman, U.S.A
- M.S. Civil Engineering (May 1995)
 Washington State University, Pullman, U.S.A
- B.S. Civil Engineering (January 1993), First Class Honors
 University of Jordan, Amman, Jordan

AWARDS AND DISTINCTIONS

- Fellow of the American Association for the Advancement of Science, Nov 2019.
- James Laurie Prize for 2019 from the Transportation and Development Institute of the American Society of Civil Engineers.
- Best Scientific Paper Award for the Year 2017, Journal Road Materials and Pavement Design, March 2018.
- Dean’s Leadership Award, Texas A&M University at Qatar, April 2017.
- Recipient of the Zachry Professorship in Design and Construction Integration II, October 2015.
- Recognition by the Qatar Engineering Association and the Gulf Engineering Forum for the support of the Engineering Profession, March 2015.
- Certificate of Recognition from AFK50 Committee of the Transportation Research Board for Significant Contributions to the Committee, January 2013.
- Dean’s Meritorious Award, Texas A&M University at Qatar, April 2011.
- Fellow of the American Society of Civil Engineers, December 2010.
- Runner Up for the W.J. Emmons Award for the Best Paper Published in the Journal of the Association of Asphalt Paving Technologists in the Year 2010.
- Best Research Poster Award, Second Annual Gas Processing Symposium, January 2010.
- Halliburton Professorship Award for Scholarly Excellence and Continuing Contributions to the Field of Engineering, Dwight Look College of Engineering, Texas A&M University, March 2009.
- Runner Up for the W.J. Emmons Award for the Best Paper Published in the Journal of the Association of Asphalt Paving Technologists in the Year 2007.

- Research Paper Nominated for the K. B. Woods Award of the Transportation Research Board, November 2007.
- The Texas Transportation Institute/Trinity New Researcher Award, January 2006.
- E.B. Snead I Professorship in Civil Engineering, Texas A&M University, October 2005.
- ConocoPhillips Faculty Fellow for Outstanding Performance and Overall Contributions to the Texas A&M Engineering Program, 2005-2006.
- Best Scientific Paper Award for the Year 2004, International Journal of Road Materials and Pavement Design, March 2005.
- Zachry Award for Excellence in Teaching, Department of Civil Engineering, Texas A&M University, June 2004.
- Outstanding Young Faculty Award, College of Engineering and Architecture, Washington State University, March 2002.
- Career Award, National Science Foundation, January 2002.
- W.J. Emmons Award for the Best Paper Published in the Journal of the Association of Asphalt Paving Technologists in the Year 2001.
- Leon Luck Award for the "Most Effective Professor" Department of Civil and Environmental Engineering, Washington State University, April 2001.
- Eisenhower Faculty Fellowship in Transportation Engineering, Federal Highway Administration, September 1999.
- Eisenhower Graduate Research Fellowship in Transportation Engineering, Federal Highway Administration, September 1997.
- Outstanding Teaching Assistant, Department of Civil and Environmental Engineering, Washington State University, Pullman, April 1997.
- Suksdorf Fellowship for Academic Achievements, College of Engineering, Washington State University, January 1997.
- Honorable Mention in the Student Paper Competition of Washington State University Chapter of the Scientific Research Society, Sigma XI, April 1996.
- First place in the Engineering Sciences Division of the Graduate and Professional Student Research Exposition, Washington State University, April 1996.
- Third place in the student paper competition of Washington State University Chapter of the Scientific Research Society, Sigma XI, April 1995.
- First place in the Engineering Sciences Division of the Graduate and Professional Student Research Exposition, Washington State University, April 1995.

ADMINISTRATIVE APPOINTMENTS

- Executive Director of Global Partnerships –Texas A&M Engineering Experiment Station, (10/17 – present).
- Executive Associate Dean/Vice Dean, Texas A&M University at Qatar (10/14 – 8/17).
- Assistant Dean for Research and Graduate Studies, Texas A&M University at Qatar (9/09-6/10, 4/11-9/14).
- Interim Chief Operations Officer, Texas A&M University at Qatar (4/14 – 7/14).
- Director of the Division of Texas Engineering Experiment Station in Qatar (4/11-2/13).

ACADEMIC AND PROFESSIONAL APPOINTMENTS

- Professor, Zachry Department of Civil Engineering, Texas A&M University, College Station, TX. (9/09 – present).

- Professor, Mechanical Engineering Program, Texas A&M University at Qatar, Doha, Qatar (9/09 – present).
- Associate Professor, Zachry Department of Civil Engineering, Texas A&M University, College Station, TX. (9/05 – 8/09).
- Associate Professor, Texas A&M University at Qatar, Doha, Qatar (7/07 – 8/09).
- Assistant Professor, Department of Civil Engineering, Texas A&M University, College Station, TX. (1/03 – 8/05).
- Research Engineer, Texas Transportation Institute, Texas A&M University, College Station, TX. (9/09 – present).
- Associate Research Engineer, Texas Transportation Institute, Texas A&M University, College Station, TX. (11/05 – 8/09).
- Assistant Research Scientist, Texas Transportation Institute, Texas A&M University, College Station, TX. (1/03 – 8/05).
- Assistant Professor, Department of Civil and Environmental Engineering, Washington State University, Pullman, WA. (8/98 – 12/02).
- Highway Research Engineer, Turner-Fairbank Highway Research Center, Federal Highway Administration, McLean, VA. (8/97 - 8/98).
- Instructor, Washington State University, Pullman, WA. (9/96 - 6/97).
- Research Assistant, Washington State University, Pullman, WA. (1/95 - 8/96).
- Teaching Assistant, Washington State University, Pullman, WA. (1/94 - 12/94).
- Design Engineer, Engineering Consortium Consulting Engineers, Amman, Jordan. (1/93 - 12/93).

VISITING APPOINTMENTS

- Visiting Professor, Universiti Teknologi PETRONAS, Malaysia , Malaysia (3/19-present).
- Honorary Professor, University of Liverpool, UK. (10/11-12/17).
- Visiting Professor, Delft University of Technology, The Netherlands, (7/1/08-8/1/08).

PROFESSIONAL REGISTRATION AND AFFILIATIONS

- Registered Professional Engineer, Texas #96368
- American Society of Civil Engineers (ASCE), Fellow.
- American Association for the Advancement of Science (AAAS), Fellow.
- American Society for Engineering Education (ASEE).
- Geo-Institute, American Society of Civil Engineers (ASCE).
- Transportation Research Board.
- The Association of Asphalt Paving Technologists.

TEACHING

I enjoy teaching immensely and I have developed several undergraduate and graduate courses. I have taught courses on various topics including mechanics of materials, statics and dynamics, constitutive modeling of materials, materials science and engineering, characterization of highway materials, pavement analysis and design, and engineering ethics.

RESEARCH PROJECTS AND OUTCOMES

| <u>Sponsor</u> | <u>PI or Co-PI</u> | <u>Project Title</u> | <u>Amount</u> | <u>Dates</u> |
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| Qatar National Research Fund | <u>Eyad Masad</u> Amit Bhasin | Use of Locally Produced Recycled Polymers as Asphalt Binder Modifier for Roads in Qatar | \$580,000 | 6/1/19-5/30/22 |
| Qatar Petrochemical Company | <u>Eyad Masad</u> | Polymer Innovation Program | \$150,000 | 10/1/18-9/30/21 |
| Texas A&M at Qatar-RRSG Program | <u>Eyad Masad</u> Bilal Mansoor Thomas Seers Zachary Grasley | Additive Manufacturing of Concrete for Novel Applications | \$240,000 (estimated) | 1/1/19-12/30/20 |
| Multiple Companies in Qatar | <u>Eyad Masad</u> | Consortium for Asphalt Pavement Technologies | Expected \$100,000 per year | 2/1/2018- present |
| Qatar National Research Fund | <u>Eyad Masad</u> Tom Scarpas Emad Kassem | Thermo-Mechanical Tire-Pavement Interaction: Computational Modelling and Field Measurements | \$896,972 | 2/1/15-3/31/18 |
| Qatar Petrochemical Company | <u>Eyad Masad</u> <u>Mariam Al-Ali</u> | Sponsorship of the Annual Materials Science and Engineering Symposium | \$300,000 | 2015-2019 |
| Qatar National Research Fund | <u>Dallas Little</u> Eyad Masad Emad Kassem Ghassan Chehab Imad Al-Qadi | Design and Evaluation of Short-term and Long-term Performance of Warm Asphalt Mixtures in the State of Qatar | \$1,019,811 | 10/15/12-3/31/16 |
| Qatar Petroleum | <u>Eyad Masad</u> | Vehicle Tires and Road Accidents | \$450,000 | 12/13/12-5/30/15 |
| Qatar National Research Fund | <u>Zachary Grasley</u> Rashid Abu Al-Rub Eyad Masad Dan Zollinger | Thermal Dilation and Internal Damage of Cryogenic Concrete Utilized for Direct Liquefied Natural Gas Containment | \$1,004,624 | 1/15/12-3/31/15 |
| Qatar National Research Fund | <u>Rashid Abu Al-Rub and Dallas Little</u> Eyad Masad Silvia Caro-Sanchez Edgar Sanchez Silva | Modeling of Environmental-Assisted Degradation Processes in Asphalt Mixtures Using Micromechanical and Continuum Damage Theories | \$992,990 | 1/15/12-3/31/15 |
| Qatar National Research Fund | <u>Hassan Bashir</u> Colleen Murphy Eyad Masad Paolo Gardoni Ed Harris | Professional Ethics in an Inter-civilizational Perspective: Towards a Joint East-West Approach | \$534,883 | 1/15/12-1/14/15 |
| Federal Highway Administration Western Research Institute | <u>Dallas Little</u> Eyad Masad Robert Lytton Amit Bhasin Amy Epps Martin Charles Glover | Asphalt Pavement Consortium | \$5,466,000 | 4/1/07-3/31/14 |

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| National Science Foundation | <u>Colleen Murphy</u> Hassan Bashir Charles Harris Paolo Gardoni Eyad Masad | US-Qatar Workshops: Engineering Ethics for a Globalized World | \$58,960 | 6/1/11-5/31/13 |
| Qatar Foundation | <u>Hassan Bashir</u> Eyad Masad | Support for Professional Ethics in a Globalized World | \$35,000 | 1/1/11-12/30/11 |
| Qatar National Research Fund | <u>Eyad Masad</u> Rashid Abu Al-Rub Dallas Little Okan Sirin Imad Al-Qadi (Consultant) | Multi-scale Computational Models for Predicting Performance of Asphalt Pavements under Realistic Conditions | \$971,047 | 09/1/09-2/28/13 |
| Qatar National Research Fund | <u>Eyad Masad</u> Dallas Little | Innovative Design of Road Materials Using Physio-Chemical Properties, Imaging Techniques and Constitutive Modeling | \$380,000 | 5/12/08-5/31/11 |
| Qatar Science and Technology Park | <u>Eyad Masad</u> Howard Hanley Hassan Bazzi Dallas Little | Pavement Subgrade Polymer Stabilization: A Novel Approach | \$386,705 | 5/1/09-5/31/11 |
| Federal Highway Administration | <u>Eyad Masad</u> K. Rajagopal Tom Scarpas | Mathematical Models to Scientifically Explain the Compaction of Hot Mix Asphalt | \$480,000 | 10/1/07-8/31/10 |
| Shell Company | <u>Eyad Masad</u> Dallas Little | Monitoring and Performance Evaluation of SEAM Sections in Ras Lafan | \$50,000 | 5/15/08 – 2/14/10 |
| Federal Highway Administration | <u>Eyad Masad</u> | Highway for Life Program on the Development of AIMS | \$40,000 | 4/1/08-3/31/09 |
| Pine Instruments | | | | |
| Southwest University Transportation Center | <u>Eyad Masad</u> Rashid Abu Al-Rub Amit Bhasin | Improving the Performance of Asphalt Pavements through Developing a Predictive Model with Fundamental Material Properties | \$65,000 | 9/1/07-8/31/08 |
| Southwest University Transportation Center | <u>Eyad Masad</u> Rashid Abu Al-Rub | Physically-based Model for Predicting the Susceptibility of Asphalt Pavements to Moisture-Induced Damage | \$65,000 | 9/1/08-8/31/09 |
| EPSRC (United Kingdom) | <u>Gordon Airey</u> Eyad Masad and others | International Collaboration on Surface Energy, Adhesion, and Micro-Structural Characterization | \$330,000 (150,000 pounds) | 10/1/07 – 4/30/09 |
| TxDOT | <u>Eyad Masad</u> Robert Lytton Dallas Little | Surface Energy of Asphalt Binders and Aggregates | \$170,000 | 9/1/06-8/31/08 |
| TxDOT | <u>Eyad Masad</u> Soheil Nazarian | Aggregate Resistance to Polishing and Its Relationship to Skid Resistance | \$365,000 | 9/1/06-8/31/09 |

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| FHWA TTI | <u>Eyad Masad</u> | Simulation, Imaging and Mechanics of Asphalt Pavements | \$610,000 | 2/1/03 – 12/31/08 |
| NSF | <u>Eyad Masad</u> | CAREER: Microstructure Characterization and Modeling of Geomaterials | \$375,000 | 1/1/03-12/31/08 |
| TxDOT | <u>Eyad Masad</u> | Using Imaging Techniques to Improve the Compaction of HMA | \$340,000 | 9/1/05-8/31/08 |
| TxDOT | <u>Soheil Nazarian</u> Eyad Masad | Influence of Coarse Aggregate Properties on HMA Load Resistance | \$380,000 | 9/1/05-8/31/08 |
| FHWA | <u>Eyad Masad</u> | Eisenhower Graduate Fellowship for Mr. Jonathan Howson | \$6,500 | 9/1/06-12/31/07 |
| NSF Texas A&M University | <u>Dallas Little</u> Eyad Masad Amy Epps Martin | X-Ray Computed Tomography System for Microstructure Characterization, Analysis, And Modeling | \$500,000 | 9/1/04 – 8/31/07 |
| Federal Highway Administration/Western Research Institute | <u>Dallas Little</u> Eyad Masad Robert Lytton | Performance Validation of Asphalt Pavement Test Sections | \$400,000 | 2/18/04 – 12/1/06 |
| TxDOT | <u>Eyad Masad</u> | Support for the Implementation of AIMS Equipment in TxDOT Operations | \$50,000 | 3/1/05-5/31/06 |
| NCHRP-IDEA | <u>Eyad Masad</u> | A Methodology for Predicting Pavement Microtexture using Image Analysis of Aggregate Shape | \$45,000 | 10/1/05-10/1/06 |
| International Center for Aggregate Research (ICAR) | <u>Eyad Masad</u> Dallas Little | Role of Aggregate Characteristics on Resistance to Load in HMA | \$200,000 | 12/15/03-5/1/06 |
| TxDOT | <u>Robert Lytton</u> Eyad Masad Dallas Little | Application of Surface Energy Measurements to Evaluate Moisture Susceptibility of Asphalt and Aggregates | \$659,806 | 9/1/03-8/31/06 |
| TxDOT | <u>Eyad Masad</u> | Pilot Implementation of Aggregate Imaging System (AIMS) | \$95,000 | 4/13/04-8/31/04 |
| TxDOT | <u>Dan Zollinger</u> Eyad Masad | Use of Crushed Gravel in Concrete Paving | \$275,338 | 9/1/03-8/31/05 |
| NSF | <u>Eyad Masad</u> | Research Experience for Undergraduates | \$12,000 | 1/1/04-12/31/05 |
| Innovative Research Program, Civil Engineering, Texas A&M University | <u>Eyad Masad</u> | Probabilistic Model for HMA Permeability Based on X-ray CT Analysis of Air Voids | One year funding for a graduate student | 9/1/03 – 8/31/04 |
| NCHRP | <u>Eyad Masad</u> Joe Button Dallas Little Erol Tutumluer | Test Methods for Characterizing Aggregate Shape, Texture, and Angularity | \$500,000 | 7/2/02-6/1/05 |
| NSF Murdock Foundation WSU | <u>Eyad Masad</u> Hussain Zbib B. Muhunthan Stephen Antolovich | X-ray Computed Tomography System for the Modeling and Characterization of Materials with Microstructure | \$866,281 | 8/1/01 – 7/31/04 |

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| NSF | <u>B. Muhunthan</u> Eyad Masad Hussain Zbib | Experimental and Theoretical Investigation of Deformation in Granular Materials: A Micromechanics Approach | \$300,721 | 5/1/01 – 4/30/04 |
| FHWA | <u>Eyad Masad</u> | Imaging and Mechanics of Asphalt Pavements | \$140,000 | 5/1/01 – 12/30/02 |
| FHWA | <u>Eyad Masad</u> | Graduate Student Eisenhower Fellowship | \$55,000 | 1/1/01-12/30/02 |
| FHWA/WSDOT | <u>Eyad Masad</u> <u>Rafik Itani</u> | Design of High Performance Concrete with Improved Permeability and Creep Properties | \$180,000 | 7/1/01-6/30/03 |
| International Center for Aggregate Research (ICAR) | <u>Dallas Little</u> Eyad Masad | Evaluation of Aggregates Characteristics Affecting HMA Performance | \$385,000 | 9/1/00 – 5/1/03 |
| NCHRP-IDEA | <u>Eyad Masad</u> Tom Papagiannakis | The Development of a Computer Controlled Image Analysis System for Measuring Aggregate Properties | \$76,000 + \$25,000 WSU | 1/1/01-10/30/02 |
| Advanced Resin Systems, Inc. | <u>Eyad Masad</u> Tom Papagiannakis | Improving Asphalt Binder Properties Using Furfural | \$30,379 | 1/1/01-12/30/01 |
| NSF | <u>Tom Papagiannakis</u> Eyad Masad B. Muhunthan | Acquisition of Specialized Equipment for the Dynamic Testing of Geomaterials | \$50,000 | 9/1/00-8/31/01 |
| Idaho Department of Transportation | <u>Fouad Bayomy</u> Eyad Masad | Development and Performance Prediction of Idaho Superpave Mixes | \$215,156 | 1/1/00 – 5/31/01 |
| FHWA/National Highway Institute | <u>Eyad Masad</u> | Eisenhower Faculty Fellowship in Transportation Engineering | \$1,800 | 10/1/99 – 1/20/00 |
| WSDOT | <u>Eyad Masad</u> | Implementation of High Performance Concrete in Washington State | \$118,740 | 6/1/99 - 12/31/01 |
| APAW/WSDOT | <u>Eyad Masad</u> T. Papagiannakis | Expanding the Superpave Facility at WSU | \$102,500 | 8/1/99- 8/1/01 |
| FHWA/Asphalt Institute | <u>Eyad Masad</u> | Correlation of Aggregate Shape Properties to Asphalt Mix Performance | \$38,464 | 2/1/00 - 1/31/01 |
| FHWA/Asphalt Institute | <u>Eyad Masad</u> Mike Anderson | Optimizing Performance Testing and Compaction Procedures of Asphalt Concrete | \$94,590 | 5/1/99 - 1/31/01 |
| FHWA/Asphalt Institute | <u>Eyad Masad</u> | Mechanistic modeling of asphalt film in pavements | \$52,756 | 10/31/98 - 8/31/00 |

Patents and Novel Test Methods

- I have developed the Aggregate Imaging Measurement System (AIMS). AIMS is a computer-controlled system that employs imaging analysis techniques for measuring the shape characteristics of aggregate particles. The system is commercially available. It is currently being used by the Federal Highway Administration, several State Highway Agencies, and universities in the United States and internationally.
- Hanley, H. J. M., Masad, E., Iyengar, S. R., Rodriguez, A. and Bazzi, H. S. “Co-Polymer Soil Subgrade Binder”, U.S. patent application Issues on September 13, 2016 (**Patent No. US 9,441,332 B2**).

Books and Special Publications

1. *Advances in Materials and Pavement Performance Prediction*, Editors: Eyad Masad, Amit Bhasin, Tom Scarpas, Ilaria Menapace and Anupam Kumar, CRC Press, Taylor and Francis Group, ISBN 9781138313095 (2018).
2. *Engineering Ethics in a Globalized World*, Editors: Colleen Murphy, Paolo Gardoni, Hassan Bashir, Charles E. Harris, and Eyad Masad, Springer (2015).
3. *Excellence and Impact of Research at Texas A&M University at Qatar*, Editors: Mark Weichold, Kenneth Hall and Eyad Masad, QScience Publishers (2013), ISBN: 978-99921-95-33-8, 240 pp,
4. *Co-Existing in a Globalized World: Key Themes in Inter-Professional Ethics*, Editors: Hassan Bashir, Philip Gray, and Eyad Masad, Lexington Books, (2013), ISBN: 978-0-7391-8120-1, 161 pp.
5. *Applications of Advanced Models to Understand Behavior and Performance of Asphalt Mixtures*; Transportation Research Circular, Transportation Research Board, Circular Number E-C161. Editor: E. Masad, (2012), 77 p.
6. *Pavement Design and Materials*, John Wiley and Sons, Inc., Hoboken, NJ. T. Authors: Papagiannakis and E. Masad. (2007), ISBN 978-0-471-21461-8, 552 pp.
7. *Efficient Pavements and Transportation Systems: Characterization, Mechanism, Simulation, and Modeling, Proceedings of the fourth International Gulf Conference on Roads*, Editors, I. Al-Qadi, T. Sayed, N. Alnuimi and E. Masad, Taylor and Francis Publishing Company, (2008).
8. *Moisture Induced Damage of Asphalt Mixes: Characterization, Visualization and Simulation of the Fundamental Processes*, Vol. 9, No. 2, International Journal of Pavement Engineering, Editors: Masad, E. and Kringos, N. (2008)
9. *Analysis of Asphalt Pavements and Systems: Engineering Methods, Geotechnical Special Publication No. 176*, Geo-Institute, American Society of Civil Engineers. Editors: Wang, L. and Masad, E. (2007), 173 pp.
10. *Towards a Mechanistic Approach for the Analysis and Design of Asphalt Pavements*, International Journal of Geomechanics, Vol. 7, No. 2, American Society of Civil Engineering, Editors: Masad, E. and Scarpas, A. (2007).
11. *Advances in Asphalt Pavements*, International Journal of Road Materials and Pavement Design, Vol. 8, No. 2, Editors: Birgisson, B. and Masad, E. (2007), 231 p.
12. *Asphalt Concrete: Simulation, Modeling, and Experimental Characterization, Geotechnical Special Publication 146*, Geo-Institute, American Society of Civil Engineers. Editors: Masad, E., Panoskaltzis, V., and Wang, L. (2006), 160 p.
13. *Recent Advances in Material Characterization and Modeling of Pavement Systems*, Geotechnical Special Publication Number 123, Geo-Institute, American Society of Civil Engineers. Editors: Tutumluer, E., Masad, E., Najjar, Y. (2004), 241 p.

14. *Applications of Imaging Technologies in Civil Engineering Materials*, Journal of Computing in Civil Engineering, Vol. 18, No. 1, American Society of Civil Engineers, Editors: Masad, E., and Sivakumar, K., (2004).
15. *Micromechanical Characterization and Constitutive Modeling of Asphalt Mixes*, Journal of Materials in Civil Engineering, Vol. 16, No. 2, American Society of Civil Engineers, Editors: Masad, E., and Mohammad, L., (2004).

Refereed Journal Papers (Google Scholar Accessed on 12 January 2020, H-Index: 61, Citations: 12,457)

1. Sadeq, M., Huang, C.W., Masad, E., Al-Khalid, H., and Sirin, O. (2019). "Damage and Recovery Characteristics of Warm Mix Asphalt," *International Journal of Road Materials and Pavement Design*, (Under Review).
2. Bhaskar, V., Masad, E., Roja, L., Sadeq, M, and Rajagopal, K. (2019). "A Two-Constituent Nonlinear Viscoelastic Model for Asphalt Mixtures," *International Journal of Road Materials and Pavement Design*, (Accepted for Publication).
3. Darabi, M., Huang, C.W., Bazzaz, M., Masad, E., and Little, D. (2019). "Characterization and Validation of the Nonlinear Viscoelastic-Viscoplastic with Hardening-Relaxation Constitutive Relationship for Asphalt Mixtures," *Construction and Building Materials*, **Vol. 216**, pp. 648-660.
4. Sadek, H., Sadeq, M., Masad, E., Al-Khalid, H., and Sirin, O. (2019). "Probabilistic Viscoelastic Continuum Damage Analysis of Fatigue Life of Warm Mix Asphalt," *Journal of Transportation Engineering: Part 2, Pavements, American Society of Civil Engineers*, **Vol. 145**, No. 3.
5. Menapace, I., Yiming, W., and Masad, E. (2019). "Effects of Environmental Factors for Chemical Composition of Asphalt Binders," *Energy and Fuels*, **Vol. 33**, No. 4, pp. 2614-2624.
6. Roja, K. L., and Masad, E. (2019). "Influence of Chemical Constituents of Asphalt Binders on their Rheological Properties," *Transportation Research Record, Journal of the Transportation Research Board*, **Vol. 2673**, No. 6, pp. 458-466.
7. Kassem, E., Garcia Cucalon, L., Masad, E., and Little, D. (2018). "Effect of Warm Mix Additives on the Interfacial Bonding Characteristics of Asphalt Binders," *International Journal of Pavement Engineering*, **Vol. 19**, No. 12, pp. 1111-1124.
8. Menapace, I., and Masad, E. (2018). "The Influence of Moisture on the Evolution of the Microstructure of Asphalt Binders with Aging," *International Journal of Road Materials and Pavement Design*, (Published online, In Press).
9. Menapace, I, Garcia Cucalon, L., Kaseer, F., Masad, E., and Epps Martin, A. (2018). "Application of Low Field Nuclear Magnetic Resonance to Evaluate Asphalt Binder Viscosity in Recycled Mixes," *Construction and Building Materials*, **Vol. 170**, pp. 725-736.
10. Castillo, D., Caro, S., Darabi, M., and Masad, E. (2018). "Influence of Aggregate Morphology on the Mechanical Performance of Asphalt Mixtures," *Road Materials and Pavement Design*, **Vol. 19**, No. 4, pp. 972-991.

11. Caro, S., Castillo, D., Darabi, M., and Masad, E. (2018). "Influence of Different Sources of Microstructural Heterogeneity on the Degradation of Asphalt Mixtures," *International Journal of Pavement Engineering*, **Vol. 19, No. 1, pp. 9-23.**
12. Menapace, I, Garcia Cucalon, L., Kaseer, F., Arámbula-Mercado, E., Epps Martin, A., Masad, E., and King, G. (2018). "Effect of Recycling Agents in Recycled Asphalt Binders Observed with Microstructural and Rheological Tests, *Construction and Building Materials*, **Vol. 158, pp. 61–74.**
13. Sadeq, M., Masad, E., Al-Khalid, H., Sirin, O., & Mehrez, L. (2018). "Linear and Nonlinear Viscoelastic and Viscoplastic Analysis of Asphalt Binders with Warm Mix Asphalt Additives," *International Journal of Pavement Engineering*, **Vol. 19, No. 10, pp. 857–864.**
14. Kogbara, R., Masad, E., Kassem, E., and Scarpas, T. (2018). "Skid Resistance Characteristics of Asphalt Pavements in Hot Climates," *Journal of Transportation Engineering, Part B: Pavements*, **Vol. 144, No. 2.**
15. Tang, T., Anupam, K., Kasbergen, C., Kogbara, R. B., Scarpas, A., and Masad, E. A. (2018). "Finite Element Studies of Skid Resistance Under Hot Weather Condition," *Transportation Research Record, Journal of the Transportation Research Board*, **Vol. 2672, No. 40, pp. 382-394.**
16. Kogbara, R. B., Masad, E., Woodward, D., and Millar, P. (2018). "Relating Surface Texture Parameters from Close Range Photogrammetry to Grip-Tester Pavement Friction Measurements," *Construction & Building Materials*, **Vol. 166, pp. 227 - 240.**
17. Rodriguez, A., Ayyavu, C., Iyengar, S. R., Bazzi, H. S., Masad, E., Little, D. and Hanley, H. (2018) "Polyampholyte Polymer as Stabilizer for Subgrade Soil," *International Journal of Pavement Engineering*, **Vol. 19, No. 6, pp. 467-478.**
18. Menapace, I. and Masad, E. (2017). "Evolution of the Microstructure of Warm Mix Asphalt Binders with Aging in an Accelerated Weathering Tester," *Journal of Materials in Civil Engineering*, **Vol. 29, No. 10.**
19. Rahmani, E., Darabi, M., Little, D., and Masad, E. (2017). "Constitutive Modeling of Coupled Aging-Viscoelastic Response of Asphalt Concrete," *Construction and Building Materials*, **Vol. 131, pp. 1-15.**
20. Garcia Cucalon, L., Little, D.N., Masad, E., Kassem, E. (2017). "Fundamental Evaluation of Moisture Damage in Warm-Mix Asphalts," *Road Materials and Pavement Design*, **Vol. 18, No. 1, pp. 258 - 283.**
21. Darabi, M., Rahmani, E., Little, D., Masad, E., and Rushing, J. (2017). "A Computational-Experimental Method to Determine the Effective Diffusivity of Asphalt Concrete," *Journal of Engineering Mechanics*, **Vol 143, No. 9.**
22. Garcia Cucalon, L., Bhasin, A., Kassem, E., Little, D., Herbert, B., and Masad, E. (2017). "Physicochemical Characterization of Binder–Aggregate Adhesion Varying with Temperature and Moisture," *Journal of Transportation Engineering: Part B, Pavements*, **Vol. 143, No. 3.**
23. Castillo, D. Caro, S. Darabi, M. Masad, E (2017). "Modelling Moisture-Mechanical Damage in Asphalt Mixtures Using Random Microstructures and a Continuum Damage Formulation, *Road Materials and Pavement Design*, **Vol. 18, No. 1 pp. 1 -21.**

24. Menapace, I., Nogueira d'Eurydice, M., Galvosas, P., Hunter, M., Sirin, O., and Masad, E. (2017). "Aging Evaluation of Asphalt Sample with Low Field Nuclear Magnetic Resonance," *Materials Characterization*, **Vol. 128**, pp. 165-175.
25. Menapace, I., Yiming, W., and Masad, E. (2017). "Chemical Analysis of Surface and Bulk of Asphalt Binders Aged with Accelerated Weathering Tester and Standard Aging Methods," *Fuel*, **Vol. 202**, pp. 366-379.
26. Kogbara, R.B., Masad, E.A., Kassem, E., Scarpas, A. and Anupam, K. (2016). "A State-of-the-Art Review of Parameters Influencing Measurement and Modelling of Skid Resistance of Asphalt Pavements," *Construction and Building Materials*, **Vol. 114**, pp. 602 – 617.
27. Menapace, I., and Masad, E. (2016). "Evolution of the Microstructure of Unmodified and Polymer Modified Asphalt Binders with Aging in an Accelerated Weathering Tester," *Journal of Microscopy*, **Vol. 263**, No. 3, pp. 341-356.
28. Sadeq, M., Al-Khalid, H., Masad, E., and Sirin, O. (2016). "Comparative Evaluation of Fatigue Resistance of Warm Fine Aggregate Asphalt Mixtures," *Construction and Building Materials*, **Vol. 109**, pp. 8–16.
29. Rahman, S. Grasley, Z., Masad, E., Zollinger, D., Iyengar, S., Kogbara, R. (2016). "Simulation of Mass, Linear Momentum, and Energy Transport in Concrete with Varying Moisture Content during Cooling to Cryogenic Temperatures," *Transport in Porous Media*, **Vol. 112**, No. 1, pp. 139-166.
30. Kogbara, R.B., Iyengar, S.R., Grasley, Z.C., Rahman, S., Masad E.A., and Zollinger, D.G. (2016). "Correlation between Thermal Deformation and Microcracking in Concrete during Cryogenic Cooling," *Nondestructive Testing and Evaluation International*, **Vol. 77**, pp. 1 – 10.
31. Menapace, I., Masad, E., Papavassiliou, G., Kassem, E. (2016). "Evaluation of Aging in Asphalt Cores Using Low Field Nuclear Magnetic Resonance", *International Journal of Pavement Engineering*, **Vol. 17**, No. 10, pp. 847-860.
32. Kassem, E., Chowdhury, A., Scullion, T., Masad, E. (2016). "Application of Ground Penetrating Radar in Measuring the Density of Asphalt Pavements and its Relationship to Mechanical Properties," *International Journal of Pavement Engineering*, **Vol. 17**, No. 6, pp. 503-516.
33. Kasbergen, C., Scarpas, A., Masad, E., Rajagopal, K., and Alipour, A. (2016). "Finite Element Modeling of Field Compaction of Hot Mix Asphalt-Part I: Theory," *International Journal of Pavement Engineering*, **Vol. 17**, No. 1, pp. 24-38.
34. Sadek, H., Masad, E., Al-Khalid, H., Sirin, O. (2016). "Probabilistic Analysis of Fatigue Life for Asphalt Mixtures using the Viscoelastic Continuum Damage Approach," *Construction and Building Materials*, **Vol. 126**, pp. 227–244.
35. Masad, E., Koneru, S., Kassem, E., Scarpas, A., Kasbergen, C., Rajagopal, K. (2016). "Finite Element Modeling of Field Compaction of Hot Mix Asphalt-Part II: Applications," *International Journal of Pavement Engineering*, **Vol. 17**, No. 1, pp. 13-23.

36. Menapace, I., and Masad, E. and Bhasin, A. (2015). "Effect of Treatment Temperature on the Microstructure of Asphalt Binders: Insights on the Development of Dispersed Domains", *Journal of Microscopy*, **Vol. 262, No. 1, pp. 12-27.**
37. Menapace, I., Masad, E., Bhasin, A., Little, D. (2015). "Microstructural Properties of Warm Mix Asphalt Before and After Laboratory-Simulated Long-Term Aging", *Road Materials and Pavement Design*, **Vol. 16, No. 1, pp. 2-20.**
38. Kogbara, R.B., Iyengar, S.R., Grasley, Z.C., Masad, E.A. and Zollinger, D.G. (2015). "Non-destructive Evaluation of Concrete Mixtures for Direct LNG Containment" *Materials & Design*, **Vol. 82, pp. 260-272.**
39. Caro, S., Castillo, D., Masad, E. (2015). "Incorporating the Heterogeneity of Asphalt Mixtures in Flexible Pavements Subjected to Moisture Diffusion," *International Journal of Pavement Engineering*, **Vol. 16, No. 5, pp. 432-444.**
40. Awed, A., Kassem, E., Masad, E., and Little, D. (2015). "Method for Predicting the Laboratory Compaction Behavior of Asphalt Mixtures," *Journal of Materials in Civil Engineering*, ASCE, **Vol. 27, No. 11.**
41. Sadek, H., Masad, E., Sirin, O., Al-Khalid, H., and Hassan, K. (2015), "Performance Evaluation of Full-Scale Sections of Asphalt Pavements in the State of Qatar," *Journal of Performance of Constructed Facilities* (ASCE), **Vol. 29, No. 5.**
42. You, T., Abu Al-Rub, R., Masad, E., Kassem, E., and Little, D. (2014). "Three-Dimensional Microstructural Modeling Framework for Dense-Graded Asphalt Concrete Using a Coupled Viscoelastic, Viscoplastic, and Viscodamage Model," *Journal of Materials in Civil Engineering*, **Vol. 26, No. 4, pp. 607-621.**
43. Mehrez, L., Kassem, E., Masad, E. and Little, D. (2014). "Stochastic Identification of linear-Viscoelastic Models of Aged and Unaged Asphalt Mixtures," *Journal of Materials in Civil Engineering*, **Vol. 27 No. 4.**
44. Kogbara, R.B., Iyengar, S.R., Grasley, Z.C., Rahman, S. Masad, E.A. and Zollinger, D.G. (2014). "Relating Damage Evolution of Concrete Cooled to Cryogenic Temperatures to Permeability". *Cryogenics*, **Vol. 64, pp. 21 – 28.**
45. Shakiba, M., Darabi, M.K., Abu Al-Rub, R.K., Masad, E., Little, D.N. (2014) "Microstructural modeling of asphalt concrete using a coupled moisture–mechanical constitutive relationship," *International Journal of Solids and Structures*, **Vol. 51, No. 25, pp. 4260-4279.**
46. Shakiba, M., Darabi, M.K., Abu Al-Rub, R.K., Little, D.N., Masad, E. (2014). "Constitutive Modeling of the Coupled Moisture-Mechanical Response of Particulate Composite Materials with Application to Asphalt Concrete," *Journal of Engineering Mechanics*, **Vol. 141, No. 2, pp.**
47. Sadek, H., Masad, E., Sirin, O., Al-Khalid, H., Sadeq, H., and Little, D. (2013). "Implementation of Mechanistic-Empirical Pavement Analysis in the State of Qatar," *International Journal of Pavement Engineering*, **Vol. 15, No. 6, pp. 495-511.**

48. Khorasani, S., Masad, E., Kassem, E., and Abu Al-Rub, R. (2013). "Nano-Mechanical Characterization of the Mastic, Aggregates, and Interfacial Zone in Asphalt Composites," *Journal of Testing and Evaluation*, **Vol. 41, No. 6, pp. 924-932**.
49. Rahmani, E., Darabi, M., Abu Al-Rub, R., Masad, E., Little, D. (2013). "Effect of Confinement Pressure on the Nonlinear-Viscoelastic Response of Asphalt Concrete at High Temperatures," *Construction & Building Materials*, **Vol. 47, pp. 779-788**.
50. Kassem, E., Awed, A., Masad, E. and Little, D. (2013). "Development of a Predictive Model for Skid Loss of Asphalt Pavements," *In Transportation Research Record 2372, Journal of the Transportation Research Board*, **pp. 83-96**.
51. Kogbara, R.B., Iyengar, S., Grasley, Z., and Masad, E., and Zollinger, D. (2013). "A review of concrete properties at cryogenic temperatures: Towards direct LNG containment". *Construction and Building Materials*, **Vol. 47, pp. 760 - 770**.
52. Darabi, M., Abu Al Rub, R., Masad, E., Little, D. (2013). "Constitutive modeling of fatigue damage response of asphalt concrete materials with consideration of micro-damage healing," *International Journal of Solids and Structures*, **Vol. 50, No. 19, pp. 2901-2913**.
53. You, T., Masad, E., Abu Al-Rub, R.K., Kassem, E., and Little, D. (2014). "Calibration and Validation of a Comprehensive Constitutive Model for Asphalt Mixtures," *Transportation Research Record 2447, Journal of the Transportation Research Board*, **pp. 13-22**.
54. Sousa, P., Kassem, E., Masad, E., and Little, D. (2013). "New Design of Fine Aggregate Mixtures and Automated Method for Analysis of Dynamic Mechanical Characterization Data," *Construction and Building Materials*, **Vol. 41, pp. 213-223**.
55. Kassem, E., Grasley, Z., and Masad, E. (2013). "Analysis of Viscoelastic Poisson's Ratio of Asphalt Mixtures," *International Journal of Geomechanics, ASCE*, **Vol. 13, No. 2, pp. 162-169**.
56. Darabi, M., Abu Al-Rub, R., Masad, E., and Little, D. (2013). "Constitutive Modeling of Fatigue Damage Response of Asphalt Concrete Materials," *In Transportation Research Record 2373, Journal of the Transportation Research Board*, **pp 11-21**.
57. Darabi, M., Abu Al-Rub, R., Masad, E., and Little, D. (2013). "Constitutive Modeling of Cyclic Viscoplastic Response of Asphalt Concrete," *In Transportation Research Record 2373, Journal of the Transportation Research Board*, **pp. 22-33**.
58. Shakiba, M., Abu Al-Rub, R., Darabi, M., You, T., Masad, E., and Little, D. (2013). "Continuum Coupled Moisture-Mechanical Damage Model for Asphalt Concrete," *In Transportation Research Record 2372, Journal of the Transportation Research Board*, **pp. 72-82**.
59. Iyengar, S., Masad, E., Rodriguez, A., Bazzi, H., Little, D., and Hanley, H. (2013). "Pavement Subgrade Stabilization Using Polymers: Characterization and Performance," *Journal of Materials in Civil Engineering, ASCE*, **Vol. 25, No. 4, pp. 472-483**.
60. You, E., Abu Al-Rub, R., Masad, E., and Little, D. (2013). "X-ray CT-Based Three-Dimensional Microstructural Modeling of Asphalt Concrete," *In Transportation Research Record 2373, Journal of the Transportation Research Board*, **pp. 63-70**.

61. Darabi, M., Abu Al-Rub, R., Masad, E., and Little, D. (2013). "Cyclic Hardening-Relaxation Viscoplasticity Model for Asphalt Concrete Materials," *Journal of Engineering Mechanics*, ASCE **Vol. 139**, pp. 832-847.
62. Darabi, M., Abu Al-Rub, R., Masad, E., Huang, C.W., and Little, D. (2012). "A Modified Viscoplastic Model to Predict the Permanent Deformation of Asphaltic Materials Under Cyclic Compression Loading at High Temperatures," *International Journal of Plasticity*, **Vol. 35**, pp. 100-134.
63. Abu Al-Rub, R.K., Huang, C.W., Darabi, M.K., Masad, E.A, Little, D., (2012). "Comparing Finite Element and Constitutive Modeling Techniques for Predicting Rutting of asphalt pavements," *International Journal of Pavement Engineering*, **Vol. 13**, No. 4, pp. 322-338.
64. Howson, J., Masad, E., Little, D., and Kassem, E. (2012). "Relationship between Bond Energy and Total Work of Fracture for Asphalt Binder-Aggregate Systems," *International Journal of Road Materials and Pavement Design*, **Vol. 13**, pp. 281-303.
65. Kassem, E., Scullion, T., Masad, E., and Chowdhury, A. (2012). "Comprehensive Evaluation of Compaction of Asphalt Pavements and a Practical Approach for Density Predictions," *In Transportation Research Record 2268, Journal of the Transportation Research Board*, pp. 98-107.
66. Darabi, M., Abu Al-Rub, R., Masad, E., and Little, D. (2012). "A Thermodynamic Framework for Constitutive Modeling of Time- and Rate-Dependent Materials. Part II: Numerical Aspects and Application to Asphalt Concrete," *International Journal of Plasticity*, **Vol. 35**, pp. 67-99.
67. Darabi, M.K., Abu Al-Rub, R.K., Masad, E.A., Little, D., (2012). "Thermodynamic based model for coupling viscoelastic, viscoplastic, and viscodamage constitutive behavior of asphalt mixtures," *International Journal for Numerical and Analytical Methods in Geomechanics*, **Vol. 36**, No. 7, pp. 817-854.
68. You, T., Abu Al-Rub, R.K., Darabi, M.K., Masad, E.A, Little, D., (2012) "Three-dimensional microstructural modeling of asphalt concrete using a unified viscoelastic-viscoplastic-viscodamage model," *Construction & Building Materials*, **Vol. 28**, No. 1, pp. 531-548.
69. Elseifi, M.A., Mohammad L.N, Kassem, E., Ying, H., and Masad, E., (2011). "Quantification of Damage in the Dynamic Complex Modulus and Flow Number Tests Using X-Ray Computed Tomography." *Journal of Materials in Civil Engineering*, ASCE, **Vol. 23**, No. 12, pp. 1687-1696.
70. Kassem, E., Masad, E., Lytton, R., and Chowdhury, A., (2011). "Influence of Air Voids on Mechanical Properties of Asphalt Mixtures." *International Journal of Road Materials and Pavement Design*, **Vol. 12**, No. 3, pp. 493-524.
71. Mogawer, W. S., Austerman, A. J., Kassem, E., and Masad, E., (2011). "Moisture Damage Characteristics of Warm Mix Asphalt Mixtures." *Journal of the Association of Asphalt Paving Technologists*, **Vol. 80**, pp. 491-520
72. Masad, E., Kassem, E., and Little, D. (2011). "Characterization of Asphalt Pavement Materials in the State of Qatar: A Case Study," *International Journal of Road Materials and Pavement Design*, **Vol. 12**, No. 4.

73. Caro, S., Masad, E., Sanchez-Silva, M. and Little, D., (2011). "Stochastic Micromechanical Modeling of Asphalt Mixtures Subjected to Moisture Diffusion Processes," *International Journal for Numerical and Analytical Methods in Geomechanics*, **Vol. 35, No. 10**, pp. 1079-1097.
74. Abu Al-Rub, R.K., You, T., Masad, E.A, Little, D., (2011). "Mesomechanical modeling of the thermo-viscoelastic, thermo-viscoplastic, and thermo-viscodamage response of asphalt concrete," *International Journal of Advances in Engineering Sciences and Applied Mathematics*, **Vol. 3, No. 1-4**, pp. 14-33.
75. Huang, C. W, Abu Al-Rub, R., Masad, E., and Little, D. (2011). "Three-Dimensional Simulations of Asphalt Pavement Deformation Using a Nonlinear Viscoelastic and Viscoplastic Model," *Journal of Materials in Civil Engineering*, ASCE, **Vol. 23, No. 1**, pp. 56-68
76. Huang, C.W., Abu Al-Rub, R.K., Masad, E.A, Little, D., Airey, G., (2011). "Numerical implementation and validation of a nonlinear-viscoelastic and viscoplastic model for asphalt concrete mixes," *International Journal of Pavement Engineering*, **Vol. 12, No. 4**, pp. 433-447, 2011.
77. Howson, J., Masad, E., Bhasin, A., Little, D., and Lytton, R. (2011). "Comprehensive Analysis of Surface Free Energy of Asphalts and Aggregates and the Effects of Changes in pH," *Construction and Building Materials*, **Vol. 25, No. 5**, pp. 2554-2564.
78. Darabi, M., Abu Al-Rub, R., Masad, E., Huang, C.W., Little, D. (2011). "A Thermo-Viscoelastic-Viscoplastic-Viscodamage Constitutive Model for Asphaltic Materials," *International Journal of Solids and Structures*, **Vol. 48**, pp. 191-207.
79. Abu Al-Rub, R.K., Darabi, M.K., You, T., Masad, E.A, Little, D.N., (2011). "A unified continuum damage mechanics model for predicting the mechanical response of asphalt mixtures and pavements," *International Journal of Roads and Airports*, **Vol. 1, No. 1**, pp. 68-84.
80. Abu Al-Rub, R. Darabi, M., Little, D., and Masad, E. (2010). "A micro-damage healing model that improves prediction of fatigue life in asphalt mixes," *International Journal of Engineering Science*, **Vol. 48, No. 11**, pp. 966-990.
81. Abu Al-Rub, R., Darabi, M., Masad, E., (2010). "A straightforward numerical technique for finite element implementation of nonlocal gradient-dependent continuum damage mechanics theories," *International Journal of Theoretical and Applied Multiscale Mechanics*, **Vol. 1, No. 4**, pp. 352-385.
82. Mahmoud, E., Gates, L., Masad, E., Erdogafan, S., and Garboczi, E. (2010). "Comprehensive Evaluation of AIMS Texture, Angularity, and Dimension Measurements," *Journal of Materials in Civil Engineering*, ASCE, **Vol. 22, No. 4**, pp. 369-379.
83. Caro, S., Masad, E., Bhasin, A., and Little, D. (2010). "Micromechanical Modeling of the Influence of Material Properties on Moisture-Induced Damage in Asphalt Mixtures," *Construction and Building Materials*, **Vol. 24, No. 7**, pp. 1184-1192.
84. Masad, L., Masad, E., Blank, L., and Enjeti, P. (2010). "Technology-Based Support for Quality Teaching and Learning at TAMUQ," *International Journal of Emerging Technologies in Learning*, **Vol. 5, No. 1**, 51-57.
85. Arambula, E., Garboczi, E., Masad, E., and Kassem, E. (2010). "Numerical Analysis of Moisture Vapor in Asphalt Mixtures Using Digital Images," *Materials and Structures*, **Vol. 43, No. 7**, pp. 897-911.

86. Arambula, E., Caro, S., and Masad, E. (2010). "Experimental Measurement and Numerical Simulation of Water Vapor Diffusion through Asphalt Pavement Materials," *Journal of Materials in Civil Engineering*, ASCE, **Vol. 22, No. 6, pp. 588-598.**
87. Mahmoud, E., and Masad, E. (2010). "A Probabilistic Model for Predicting Resistance of Aggregates in Asphalt Mixes to Fracture," *International Journal of Road Materials and Pavement Design*, **Vol. 11, No. 2, pp. 335-360.**
88. Mahmoud, E., Masad, E., Nazarian, S., and Abdalla, I. (2010). "Modeling and Experimental Evaluation of the Influence of Aggregate Blending on Asphalt Mixture Strength," *In Transportation Research Record 2180, Journal of the Transportation Research Board*, **pp. 48-57.**
89. Mahmoud, E., Masad, E., Nazarian, S. (2010). "Discrete Element Analysis of the Influence of Aggregate properties and Internal Structure on Fracture in Asphalt Mixtures," *Journal of Materials in Civil Engineering*, ASCE, **Vol. 22, No. 1, pp. 10-20.**
90. Masad, E., Howson, J., Bhasin, A., Caro, S., and Little, D. (2010). "Relationship between Ideal and Practical Work of Fracture: Background and Experimental Results," *Journal of the Association of Asphalt Paving Technologists*, **Vol. 79.**
91. Caro, S., Masad, E., Bhasin, A., Little, D., Sanchez-Silva, M. (2010). "Probabilistic Modeling of the Effect of Air Voids on the Mechanical Performance of Asphalt Mixtures Subjected to Moisture Diffusion," *Journal of the Association of Asphalt Paving Technologists*, **Vol. 79.**
92. Caro, S., Masad, E., Bhasin, A., Little, D. (2010). "Coupled Micromechanical Model of Moisture-Induced Damage in Asphalt Mixtures", *Journal of Materials in Civil Engineering*, ASCE, **Vol. 22, No. 4, pp. 380-388.**
93. Saadeh, S. and Masad, E. (2010). "On the Relationship of Microstructure Properties of Asphalt Mixtures to their Constitutive Behavior," *International Journal of Materials and Structural Integrity*, **Vol. 4, No. 2, pp. 186-214.**
94. Bhasin, A., Castelo Branco, V., Masad, E., and Little, D. (2009). "Quantitative Comparison of Energy Methods to Characterize fatigue in Asphalt Materials," *Journal of Materials in Civil Engineering*, ASCE, **Vol. 21, No. 2, pp. 83-92.**
95. Rezaie, A., Masad, E., Chowdhury, A., Harris, P. (2009). "Predicting Asphalt Mixture Skid Resistance by Aggregate Characteristics and Gradation," *In Transportation Research Record 2104, Journal of the Transportation Research Board*, **pp. 24-33.**
96. Masad, E., Koneru, S., Rajagopal, K., Scarpas, T., and Kasbergen, C. (2009). "Modeling of Asphalt Mixture Laboratory and Field Compaction Using a Thermodynamics Framework," *Journal of the Association of Asphalt Paving Technologist*, **Vol. 78, pp. 639-678**
97. Masad, E., Huang, C.W., D'Angelo, J., and Little, D. (2009). "Characterization of Asphalt Binder Resistance to Permanent Deformation Based on Nonlinear Viscoelastic Analysis of Multiple Stress Creep Recovery (MSCR) Test," *Journal of the Association of Asphalt Paving Technologists*, **Vol. 78, pp. 535-566**

98. Huang, B., Chen, X., Shu, X., Masad, E., and Mahmoud, E. (2009). "Effects of Coarse Aggregate Angularity and Asphalt Binder on Laboratory-Measured Permanent Deformation Properties of HMA," *International Journal of Pavement Engineering*, **Vol. 10, No. 1, pp. 19-28.**
99. Kassem, E., Masad, E., Bulut, R., Lytton, R. (2009). "Measurements of the Moisture Diffusion Coefficient of Asphalt Mixtures and its Relationship to Mixture Composition," *International Journal of Pavement Engineering*, **Vol. 10, No. 6, pp. 389-399.**
100. Ravindran, P., Krishnan, J.M., Masad, E., and Rajagopal, K. (2009). "Modeling Sand-Asphalt Mixtures within a Thermodynamic Framework: Theory and Application to Torsion Experiments," *International Journal of Pavement Engineering*, **Vol. 10, No. 2, pp. 115-131.**
101. Koneru, S., Masad, E., and Rajagopal, K. (2008). "Modeling of Asphalt Mix Compaction Using a Thermomechanical Material Model," *Mechanics of Materials*, **Vol. 40, No. 10, pp. 846-864.**
102. Castelo Branco, V., Masad, E., Bhasin, A., and Little, D. (2008). "Fatigue Analysis of Asphalt Mixtures Independent of Mode of Loading," *In Transportation Research Record 2057, Journal of the Transportation Research Board*, **pp. 149-156.**
103. Caro, S., Masad, E., Airey, G., Bhasin, A., and Little, D. (2008). "Probabilistic Analysis of Fracture in Asphalt Mixtures Caused by Moisture Damage," *In Transportation Research Record 2057, Journal of the Transportation Research Board*, **pp. 28-36.**
104. Ashtiani, R., Little, D., and Masad, E. (2008). "Material Factors that Influence Anisotropic Behavior of Aggregate Bases," *In Transportation Research Record 2059, Journal of the Transportation Research Board*, **pp. 20-30.**
105. Kassem, E., Masad, E., and Chowdhury, A., Claros, G. (2008). "Influence of Field Compaction Pattern on Pavement Uniformity," *Journal of the Association of Asphalt Paving Technologists*, **Vol. 77, pp. 257-298**
106. Arambula, E., Masad, E., Epps Martin, A., and Lytton, R. (2008). "Suitability of Dynamic and Relaxation Tests for the Evaluation of Moisture Susceptibility of Asphalt Mixtures," *Journal of Testing and Evaluation*, **Vol. 36, No. 2, pp. 150-164**
107. Kassem, E., Walubita, L., Scullion, T., Masad, E., and Wimsatt, A. (2008). "Evaluation of Full Depth Asphalt Pavement Construction Using X-Ray Computed Tomography and Ground Penetrating Radar," *Journal of Performance of Constructed Facilities*, ASCE, **Vol. 22, No. 6, pp. 408-416.**
108. Masad, E., Huang, C. W., Airey, G., and Muliana, A. (2008). "Nonlinear Viscoelastic Analysis of Unaged and Aged Asphalt Binders," *Construction and Building Materials*, **Vol. 22, No. 11, pp. 2170-2179.**
109. Caro, S., Masad, E., Bhasin, A., and Little, D. (2008). "Moisture Susceptibility of Asphalt Mixtures, Part 1: Mechanisms," *International Journal of Pavement Engineering*, **Vol. 9, No. 2, pp. 81-98.**
110. Caro, S., Masad, E., Bhasin, A., and Little, D. (2008). "Moisture Susceptibility of Asphalt Mixtures, Part 2: Characterization and Modeling," *International Journal of Pavement Engineering*, **Vol. 9, No. 2, pp. 99-114.**

111. Huang, C. W., Masad, E., Muliana, A., and Bahia, H. (2007). "Nonlinearly Viscoelastic Analysis of Asphalt Mixes Subjected to Shear Loading," *Mechanics of Time Dependent Materials*, **Vol. 11, No. 2, pp. 91-110.**
112. Luce, A., Mahmoud, E., Masad, E., and Chowdhury, A. (2007). "Relationship of Aggregate Texture to Asphalt Pavement Skid Resistance," *Journal of Testing and Evaluation*, American Society of Testing and Materials (ASTM), **Vol. 35, No. 6, pp. 578-588.**
113. Masad, E., Castelo Branco, V., Little, D., and Lytton, R. (2008). "A Unified Method for the Analysis of Controlled-Strain and Controlled-Stress Fatigue Testing," *International Journal of Pavement Engineering*, **Vol. 9, No. 4, pp. 233-246.**
114. Masad, E., Al-Omari, A., and Chen, H. C. (2007). "Computations of Permeability Tensor Coefficients and Anisotropy of Hot Mix Asphalt Based on Microstructure Simulation of Fluid Flow," *Computational Materials Science*, **Vol. 40, No. 4, pp. 449 – 459.**
115. Masad, E., and Scarpas, T. (2007). "Toward a Mechanistic Approach for Analysis and Design of Asphalt Pavements," *International Journal of Geomechanics*, ASCE, **Vol. 7, No. 2, pp. 81-82.**
116. Mahmoud, E., and Masad, E. (2007). "Experimental Methods for the Evaluation of Aggregate Resistance to Polishing, Abrasion and Breakage," *Journal of Materials in Civil Engineering*, ASCE, **Vol. 19, No. 11, pp. 977-985.**
117. Saadeh, S., Masad, E., Little, D. (2007). "Characterization of Hot Mix Asphalt Using Anisotropic Damage Viscoelastic-Viscoplastic Model and Repeated Loading," *Journal of Materials in Civil Engineering*, ASCE, **Vol. 19, No. 10, pp. 912-924.**
118. Masad, E., Arambula, E., Ketchem, R., Abbas, A., and Epps Martin, A. (2007). "Nondestructive Measurements of Moisture Transport in Asphalt Mixtures," *Journal of the Association of Asphalt Paving Technologists*, **Vol. 76, pp. 919–952**
119. Arambula, E., Masad, E., and Epps Martin, A. (2007). "The Influence of Air Void Distribution on the Moisture Susceptibility of Asphalt Mixes," *Journal of Materials in Civil Engineering*, ASCE, **Vol. 19, No. 8, pp. 655-664.**
120. Arambula, E., Masad, E., and Epps Martin, A. (2007). "Moisture Susceptibility of Asphalt Mixtures with Known Field Performance Using Dynamic Analysis and Crack Growth Model," *In Transportation Research Record 2001, Journal of the Transportation Research Board*, **pp. 20-28.**
121. Kutay, E. M., Aydilek, M., Masad, E. (2007). "Estimation of Directional Permeability of HMA Based on Numerical Simulation of Micro-scale Water Flow," *In Transportation Research Record 2001, Journal of the Transportation Research Board*, **pp. 29-36.**
122. Ashtiani, R., Little, D., and Masad, E. (2007). "Evaluation of the Impact of Fines on the Performance of Lightly Cement Stabilized Aggregate Systems," *In Transportation Research Record 2026, Journal of the Transportation Research Board*, **pp. 81-88.**
123. Bhasin, A., Howson, J., Masad, E., Little, D., and Lytton, R. (2007). "Effect of Modification Processes on Bond Energy of Asphalt Binders," *In Transportation Research Record 2001, Journal of the Transportation Research Board*, **pp 29-37.**

124. Bhasin, A., Little, D., Vasconcelos, K., Masad, E. (2007). "Use of Surface Free Energy to Identify Moisture Sensitivity of Materials for Asphalt Mixes," *In Transportation Research Record 2001, Journal of the Transportation Research Board*, pp 37-45.
125. Birgisson, B. and Masad, E. (2007). "Advances in Asphalt Pavements," *International Journal of Road Materials and Pavement Design*, Vol. 8, No. 2, pp. 137-138.
126. Masad, E., Al-Rousan, T., Bathina, M., McGahan, J., and Spiegelman, C. (2007). "Analysis of Aggregate Shape Characteristics and its Relationship to Hot Mix Asphalt Performance," *International Journal of Road Materials and Pavement Design*, Vol. 8, No. 2, pp. 317-350.
127. Masad, E., Dessouky, S., and Little, D. (2007). "Development of an Elasto-Visco-Plastic Microstructural-Based Continuum Model to Predict Permanent Deformation in Hot Mix Asphalt," *International Journal of Geomechanics, ASCE*, Vol. 7, No. 2, pp. 119-130.
128. Abbas, A., Masad, E., Papagiannakis, T., and Harman, T. (2007). "Micromechanical Modeling of the Viscoelastic Behavior of Asphalt Mixtures Using the Discrete Element Method," *International Journal of Geomechanics, ASCE*, Vol. 7, No. 2, pp. 131-139.
129. Kutay, E. M., Aydilek, M., Masad, E., and Harman, T. (2007). "Evaluation of Hydraulic Conductivity Anisotropy in Asphalt Specimens," *International Journal of Pavement Engineering*, Vol. 8, No. 1, pp. 29-43.
130. Al-Rousan, T., Masad, E., Tutumluer, E., and Pan, T. (2007). "Evaluation of Image Analysis Techniques for Quantifying Aggregate Shape Characteristics," *Journal of Construction and Building Materials*, Vol. 21, No. 5, pp. 978-990.
131. Kutay, E. M., Aydilek, M., Masad, E. (2006). "Boundary Conditions and Laboratory Validation of Lattice Boltzmann Method for Modeling Pore-Scale Flow in Granular Materials," *Computers and Geotechnics*, Vol. 33, pp. 381-395.
132. Masad, E., Al-Omari, A., and Lytton, R. (2006). "Simple Method for Predicting Laboratory and Field Permeability of Hot Mix Asphalt," *In Transportation Research Record 1970, Journal of the Transportation Research Board*, pp. 55-63.
133. Kassem, E., Masad, E., Bulut, R., and Lytton, R. (2006). "Measurements of Moisture Suction and Diffusion Coefficient in Hot Mix Asphalt and their Relationships to Moisture Damage," *In Transportation Research Record 1970, Journal of the Transportation Research Board*, pp. 45-54.
134. Masad, E., Zollinger, C., Bulut, R., Little, D., and Lytton, R. (2006). "Characterization of HMA Moisture Damage Using Surface Energy and Fracture Properties," *Journal of the Association of Asphalt Paving Technologists*, Vol. 75, pp. 713-748.
135. Dessouky, S., Masad, E., and Little, D. (2006). "Mechanistic Modeling of Permanent Deformation in Asphalt Mixes with the Effect of Aggregate Characteristics," *Journal of the Association of Asphalt Paving Technologists*, Vol. 75, pp. 535-571.
136. Gatchalian, D., Masad, E., Chowdhury, A., and Little, D. (2006). "Characterization of Aggregate Resistance to Degradation in Stone Matrix Asphalt Mixtures," *In Transportation Research Record 1962, Journal of the Transportation Research Board*, pp. 55-63.

137. Bhasin, A., Masad, E., Little, D., and Lytton, R. (2006). "Limits on Adhesive Bond Energy for Improved Resistance of Hot Mix Asphalt to Moisture Damage," *In Transportation Research Record 1970, Journal of the Transportation Research Board*, **pp. 3-13**.
138. Bhasin, A., Button, J., Chowdhury, A., and Masad, E. (2006). "Selection of Optimum Gravel Aggregate Size to Resist Permanent Deformation in Hot Mix Asphalt," *In Transportation Research Record 1952, Journal of the Transportation Research Board*, **pp. 39-47**.
139. Dessouky, S., Masad, E., Little, D., and Zbib, H. (2006). "Finite Element Analysis of Hot Mix Asphalt Microstructure Using Effective Local Material Properties and Strain Gradient Elasticity," *Journal of Engineering Mechanics*, American Society of Civil Engineers, **Vol. 132, No. 2, pp. 158-171**.
140. Masad, S., Little, D., and Masad, E. (2006). "Analysis of Flexible Pavement Response and Performance Using Isotropic and Anisotropic Material Properties," *Journal of Transportation Engineering*, American Society of Civil Engineers, **Vol. 132, No. 4, pp. 342-349**.
141. Masad, E., Castelblanco, A., and Birgisson, B. (2006). "HMA Moisture Damage as a Function of Air Void Size Distribution, Pore Pressure and Bond Energy," *Journal of Testing and Evaluation*, American Society for Testing and Materials, **Vol. 34, No. 1, pp. 15-23**.
142. Pradeep, H., Krishnan, M., Rajagopal, K., Little, D., and Masad, E. (2005). "Modeling Constant Displacement Rate Experiments of Asphalt Concrete Using a Thermodynamic Framework," *International Journal of Pavement Engineering*, **Vol. 6, No. 4, pp. 241-256**.
143. Kim, S. H., Little, D., Masad, E., and Lytton, R. (2005). "Estimation of Level of Anisotropy in Unbound Granular Layers Considering Aggregate Physical Properties," *International Journal of Pavement Engineering*, **Vol. 6, No. 4, pp. 217-227**.
144. Masad, E., Tashman, L., Little, D., and Zbib, H. (2005). "Viscoplastic Modeling of Asphalt Mixes with the Effects of Anisotropy, Damage and Aggregate Characteristics," *Journal of Mechanics of Materials*, **Vol. 37, pp. 1242-1256**.
145. Abbas, A., Masad, E., Papagiannakis, T., and Shenoy, A. (2005). "Modeling of Asphalt Mastic Stiffness Using Discrete Elements and Micromechanics Analysis," *International Journal of Pavement Engineering*, **Vol. 6, No. 2, pp. 137-146**.
146. Al-Rousan, T., Masad, E., Myers, L., and Spiegelman, C. (2005). "A New Methodology for Shape Classification of Aggregates," *In Transportation Research Record 1913, Journal of the Transportation Research Board*, **pp. 11-23**.
147. Masad, E., Saadeh, S., Al-Rousan, T., Garboczi, E., Little, D. (2005). "Computations Of Particle Surface Characteristics Using Optical and X-Ray CT Images," *Journal of Computational Materials Science*, **Vol. 34, No. 4, pp. 406-424**.
148. Krishnan, M., Rajagopal, K., Masad, E., and Little, D. (2005). "A Thermomechanical Framework for the Constitutive Modeling of Asphalt Concrete," *International Journal of Geomechanics*, American Society of Civil Engineers, **Vol. 6, No. 1, pp. 36-45**.
149. Park, D. W., Epps Martin, A., Masad, E. (2005). "Effects of Nonuniform Tire Contact Stresses on Pavement Response," *Journal of Transportation in Civil Engineering*, American Society of Civil Engineers, **Vol. 131, No. 11, pp. 873 – 879**.

150. Song, I., Little, D., and Masad, E., and Lytton, R. (2005). "Comprehensive Evaluation of Damage in Asphalt Mastics Using X-ray CT, Continuum Mechanics, and Micromechanics," *Journal of the Association of Asphalt Paving Technologists*, **Vol. 74**, pp. 885-920.
151. Kim, S. H., Little, D., Masad, E. (2005). "Simple Methods to Estimate Inherent and Stress-Induced Anisotropic Level of Aggregate Base," *In Transportation Research Record 1913, Journal of the Transportation Research Board*, pp. 24 – 31.
152. Tashman, L., Masad, E., Zbib, H., Little, D., Kaloush, K. (2005). "Microstructural Viscoplastic Continuum Model for Asphalt Concrete," *Journal of Engineering Mechanics*, American Society of Civil Engineers, **Vol. 131**, No. 1, pp. 48 – 57.
153. Tashman, L., Masad, E., Little, D., Zbib, H. (2005). "A Microstructure-Based Viscoplastic Model for Asphalt Concrete," *International Journal of Plasticity*, **Vol. 21**, No. 9, pp. 1659-1685.
154. Masad, E., and Mahmoud, L. (2004). "Advances in Microstructure Characterization, Micromechanics, and Constitutive Modeling of Hot Mix Asphalt," *Journal of Materials in Civil Engineering*, ASCE, **Vol. 16**, No. 2, pp. 99.
155. Masad, E., and Sivakumar, K. (2004). "Advances in the Characterization and Modeling of Civil Engineering Materials Using Imaging Techniques," *Journal of Computing in Civil Engineering*, ASCE, **Vol. 18**, No. 1, pp. 1.
156. Masad, E. (2004). "X-ray Computed Tomography of Aggregates and Asphalt Mixes," *Materials Evaluation Journal, American Society for Nondestructive Testing*. **Vol. 62**, No. 7, pp. 775 – 783.
157. Al-Omari, A., Masad, E. (2004). "Three Dimensional Simulation of Fluid Flow in X-ray CT Images of Porous Media," *International Journal for Numerical and Analytical Methods in Geomechanics*, **Vol. 28**, pp. 1327 – 1360.
158. Masad, E., Little, D., and Sukhwani, R. (2004). "Sensitivity of HMA Performance to Aggregate Shape Measured Using Conventional and Image Analysis Methods," *International Journal of Road Materials and Pavement Design*. **Vol. 5**, No. 4, pp. 477 – 498.
159. Masad, E., Little, D., and Lytton, R. (2004). "Modeling Nonlinear Anisotropic Elastic Properties of Unbound Granular Bases Using Microstructure Distribution Tensors," *International Journal of Geomechanics*, American Society of Civil Engineers. **Vol. 4**, No. 4, pp. 254 – 263.
160. Assaad, A., and Masad, E. (2004). "Analysis of Factors Influencing the Shear Deformation of Granular Materials," *Geotechnical Testing Journal, American Society of Testing and Materials (ASTM)*. **Vol. 27**, No. 5, pp. 1- 7.
161. Abbas, A., Papagiannakis, T., and Masad, E. (2004). "Linear and Non-Linear Viscoelastic Analysis of the Microstructure of Asphalt Concretes," *Journal of Materials in Civil Engineering*, ASCE, **Vol. 16**, No. 2, pp. 133 – 139.
162. Chandan, C., Sivakumar, K., Masad, E., and Fletcher, T. (2004). "Geometry Analysis of Aggregate Particles Using Imaging Techniques," *Journal of Computing in Civil Engineering*, ASCE, **Vol. 18**, No. 1, pp. 75 – 82.

163. Peterson, B., Mahboub, K., Anderson, M., Masad, E., and Tashman, L. (2004). "Comparing Superpave Gyratory Compactor Data to Field Cores," *Journal of Materials in Civil Engineering, ASCE*, **Vol. 16, No. 1**, pp. 78-83.
164. Masad, E., Birgisson, B., Al-Omari, A., and Cooley, A. (2004). "Analytical Derivation and Numerical Simulation of Permeability and Fluid Flow Patterns in Hot Mix Asphalt," *Journal of Materials in Civil Engineering, ASCE*, **Vol. 16, No. 4**, pp. 487 - 496.
165. Watson, D., Masad, E., Moore, K. A., Williams, K., and Cooley L. A. (2004). "Verification of VCA Testing to Determine Stone-On-Stone Contact of HMA Mixtures," *In Transportation Research Record 1891, Journal of the Transportation Research Board*, pp. 182 - 190.
166. Masad, E., and Button, J. (2004). "Experimental Measurements and Analysis of the Internal Structure Distribution in HMA," *In Transportation Research Record 1891, Journal of the Transportation Research Board*, pp. 212 – 220.
167. Tashman, L., Masad, E., Little, D., Lytton, R. (2004). "Damage Evolution in Triaxial Compression Tests of HMA at High Temperatures," *Journal of the Association of Asphalt Paving Technologists*, **Vol. 73**, pp. 53 - 81.
168. Dessouky, S., Masad, E., and Bayomy, F. (2004). "Prediction of Hot Mix Asphalt Stability Using The Superpave Gyratory Compactor," *Journal of Materials in Civil Engineering, ASCE*, **Vol. 16, No. 6**, pp. 578 – 587.
169. Peterson, B., Mahboub, K., Anderson, M., Masad, E., and Tashman, L. (2003). "Superpave Laboratory Compaction versus Field Compaction," *Transportation Research Record 1832, Journal of the Transportation Research Board*, pp. 201-208.
170. Bahia, H., Masad, E., Stakton, A., Dessouky, S., and Bayomy, F. (2003). "Simplistic Mixture Design Using the SGC and the DSR," *Journal of the Association of Asphalt Paving Technologists*, **Vol. 72**, pp. 196-225.
171. Saadeh, S., Masad, E., Stuart, K., Abbas, A., Papagainnakis, T., Al-Khateeb, G. (2003). "Comparative Analysis of Axial and Shear Viscoelastic Properties of Asphalt Mixes," *Journal of the Association of Asphalt Paving Technologists*, **Vol. 72**, pp. 122-153.
172. Fletcher, T., Chandan, C., Masad, E., and Sivakumar, K. (2003). "Aggregate Imaging System (AIMS) for Characterizing the Shape of Fine and Coarse Aggregates," *Transportation Research Record 1832, Journal of the Transportation Research Board*, pp. 67 – 77.
173. Tashman, L., Masad, E., Crowe, C., Muhunthan, B. (2003). "Simulation of Fluid Flow in Granular Microstructure Using a Non-Staggered Grid Scheme," *International Journal of Computers and Fluids*, **Vol. 123**, pp. 1299-1323.
174. Dessouky, S., Masad, E., Bayomy, F. (2003). "Evaluation Of Asphalt Mix Stability Using Compaction Properties and Aggregate Structure Analysis," *International Journal of Pavement Engineering*, **Vol. 4, No. 2**, pp. 87 – 103.
175. Masad, E., Papagiannakis, T., Kherghehoush, R., Ali, N. (2002). "Rheological and Nuclear Magnetic Resonance Testing of Furfural-Modified Asphalt," *Journal of Applied Asphalt Binder Technology*, **Vol. 2, No. 1**, pp. 4-20.

176. Papagiannakis, T, Abbas, A., and Masad, E. (2002). "Micromechanical Analysis of the Viscoelastic Properties of Asphalt Concretes," *In Transportation Research Record, Journal of the Transportation Research Board 1789*, pp. **113-120**.
177. Saadeh, S., Tashman, L., Masad, E., and Mogawer, W. (2002). "Spatial and Directional Distributions of Aggregates in Asphalt Mixes," *Journal of Testing and Evaluation, American Society for Testing and Materials, ASTM*, Vol. **30**, No. **6**, pp. **483-491**.
178. Fletcher, T., Chandan, C., Masad, E., Sivakumar, K. (2002). "Measurement of Aggregate Texture and Its Influence on HMA Permanent Deformation," *Journal of Testing and Evaluation, American Society for Testing and Materials, ASTM*, Vol. **30**, No. **6**, pp. **524-531**.
179. Masad, E. Muhunthan, B., and Crowe, C. (2002). "Numerical Modeling of Fluid Flow in Microscopic Images of Granular Materials," *International Journal for Numerical and Analytical Methods in Geomechanics*, Vol. **26**, No. **1**, pp. **53-74**.
180. Masad, E., Jandhyala, V. K., Dasgupta, J., Somadevan, N., Shashidhar, N. (2002). "Characterization of Air Void Distribution in Asphalt Mixes using X-Ray CT," *Journal of Materials in Civil Engineering, ASCE*, Vol. **14**, No. **2**, pp. **122-129**.
181. Al-Omari, A., Tashman, L., Masad, E., Cooley, A., and Harman, T. (2002). "Proposed Methodology for Predicting HMA Permeability," *Journal of the Association of Asphalt Paving Technologists*, Vol. **71**, pp. **30 – 58**.
182. Masad, E., and Bahia, H. (2002). "Effects of Loading Configuration and Material Properties on Non-Linear Response of Asphalt Mixtures," *Journal of the Association of Asphalt Paving Technologists*, Vol. **71**, pp. **535-558**.
183. Abbas, A., Choi, B. C., Masad, E., and Papagiannakis, T. (2002). "The Influence of Laboratory Aging Method on the Rheological Properties of Asphalt Binders," *Journal of Testing and Evaluation, American Society for Testing and Materials, ASTM*, Vol. **30**, No. **2**, pp. **171-176**.
184. Masad, E. and Niranjana, S. (2002). "Microstructural Finite Element Analysis of the Influence of Localized Strain Distribution on Asphalt Mix Properties," *Journal of Engineering Mechanics, ASCE*, Vol. **129**, No. **10**, pp. **1105-1114**.
185. Tashman, L., Masad, E., D'Angelo, J., Bukowski, J., and Harman, T. (2002). "X-ray Tomography to Characterize Air Void Distribution in Superpave Gyrotory Compacted Specimens," *International Journal of Pavement Engineering*, Vol. **3**, No. **1**, pp. **19 – 28**.
186. Masad, E., Tashman, L., Niranjana, S., and Little, D. (2002). "Micromechanics-Based Analysis of Stiffness Anisotropy in Asphalt Mixtures," *Journal of Materials in Civil Engineering, ASCE*, Vol. **14**, No. **5**, pp. **374 - 383**.
187. Romero, P. and Masad, E. (2001). "Relationship between the Representative Volume Element and Mechanical Properties of Asphalt Concrete," *Journal of Materials in Civil Engineering, ASCE*, Vol. **13**, No. **1**, pp. **77 – 84**.

188. Tashman, L., Masad, E., Peterson, B., and Saleh, H. (2001). "Internal Structure Analysis of Asphalt Mixes to Improve the Simulation of Superpave Gyrotory Compaction to Field Conditions," *Journal of the Association of Asphalt Paving Technologists*, **Vol. 70**, pp. 605-645.
189. Masad, E., Olcott, D., White, T., and Tashman, L. (2001). "Correlation of Imaging Shape Indices of Fine Aggregate with Asphalt Mixture Performance," *In Transportation Research Record, Journal of the Transportation Research Board* **1757**, pp. 148 – 156.
190. Masad, E., Niranjana, S., Bahia, H., and Kose, S. (2001). "Modeling and Experimental Measurements of Localized Strain Distribution in Asphalt Mixes," *Journal of Transportation Engineering*, ASCE, **Vol. 127, No. 6**, pp. 477 – 485.
191. Masad, E., Button, J. and Papagiannakis, T. (2000). "Fine Aggregate Angularity: Automated Image Analysis Approach," *In Transportation Research Record, Journal of the Transportation Research Board* **1721**, pp. 66 – 72.
192. Masad, E., and Button, J. (2000). "Unified Imaging Approach for Measuring Aggregate Angularity and Texture," *Computer-Aided Civil and Infrastructure Engineering*, **Vol. 15, No. 4**, pp. 273 - 280.
193. Kose, S., Guler, M., Bahia, H., and Masad, E. (2000). "Distribution of Strains within Hot-Mix Asphalt Binders," *In Transportation Research Record, Journal of the Transportation Research Board* **1728**, pp. 21-27.
194. Masad, E. and Muhunthan, B. (2000). "Three-Dimensional Characterization and Simulation of Anisotropic Soil Fabric," *Journal of Geotechnical and Geoenvironmental Engineering*, ASCE, **Vol. 126, No. 3**, pp. 199 - 207.
195. Muhunthan, B., Masad, E., and Assaad, A. (2000). "Measurement of Uniformity and Anisotropy in Granular Materials," *Geotechnical Testing Journal, ASTM*, **Vol. 23, No. 4**, pp. 423 – 431.
196. Masad, E., Muhunthan, B., and Martys, N. (2000). "Simulation of Fluid Flow and Permeability in Cohesionless Soils," *Water Resources Research*, **Vol. 36, No. 4**, pp. 851 - 864.
197. Masad, E., Muhunthan, B., Shashidhar, N., and Harman T. (1999). "Internal Structure Characterization of Asphalt Concrete Using Image Analysis," *Journal of Computing in Civil Engineering (Special Issue on Image Processing)*, ASCE, **Vol. 13, No. 2**, pp. 88 - 95.
198. Masad, E., Muhunthan, B., Shashidhar, N., and Harman, T. (1999). "Quantifying Laboratory Compaction Effects on the Internal Structure of Asphalt Concrete," *In Transportation Research Record, Journal of the Transportation Research Board* **1681**, pp. 179 - 184.
199. Masad, E., Muhunthan, B. and Chameau, J. L. (1998). "Stress- Strain Model for Clays with Anisotropic Void Ratio Distribution," *International Journal for Numerical and Analytical Methods in Geomechanics*, **Vol. 22**, pp. 393 - 416.
200. Adamcewicz, A. S., Muhunthan, B. and Masad, E. (1997). "Soil Fabric Changes During Consolidation," *Geotechnical Testing Journal, ASTM*, **Vol. 20, No. 3**, pp. 347 – 356.

201. Masad, E., Taha, R., and Muhunthan, B. (1996). "Finite-Element Analysis of Temperature Effects on Plain-Jointed Concrete Pavements," *Journal of Transportation Engineering*, ASCE, **Vol. 122, No. 5**, pp. 388-398.
202. Masad, E., Taha, R., Ho, C. and Papagiannakis, T. (1996). "Engineering Properties of Tire/Soil Mixtures as a Lightweight Fill Material," *Geotechnical Testing Journal*, ASTM, **Vol. 19, No. 3**, pp. 297 -304.
203. Muhunthan, B., Chameau, J. L. and Masad, E. (1996). "Fabric Effects on the Yield Behavior of Soils," *Soils and Foundations*, **Vol. 36, No. 3**, pp. 85 - 97.

Conference Refereed Papers

1. Roja, L., Yiming, W., and Masad, E. (2019). "Mechanical and Microstructural Properties of Asphalt Binders Containing Various Proportions of Reclaimed Asphalt Pavement (RAP)," *Airfield and Highway Pavements Conference*, pp. 295-301, American Society of Civil Engineers, Chicago, IL.
2. Kogbara, R., Iyengar, S., Masad, E., Rahman, S., Grasley, Z., Zollinger, D. (2019). "Pore Structure and Thermal Conductivity of Cryogenic Concrete," *International Journal of Structural and Civil Engineering Research*, **Vol. 8, No. 1**, pp. 10-15.
3. Kogbara, R. Iyengar, S., Grasley, Z., Zollinger, D., and Masad. (2018). "Use of Non-Destructive Tests to Explain Manifested Pore Structure Changes in Cryogenic Concrete," *IOP Conf. Ser.: Materials Science and Engineering*, 431, 122003.
4. Menapace, I., and Masad, E. (2018). "Investigation of Moisture Damage Coupled with Aging of Asphalt Binder," *Proceedings of the Advances in Materials and Pavement Performance Prediction Conference*, April 2018, Doha-Qatar, CRC Press, ISBN 9781138313095.
5. Sadeq, M., Masad, E., Al-Khalid, H., and Sirin, O. (2018). "Characterization of Air Voids in W-FAM Samples using X-Ray CT Imaging," *Proceedings of the Advances in Materials and Pavement Performance Prediction Conference*, April 2018, Doha-Qatar, CRC Press, ISBN 9781138313095.
6. Menapace, I., Nogueira d'Eurydice, M., Petrik Galvosas, Hunter, M. W., Sirin, O., Masad, E. (2017). "Study on the Use of Low Field Nuclear Magnetic Resonance for Detecting Asphalt Aging," *Tenth International Conference on the Bearing Capacity of Roads, Railways and Airfields (BCRRA 2017)*, 28-30 June 2017, Athens, Greece.
7. Sadeq, M., Masad, E., Al-Khalid, H., Sirin, O., Menapace, I., Nogueira d'Eurydice, M. (2017). "New Protocol Utilizing the Accelerated Weathering Tester to Age Fine Asphalt Mixtures with WMA Additives," *EATA 2017*, 12-14 June 2017, Dübendorf, Switzerland.
8. Menapace, I., Masad, E., Papavassiliou, G., and Kassem, E. (2015). "Evaluation of Aging in Asphalt Cores at Room Temperature Using Low Field Nuclear Magnetic Resonance", *Proceeding of the 6th International Conference Bituminous Mixtures and Pavements*, 10-12 June 2015. Thessaloniki, Greece.
9. Sadek, H., Masad, E., Al-Khalid, H., and Sirin, O., (2015). "Fatigue Characterisation of Full-Scale Pavements Using Viscoelastic Continuum Damage Approach for Qatar". *Proceedings of the 6th*

- International Conference Bituminous Mixtures and Pavements*, 10-12 June 2015. Thessaloniki, Greece.
10. Menapace, I., Masad, E., Papavassiliou, G., Kassem, E. (2015) "Evaluation of Aging in Asphalt Cores at Room Temperature Using Low Field Nuclear Magnetic Resonance", *Proceeding of the 6th International Conference on Bituminous Mixtures and Pavements*, June 10-12, Thessaloniki, Greece
 11. Sadeq, M., Masad, E., Al-Khalid, H., Sirin, O., and Little, D. (2015), "Rheological Evaluation of Short- and Long-Term Performance for Warm Mix Asphalt (WMA) Binders," *Proceeding of the 8th International RILEM SIB Symposium*, October 7-10, Ancona, Italy.
 12. Sadeq, M., Masad, E., Al-Khalid, H., and Sirin, O. (2015), "Assessment of linear and nonlinear viscoelastic responses of warm-mix asphalt binders," *Proceeding of the 6th International Conference Bituminous Mixtures & Pavements*, June 10-12, Thessaloniki, Greece.
 13. Elseifi, M. A., Mohammad, L., N., Kassem, E., Ying, H., and Masad, E. (2014). "Damage in Asphalt Concrete during the Dynamic Complex Modulus and Flow Number Tests," *Asphalt Pavements*, Edited by Kim, R., Taylor & Francis Group, London, ISBN 978-1-138-02693-3, 71-78
 14. Sadek, H., Masad, E., Sirin, O., Al-Khalid, H., and Hassan, K. (2014), "Characterization of Fatigue Resistance of Alternative Pavement Designs for the State of Qatar," *Proceeding of the 3rd International Conference on Transportation Infrastructure*, April 22-25, Pisa, Italy.
 15. Menapace, I., Masad, E., Little, D., Kassem, E. & Bhasin, A. (2014). "Microstructural, Chemical and Thermal Analyses of Warm Mix Asphalt," *Proceeding of the 3rd International Conference on Transportation Infrastructure*, April 22-25, Pisa, Italy.
 16. Khorasani, S., Masad, E., Kassem, E., Abu Al-Rub, R. K. (2013). "Nano-Mechanical Characterization of Asphalt Binder, Aggregate, and Interfacial Zone in Asphalt Composites", The 2nd Middle East Society of Asphalt Technologies Conference, Sharjah, UAE, 5-7 February.
 17. Sadek, H., Masad, E., Sirin, O., Hassan, K., Al-Khalid, H. (2013). "Evaluation of Mechanical Properties of Alternative Pavement Designs for the State of Qatar", *The 2nd Middle East Society of Asphalt Technologies Conference*, Sharjah, UAE, 5-7 February.
 18. Sadek, H., Masad, E., Sirin, O., Al-Khalid, H., Little, D. (2012). "The Implementation of Mechanistic-Empirical Pavement Design Method to Evaluate Asphalt Pavement Design in Qatar", *5th Eurasphalt & Eurobitume Congress*, Istanbul, Turkey, 13-15 June 2012.
 19. Masad, E., and Kutay, E. (2012). "Characterization of the Internal Structure of Asphalt Mixtures," Applications of Advanced Models to Understand Behavior and Performance of Asphalt Mixtures. Transportation Research Circular Number E-C161, Washington DC.
 20. Masad, E. and Kassem*, E. (2008). "Improving the Field Compaction of Asphalt Pavements Using X-ray CT and Imaging Techniques," *Efficient Pavements and Transportation Systems: Characterization, Mechanism, Simulation, and Modeling*, *Proceedings of the fourth International Gulf Conference on Roads*, Editors, I. Al-Qadi, T. Sayed, N. Alnuimi and E. Masad, Taylor and Francis Publishing Company, pp. **611-620**.
 21. Masad, E. and Mahmoud*, E. (2008). "Discrete Element Analysis of Aggregate Resistance to Fracture in Asphalt Mixtures," *Efficient Pavements and Transportation Systems: Characterization*,

- Mechanism, Simulation, and Modeling, Proceedings of the fourth International Gulf Conference on Roads*,, Editors, I. Al-Qadi, T. Sayed, N. Alnuimi and E. Masad, Taylor and Francis Publishing Company, pp. **673-682**.
22. Masad, E. and Rezaie*, A. (2008). "Relationship of Asphalt Pavement Skid Resistance to Aggregate Properties," *Efficient Pavements and Transportation Systems: Characterization, Mechanism, Simulation, and Modeling, Proceedings of the fourth International Gulf Conference on Roads*,, Editors, I. Al-Qadi, T. Sayed, N. Alnuimi and E. Masad, Taylor and Francis Publishing Company, pp. **541-548**.
 23. Little, D., Masad, E., and Ashtiani, R. (2007). "Characterization of Anisotropic Base Materials with High Fines Content," *Proceedings of the International Conference on Advanced Characterization of Pavement and Soil Engineering Materials*, Athens, Greece.
 24. Masad, E., Huang, C., Airey, G., and Muliana, A. (2007). "Nonlinear Viscoelastic Modeling of Asphalt Binders," *Proceedings of the International Conference on Advanced Characterization of Pavement and Soil Engineering Materials*, Athens, Greece.
 25. Howson, J., Bhasin, A., Masad, E., Little, D., Lytton, R., and Claros, G. (2007). "Influence of Material Factors on Surface Free Energy and Performance Related Parameters," *Proceedings of the International Conference on Advanced Characterization of Pavement and Soil Engineering Materials*, Athens, Greece.
 26. Arambula, E., Masad, E., Epps Martin, A., Ketcham, R., and Abbas, A. (2007). "Assessment of Moisture Transport in Hot Mix Asphalt Using X-ray Computed Tomography," *Proceedings of the International Conference on Advanced Characterization of Pavement and Soil Engineering Materials*, Athens, Greece.
 27. Airey, G., Masad, E., Bhasin, A., Caro, S., and Little, D. (2007). "Asphalt Mixture Moisture Damage Assessment Combined with Surface Energy Characterization," *Proceedings of the International Conference on Advanced Characterization of Pavement and Soil Engineering Materials*, Athens, Greece.
 28. Huang, C., Masad, E., Muliana, A., Bahia, H. (2007). "Nonlinear Viscoelastic Analysis of Asphalt Mixtures," *Analysis of Asphalt Pavement Materials and Systems: Engineering Methods*, Geo-Institute, American Society of Civil Engineers. Editors: Wang, L. and Masad, E., **ASCE Geotechnical Special Publication, GSP N0. 176, pp. 64-72**.
 29. Abbas, A., Papagiannakis, T., and Masad, E. (2006). "Micromechanical Simulation of Asphaltic Materials Using the Discrete Element Method," *Asphalt Concrete: Simulation, Modeling, and Experimental Characterization*, Geo-Institute, American Society of Civil Engineers. Editors: Masad, E., Panoskaltsis, V., and Wang, L., **ASCE Geotechnical Special Publication, GSP No. 146, pp. 1-11**.
 30. Dessouky, S., and Masad, E. (2006). "The Development of a Microstructural-Based Continuum Model for Hot Mix Asphalt," *Asphalt Concrete: Simulation, Modeling, and Experimental Characterization*, Geo-Institute, American Society of Civil Engineers. Editors: Masad, E., Panoskaltsis, V., and Wang, L., **ASCE Geotechnical Special Publication, GSP No. 146, pp. 44-52**.
 31. Al-Omari, A., and Masad, E. (2004). "Three Dimensional Simulation of Fluid Flow in Granular Material Microstructure," *Advances in Geotechnical Engineering with Emphasis on Dams, Highway*

- Materials and Soil Improvement, Editors, Al-Shibli, K., Malkawi, A. H., and Alsaleh, M., July 12- 15, Irbid, Jordan, **ASCE Geotechnical Practice Publication No. 1, pp. 177 – 190.**
32. Park, D. W., Epps Martin, A., and Masad, E. (2004). "Simulation of Permanent Deformation Using An Elastic Viscoplastic Constitutive Relation," Proceedings of the International Conference on Accelerated Pavement Testing, Minneapolis, Minnesota, September 26 – 29, 2004.
 33. Masad, E., Zollinger, D. (2004). "Integrated Approach for Teaching Laboratory Courses and Basic Properties of Construction Materials," *2004 ASEE Annual Conference-Gulf Southwest Section* March 11-12, 2004, Texas Tech University, Lubbock, TX.
 34. Tashman, E., Masad, E., Zbib, H., and Little, D., Kaloush, K. (2004). "Continuum Damage Model for Permanent Deformation of Asphalt Mixes," *Proceedings of the 15th Engineering Mechanics Conference, ASCE, Columbia University, NY. Recent Advances in Materials Characterization and Modeling of Pavement Systems, Editors, Tutumluer, E., Masad, E., and Najjar, Y., Reston, VA., ASCE Geotechnical Special Publication No. 123, pp. 111-125.*
 35. Abbas, A., Papagiannakis, T, Masad, E. (2004). "Microstructural Analysis of the Constitutive Behavior of Asphalt Concretes," Proceedings of the 15th Engineering Mechanics Conference, ASCE, Columbia University, NY. Recent Advances in Materials Characterization and Modeling of Pavement Systems, Editors, Tutumluer, E., Masad, E., and Najjar, Y., Reston, VA., **ASCE Geotechnical Special Publication No. 123, pp. 102 – 110.**
 36. Dessouky, S., Masad, E., Zbib, H., Little., D. (2003). "Finite Element Gradient Elasticity Model for the Analysis of Bituminous Material Microstructure," *Proceedings of the Second MIT Conference on Computational Fluid and Solid Mechanics*, June 17-20, 2003, Cambridge, Massachusetts.
 37. Dessouky, S., Masad, E., and Bayomy, F., (2002). "Analysis and Measurement of Asphalt Mix Stability Using the Superpave Gyrotory Compactor," *The 6th International Conference on the Bearing Capacity of Roads, Railways, and Airfields (BCRA '02), Lisbon, Portugal.*
 38. Dessouky, S., Masad, E., and Bayomy, F., (2002). "Image Analysis Techniques: New Methods for Characterizing Asphalt Mixes and Aggregates," *First Gulf Conference on Roads*, Kuwait.
 39. Button, J. W., Chowdhury, A., Park, D-W, Little, D., and Masad, E. (2002). "Effects of Fine Aggregate Properties on Rutting Resistance," Ninth International Conference on Asphalt Pavements, Copenhagen, Denmark, **Vol. 1, No. 7-2.**
 40. Chowdhury, A., Button, J. W., Wilson, D., Masad, E., and Prowell, B. D. (2001). "Image Analysis Techniques to Determine Fine Aggregate Angularity," *Aggregate Contribution to Hot Mix Asphalt (HMA) Performance, Special Testing Publication, ASTM*, T. D. White, S. R. Johnson, and J. J. Yzenas, Eds., American Society for Testing and Materials, West Conshohocken, PA., **STP 1412, pp. 128-143.**
 41. Masad, E., Button, J. and Papagiannakis, T. (2000). "Summary of the Paper: Fine Aggregate Angularity, Automated Image Analysis Approach," *The Catalog of 2000 Practical Papers Published by the Transportation Research Board, Section on Mineral Aggregates, Paper Number 00-0691.*
 42. Masad, E., Muhunthan, B., Shashidhar, N., and Harman T. (1998). "Aggregate Orientation and Segregation in Asphalt Concrete," *ASCE Geotechnical Special Publication, GSP No. 85, pp. 69 - 80.*

43. Masad, E. A. and Muhunthan, B., (1998). "Simulation of Three-Dimensional Anisotropic Soil Microstructure," *Proc., Imaging Technologies: Techniques and Civil Engineering Applications Conference*, McNeil, S. and Frost, D. "Editors", Davos, Switzerland, **pp. 265 - 285.**
44. Muhunthan, B. and Masad, E., (1998). "Determination of Void Fabric Tensor of Soils without Radial Sampling Bias," *Proc., Imaging Technologies: Techniques and Civil Engineering Applications Conference*, McNeil, S. and Frost, D. "Editors", Davos, Switzerland, **pp. 40 - 55.**

Invited Presentations and Lectures

1. Masad, E. (2019). "Multi-physics Approach for Modeling Parameter-Identification of Asphalt Composites," *12th Congress of the Hellenic Society of the Theoretical and Applied Mechanics (HSTAM)*, September 22-25, Thessaloniki-Greece.
2. Masad, E. (2019). "Future of AI in Advancing Development, Characterization, and Modeling of Materials," *Arab Artificial Intelligence Summit (AAIS)*, Oct 29-30, Dean Sea-Jordan.
3. Masad, E. (2018). "Advances in Mechanistic-based Modeling and Multi-scale Characterization of Asphaltic Materials: Opportunities and Challenges," *Technical University of Vienna*, September 14, Vienna-Austria.
4. Masad, E. (2017). "Advances in the Analysis and Characterization of Pavement Systems and Materials: Opportunities and Challenges," *Jordan University for Science and Technology*, October 15, Irbid-Amman.
5. Masad, E. (2016). "Mechanistic Computational Framework for Predicting Performance of Asphalt Pavements: Opportunities and Challenges," *American University of Beirut*, February 11, Beirut, Lebanon.
6. Masad, E. (2013). "Characterization of Materials and Mechanistic-Empirical Pavement Analysis in the State of Qatar," *The 4th Middle East Bitumen/Asphalt 2013*, May 7-8, Doha-Qatar.
7. Masad, E. (2012). "Integrated Approach for the Construction of Long-Lasting Roads in the State of Qatar," *Road Planning, Design and Construction Middle East Conference*, March 12, Doha-Qatar.
8. Masad, E. (2012). "Research and Graduate Studies at Texas A&M at Qatar," *University of Jordan*, December 27, Amman-Jordan.
9. Masad, E., Abu Al-Rub, and Little, D. (2011). "Pavement Analysis Using Nonlinear Damage Approach," *Transportation Research Board Webinar, Advanced Models to Characterize and Design Asphalt Pavements: Implementation and Application Examples*, October 12, Washington DC.
10. Masad, E. (2011). "Development and Implementation of State-of-the-Practice Methods in Asphalt Pavement Design and Construction," *Road Planning, Design and Construction Middle East Conference*, March 7, Doha-Qatar.
11. Masad, E. (2010). "Mechanistic Modeling of Asphalt Pavements," *Faculty of Civil Engineering, South China University of Technology, Guangzhou, China.*

12. Masad, E. (2010). "Models for Plastic Deformation Based on Non-Linear Response for FEM Implementation," *International Workshop on Asphalt Binders and Mastics*, September 16, Madison, Wisconsin.
13. Masad, E. (2010). "Opportunities and Challenges in Mechanistic Modeling of Asphalt Pavements," Illinois Center for Transportation, University of Illinois at Urbana-Champaign, September 20, 2010.
14. Masad, E. (2010). "Recent Advances in Characterization of Asphalt Pavement Materials in Qatar," Invited Lecture by the Qatar Society of Engineers, January 25th, Doha, Qatar.
15. Masad, E. (2010). "State-of-the-Art in Laboratory Characterization of Asphalt Mixtures and its Relationships to Project Quality," Invited Lecture by Qatar Public Works Authority, February 8, 2010, Doha, Qatar.
16. Masad, E. (2008). "Modeling of Hot Mix Asphalt," *Workshop on Validation of Advanced Flexible Pavement Modeling with Accelerated Pavement Testing Data*, 87th Annual Meeting of the Transportation Research Board, January 13, Washington DC.
17. Masad, E. (2008). "Image Analysis Systems for Measuring Shape Properties," *Workshop on Recent Developments in Characterization of Aggregate Shape, Angularity, and texture*, 87th Annual Meeting of the Transportation Research Board, January 13, Washington DC.
18. Masad, E. (2007). "Characterization of Binders and Aggregates for Durable Pavements," Road Maintenance: a High Tech Industry Workshop, December 6 and 7, Delft University of Technology, Delft, Netherlands.
19. Masad, E. (2007). "Fatigue Research in Asphalt Pavement Consortium," *Fundamental Properties and Advanced Models Expert Task Group of the Federal Highway Administration*, July 23, Denver, Colorado.
20. Masad, E. (2007). "Development and Implementation of a Microstructure-Based Model for Asphalt Mixes," *An International Symposium on Asphalt Pavement Design and Performance*, University of Nottingham, June 18, Nottingham, Nottingham, United Kingdom.
21. Masad, E. (2007). "Microstructure-Based Modeling of Asphalt Composites from Development to Implementation," *The 18th Engineering Mechanics Division Conference of the American Society of Civil Engineers*, June 3-6, Blacksburg, VA. (Keynote Presentation).
22. Masad, E., Huang, C. W., D'Angelo, J., Bahia, H., and Airey, G. (2007). "Nonlinear Viscoelastic Analysis of Asphalt Binders and Mixes," *The 6th International Conference on Binder Rheology and Pavement Performance*, April 2-3, Tampa, FL.
23. Masad, E., Bhasin, A., Little, D., and Lytton, R. (2007). "A System Approach for the Analysis of Moisture Damage," *The 6th International Conference on Binder Rheology and Pavement Performance*, April 2-3, Tampa, FL.
24. Masad, E. (2007). "On the Limitations of the Use of Linear Viscoelasticity in Modeling the Behavior of Asphalt Mixes," *Modeling Expert Task Group of the Federal Highway Administration*, February 7-8 Phoenix, AZ.

25. Masad, E. (2006). "A Proven System for the Characterization of HMA Resistance to Moisture Damage and Fatigue," *Carpenter Symposium on Modeling of Pavement Materials and Damage Mechanics*, December 17-19, Hammamet, Tunisia.
26. Masad, E. (2006). "Applications of Simulation, Imaging and Mechanics to Asphalt Pavements," *Department of Civil Engineering, Michigan Technological University*, November 1st, Houghton, MI.
27. Masad, E. (2006). "A Unified Method for Fatigue Characterization of Asphalt Mixtures," *Modeling Expert Task Group of the Federal Highway Administration, University of Illinois at Urbana-Champaign*, October 12-13, Urbana, AZ.
28. Masad, E. (2006). "Relationship of Moisture Damage to the Microstructure Properties of Asphalt Mixes," *National Science Foundation Workshop on Microstructure and Micromechanics of Stone-Based Infrastructure Materials, Virginia Tech*, October 5-6, Blacksburg, VA.
29. Masad, E. (2006). "Microstructure Characterization of Geomaterials," *Three Invited Lectures in an International Workshop on Geomechanics, Charles University*, September 25-27, Prague, Czech Republic.
30. Masad, E., Lytton, R., and Little, D. (2006). "A Proven System for the Characterization of HMA Resistance to Moisture Damage," *Oklahoma Department of Transportation*, March 10, Oklahoma City, OK.
31. Masad, E., Lytton, R., and Little, D. (2006). "Mechanics Tools for Characterizing Moisture Damage in Asphalt Pavements," *University of Oklahoma*, March 10, Norman, OK.
32. Masad, E. (2005). "Factors Influencing Moisture Damage of Asphalt Pavements," *International Workshop on Moisture Induced Damage of Asphalt Mixes, Delft Technological University*, November 22-25, Delft, The Netherlands.
33. Masad, E. (2005). "Elasto-Visco-Plastic Modeling and Microstructure Analysis of Asphalt Mixes," *University of Florida*, October 27th, Gainesville, FL.
34. Masad, E. (2005). "Predictions of HMA Permeability Tensor Coefficients Through Three Dimensional Numerical Simulations of Fluid Flow in the Microstructure," *Symposium on Advances in Pavement Mechanics, Eighth U.S. National Congress on Computational Mechanics (USNCCM8)*, July 25-27, Austin, TX. (Keynote Presentation).
35. Masad, E., and Tutumluer, E. (2005). "Test Methods for Measuring Aggregate Shape, Angularity and Texture," *56th Highway Geology Symposium*, Wilmington, North Carolina, May 4-6, 2005.
36. Masad, E. (2005). "Analysis of HMA Permeability through Microstructure Characterization and Simulation of Fluid Flow in X-ray CT Images," *Department of Civil Engineering, University of Tennessee*, April 1st, Knoxville, TN.
37. Masad, E. (2005). "Multiscale Modeling of Bound Granular Materials: Application to Hot Mix Asphalt," *School of Mechanical and Material Engineering, Washington State University*, April 21, Pullman, WA.

38. Masad, E. (2005). "Microstructure Characterization of Hot Mix Asphalt," Session on Emerging Models for Asphalt Mixtures and Pavements: What Are They and How Do They Work, *The 84th Annual Meeting of the Transportation Research Board*, Washington, DC.
39. Masad, E. (2004). "Moisture Damage of Hot Mix Asphalt," *Department of Civil and Environmental Engineering, Jordan University of Science and Technology*, July 13, Irbid, Jordan.
40. Masad, E. (2003). "Microstructure-based Viscoplastic Continuum Model for Asphalt Concrete," *Department of Civil Engineering, University of Minnesota*, October 31, Minneapolis, MN.
41. Masad, E. (2003). "Imaging of the Microstructure of Asphalt Mixes and Aggregates," *The NSF-FHWA Workshop on Imaging and Simulation of Concrete Microstructure (Nano to Mesoscale)*, July 29-31, Northwestern University, Evanston, IL.
42. Masad, E. (2003). "The Development of the Aggregate Imaging System (AIMS)," *The 36th Annual Mid-Atlantic Region Quality Assurance Workshop*, February 11-13, Charleston, West Virginia.
43. Masad, E. (2002). "Anisotropic Viscoplastic Damage Model for Asphalt Mixes," *Department of Civil and Environmental Engineering, Louisiana State University*, November 20, Baton Rouge, LA.
44. Masad, E. (2002). "Microstructure Based Characterization and Modeling of Asphalt Mixes," *Department of Civil and Environmental Engineering, University of Illinois at Urbana-Champaign*, May 8th, Urbana, IL.
45. Masad, E. (2002). "Microstructure Based Characterization and Modeling of Asphalt Mixes," *Department of Civil Engineering and Texas Transportation Institute, Texas A&M University*, May 6th, College Station, TX.
46. Masad, E. (2000). "Applications of Imaging Technologies to Asphalt Mixtures," *6th Annual Oregon Asphalt Conference*, March 10, Eugene, Oregon.
47. Masad, E. (2000). "Analysis of Asphalt Mixes and Aggregates Using Imaging Technology," *Department of Civil Engineering and Texas Transportation Institute, Texas A&M University*, October 24th, College Station, TX.
48. Masad, E. (1999). "Applications of Imaging Technologies to Asphalt Mixtures," *Idaho Asphalt Conference*, October 21, Moscow, Idaho.
49. Masad, E. (1998). "Numerical Modeling of Geo-materials," *Department of Civil Engineering, University of Wisconsin*, Madison, WI.
50. Masad, E., and Muhunthan, B. (1997). "On the Modeling of Materials Microstructure," *Department of Civil Engineering, University of Massachusetts*, Amherst, MA.

Conference Papers, Articles and Professional Presentations

1. Abu-Odah, A., Sadeq, M., Masad, E., Geedipally, S.R., Ko, M., (2017). Experimental and Analytical Investigation of the Performance of SUV and Balloon Tires Commonly Used in Qatar. Annual Meeting of the Transportation Research Board, Washington D.C.

2. Kogbara, R.B., Parsaei, B., Iyengar, S.R., Grasley, Z. C., Masad E.A. and Zollinger, D.G. (2014). "Evaluating Damage Potential of Cryogenic Concrete Using Acoustic Emission Sensors and Permeability Testing," Proceedings of SPIE, Vol. 9061: Sensors and Smart Structures Technologies for Civil, Mechanical, and Aerospace Systems (ed. J. P. Lynch, K-W. Wang, H. Sohn), San Diego, CA, USA.
3. Kogbara, R.B., Iyengar, S.R., Grasley, Z.C., Masad E.A., and Zollinger, D.G. (2014). "Damage Quantification and Durability Assessment of Concrete at Cryogenic Temperatures," Elsevier's International Sustainable Built Environment Conference, Doha, Qatar.
4. Mehrez, L., Ghanem, R., and Masad, E. (2014). "A Spectral Stochastic Framework for the Uncertainty Quantification of Asphalt Mixtures Behavior," *Engineering Mechanics Institute Conference* August 5-8, 2014 at McMaster University, Canada.
5. Darabi, M.K., Abu Al-Rub, R.K., Masad, E.A., Little, D.N. (2013). "Constitutive modeling of fatigue damage response of asphalt concrete materials," *Transportation Research Board, 92nd Annual Meeting*, January 13-17, Washington, D.C.
6. Darabi, M.K., Abu Al-Rub, R.K., Masad, E.A., Little, D.N. (2013). "Constitutive modeling of cyclic viscoplastic response of asphalt concrete," *Transportation Research Board, 92nd Annual Meeting*, January 13-17, Washington, D.C.
7. Rahmani, E., Darabi, M.K., Abu Al-Rub, R.K., Masad, E., Little, D.N. (2013) "Chemo-Mechanical Modeling of Asphalt Concrete," Petersen Asphalt Research Conference, Laramie, WY.
8. Shakiba, M., Abu Al-Rub, R., Darabi, M., You, T., Masad, E., and Little, D. (2013). "A Continuum Moisture-Mechanical Damage Model for Asphalt Concrete," *Transportation Research Board, 92nd Annual Meeting*, January 13-17, Washington, D.C.
9. Shakiba, M., Darabi, M.K., Abu Al-Rub, R.K., Masad, E., Little, D.N., (2013). "Constitutive Modeling of Pore Water Pressure in Asphalt Concrete," *Engineering Mechanics Institute, Northwestern University, IL.*
10. Darabi, M.K., Abu Al-Rub, R.K., Masad, E.A., Little, D.N. (2012) "A cyclic hardening-relaxation viscoplastic model that enhances the prediction of permanent deformation of asphalt concrete pavements," *In. Joint Conference of the Engineering Mechanics Institute and the 11th ASCE Joint Specialty Conference (EMI/PMC)*, Notre Dame, IN, June 17-21.
11. Masad, E., Abu Al-Rub, R.K., and Little. (2012). "Macro and micro-mechanical simulations of asphalt composites using elasto-visco-plastic constitutive models", *International Conference on Mechanics of Nano, Micro and Macro Composite Structures*, Torino, Italy, June 18-20.
12. Kassem, E, and Masad, E. (2011). "Skid Resistance of Asphalt Pavements." *Southeastern Asphalt User Producer Group Meeting*, Savannah, Georgia, November 14-17.
13. Kassem, E. and Masad, E. (2011). "Prediction of Asphalt Pavements Skid Resistance Using Aggregate Texture and Mixture Design Data." FHWA Asphalt Models, Binder & Mix ETG Meetings, Phoenix, Arizona, March 17-18.

14. Sousa, P., Kassem, E., Masad, E., and Little, D. (2011). "New Design Method of Fine Aggregates Mixtures and Automated Method for Analysis of Dynamic Mechanical Characterization Data." The 90th Annual Meeting, Transportation Research Board, Washington, D.C.
15. Abu Al-Rub, R., Darabi, M., Masad, E. (2010). "A Straightforward Numerical Technique for Finite Element Implementation of Nonlocal Gradient-Dependent Continuum Damage Mechanics Theories," *In the 16th US National Congress of Theoretical and Applied Mechanics*, USNCTAM2010-991.
16. Darabi, M.K., Abu Al-Rub, R.K., Masad, E.A. (2010). "A Direct Finite Element Implementation of Gradient-Dependent Continuum Damage Mechanics Theories," *In. Engineering Mechanics Institute 2010, EMI 2010*, Los Angeles, California, August 8-11.
17. Darabi, M.K., Abu Al-Rub, R.K., Masad, E.A., Little, D.N. (2010). "A Unified Thermodynamic Constitutive Model for Predicting the Viscoelastic, Viscoplastic, and Viscodamage Behavior of Asphalt Mixes," *In the Engineering Mechanics Institute 2010, EMI 2010*, Los Angeles, California, August 8-11.
18. Graham, Abu Al-Rub, R.K., Masad, E.A., Little, D.N. (2009). "Damaged Viscoelastic-Viscoplastic Model for Asphalt Concrete Mixes," *In the 2009 Joint ASCE-ASME-SES Conference on Mechanics of Materials*, Blacksburg, Virginia, June 24-27.
19. Lytton, R. and Masad, E. (2009). "The Future of Geotechnical Pavement Engineering," *Geo-Strata*, American Society of Civil Engineering, **Vol. 13, No. 3, pp. 24-26.**
20. Masad, E. (2008). "Modeling of Hot Mix Asphalt," *Workshop on Validation of Advanced Flexible Pavement Modeling with Accelerated Pavement Testing Data*, 87th Annual Meeting of the Transportation Research Board, January 13, Washington DC.
21. Masad, E. (2008). "Image Analysis Systems for Measuring Shape Properties," *Workshop on Recent Developments in Characterization of Aggregate Shape, Angularity, and Texture*, 87th Annual Meeting of the Transportation Research Board, January 13, Washington DC.
22. Masad, E. (2008). "Modeling Approaches in the Asphalt Research Consortium," *Fundamental Properties and Advanced Models Expert Task Group of the Federal Highway Administration*, June 19, Chicago, Illinois.
23. Masad, E. (2008). "Damage and Anisotropic Viscoelastic-Viscoplastic Model for Hot Mix Asphalt," *The 3rd IMS International Conference on Applications of Traditional and High Performance Materials in Harsh Environment*, American University of Sharjah, January 23-24, Sharjah, United Arab Emirates.
24. Masad, E. (2008). "Analysis of Moisture Damage in Hot Mix Asphalt," *The 3rd IMS International Conference on Applications of Traditional and High Performance Materials in Harsh Environment*, American University of Sharjah, January 23-24, Sharjah, United Arab Emirates.
25. Dessouky, S. and Masad, E. (2007). "Numerical Implementation of an Elasto-Viscoplastic Microstructure-Based Continuum Model for Asphalt Concrete," *The 44th Annual Technical Meeting of the Society of Engineering Science*, October 21-24, College Station, TX.

26. Castelo Branco, V., Masad, E., Little, D., and Bhasin, A. (2007). "An Improved Method for the Analysis of Asphalt Mastic Using DMA," *Proceedings of the 15th Symposium of the International Center for Aggregate Research*, Austin, TX. **(CD Publications)**.
27. Ashtiani, R., Little, D., and Masad, E. (2007). "Optimizing the Performance of Base Layers with High Fines Content," *Proceedings of the 15th Symposium of the International Center for Aggregate Research*, Austin, TX. **(CD Publications)**.
28. Saadeh, S., and Masad, E. (2006). "A Viscoelastic-Viscoplastic Damage Model for Asphalt Mixes," *15th U.S. National Congress on Theoretical and Applied Mechanics*, University of Colorado at Boulder, June 25 -30, Boulder, CO.
29. Huang, C. W., Masad, E., Muliana, A. (2006). "Nonlinear Viscoelastic Analysis of Asphalt Mixes at Different Temperatures and Strain Levels," *15th U.S. National Congress on Theoretical and Applied Mechanics*, University of Colorado at Boulder, June 25 -30, Boulder, CO.
30. Masad, E., and Little, D. (2006). "Aggregates and Stone Matrix Asphalt Mixtures: A Winning Combination," *Stone, Sand & Gravel REVIEW*, National Stone, Sand, and Gravel Association, January-February 2006 Issue.
31. Mahmoud, E., Masad, E., and Little, D. (2006). "Evaluation of Aggregate Resistance to Degradation Under Mechanical Forces," *Proceedings of the 14th Symposium of the International Center for Aggregate Research*, Austin, TX. **(CD Publications)**.
32. Tashman, L., and Masad, E., and Little, D. (2005). "Characterization of Air Void Distribution in Asphalt Concrete Using X-ray Tomography," *The First Middle East International Conference on Advances in Civil, Mechanical, and Materials Engineering*, May 10-13, Amman, Jordan.
33. Al-Rousan, T., and Masad, E. (2005). "Characterization of Aggregate Shape Properties Using a Computer Automated System," *The First Middle East International Conference on Advances in Civil, Mechanical, and Materials Engineering*, May 10-13, Amman, Jordan.
34. Al-Omari, A., and Masad, E., (2005). "Analysis of HMA Permeability through Microstructure Characterization and Simulation of Fluid Flow in X-ray CT Images," *The First Middle East International Conference on Advances in Civil, Mechanical, and Materials Engineering*, May 10-13, Amman, Jordan.
35. Dessouky, S., Masad, E., Saadeh, S., and Little, D. (2005). "Development and Finite Element Implementation of Anisotropic Viscoplastic Model for Hot Mix Asphalt," *The 2005 Joint ASCE/ASME/SES Conference on Mechanics and Materials*, June 1-3, Baton Rouge, Louisiana.
36. Saadeh, S., Masad, E., Dessouky, S., and Little, D. (2005). "Experimental Verification of Anisotropic Elasto-Visco-Plastic Model for Hot Mix Asphalt Under Different Loading Conditions," *The 2005 Joint ASCE/ASME/SES Conference on Mechanics and Materials*, June 1-3, Baton Rouge, Louisiana.
37. Abbas, A., Masad, E., and Papagiannakis, E. (2005). "Simulation of the Micromechanical Behavior of Asphalt Mixtures Using the Discrete Element Method," *The 2005 Joint ASCE/ASME/SES Conference on Mechanics and Materials*, June 1-3, Baton Rouge, Louisiana.

38. Masad, E., Mahmoud, E., Little, D., Herrera, C., and Morgan, E. (2005). "Evaluation of Aggregate Resistance to Polishing and Abrasion Using Imaging Techniques," *Proceedings of the 13th Symposium of the International Center for Aggregate Research*, Austin, TX. (CD Publications).
39. Masad, E., Bathina, M., Little, D., and Spiegelman, C. (2005). "Statistical Methods for the Analysis of Aggregate Physical Characteristics," *Proceedings of the 13th Symposium of the International Center for Aggregate Research*, Austin, TX. (CD Publications).
40. Masad, E., and Al-Omari, A. (2004). "Predictions of HMA Permeability Using 3-D Microstructure Simulation of Fluid Flow," *International Conference on Computational and Experimental Engineering and Sciences*, July 26 – 29, 2004, Madeira, Portugal.
41. Al-Omari, A., and Masad, E. (2004). "Three Dimensional Simulation of Fluid Flow in Granular Material Microstructure," *Advances in Geotechnical Engineering with Emphasis on Dams, Highway Materials and Soil Improvement*, July 12- 15, Irbid, Jordan.
42. Dessouky, S, Saadeh, S., Masad, E., and Little, D. (2004). "Microstructural Viscoplastic Continuum Model for Asphalt Mixes," *International Conference on Computational and Experimental Engineering and Sciences*, July 26 – 29, 2004, Madeira, Portugal.
43. Tashman, L., Masad, E., Saadeh, S., and Little, D. (2004). "Nonassociated Viscoplastic Model for Asphalt Mixes based on Microstructure Analysis," *Proceedings of the 17th Engineering Mechanics Conference, ASCE*, University of Delaware June 13-16, Newark, DE.
44. Abbas, A., Masad, E., Papagiannakis, T. (2004). "Viscoelastic Analysis of Asphalt Concretes using the Discrete Element Method," *Proceedings of the 17th Engineering Mechanics Conference, ASCE*, University of Delaware June 13-16, Newark, DE.
45. Masad, E., and Al-Omari, A. (2004). "Three Dimensional Simulation of Fluid Flow in Granular Material Microstructure," *Proceedings of the 17th Engineering Mechanics Conference, ASCE*, University of Delaware June 13-16, Newark, DE.
46. Masad, E., (2004). "Microstructure Analysis of HMA Using Imaging Techniques: Simulation, Imaging and Mechanics of Asphalt Pavements (SIMAP)," *Jordan International Conference on Sustainable Development of Transportation Systems*, April 13-15, Amman, Jordan.
47. Dessouky, S., Masad, E., Zbib, H., Little, D. (2003). "Finite Element Analysis of Thin Film Deformation in Asphalt Mixes Using Gradient Elasticity," *Proceedings of the 16th Engineering Mechanics Conference, ASCE*, University of Washington July 16-18, Seattle, WA.
48. Masad, E., Birgisson, B., Al-Omari, A., and Cooley, A. (2003). "Analysis of Permeability and Fluid Flow in Asphalt Mixes," *The 82th Annual Meeting of the Transportation Research Board*, Washington, DC.
49. Fletcher, T., Chandan, C., Masad, E., and Sivakumar, K. (2003). "Aggregate Imaging System (AIMS) for Characterizing the Shape of Fine and Coarse Aggregates," *The 82th Annual Meeting of the Transportation Research Board*, Washington, DC.
50. Masad, E. (2002). "Aggregate Imaging System (AIMS)," *The Transportation Research Board, Superpave Mixture/Aggregate Expert Task Group*, August 28-29, Minneapolis, MN.

51. Fletcher, T., Chandan, C., Masad, E., Sivakumar, K. (2002). "Measurements of Aggregate Texture and Its Influence on HMA Permanent Deformation," *The 81th Annual Meeting of the Transportation Research Board*, Washington, DC.
52. Masad, E., Tashman, L., Zbib, H., and Little, D. (2002). "Anisotropic Viscoplastic Model for Asphalt Mixes with Microstructure Parameters," *Plasticity 2002*, January 3-9, ARUBA.
53. Masad, E., Tashman, L., and Little, D. (2002). "A Continuum Damage Framework To Validate A Unified Method Of Aggregate Classification Based On Image Analysis," *Proceedings of the 10th Symposium of the International Center for Aggregate Research*, Baltimore, MD. **(CD Publications)**.
54. Masad, E., and Fletcher, T. (2001). "AIMS: Aggregate Imaging System for Characterizing the Shape of Coarse and Fine Aggregates," *Proceedings of the 10th Symposium of the International Center for Aggregate Research*, Baltimore, MD. **(CD Publications)**.
55. Masad, E., Tashman, L., Saleh, H. (2001). "Evaluation of Air Void Structure in Asphalt Mixes Under Different Compaction Techniques," *The 10th Annual Research Symposium of the American Society for Nondestructive Testing*, Denver, CO.
56. Masad, E. (2001). "Review of Imaging Techniques for Characterizing the Shape of Aggregates Used In Asphalt Mixes," *Proceedings of the 9th Symposium of the International Center for Aggregate Research*, Austin, TX. **(CD Publications)**.
57. Abbas, A., Papagiannakis, T., Masad, E. (2001). "Relating the Microstructure of Asphalt Mixes to their Constitutive Behavior," *Proceeding of the 2001 ASCE-ASME-SES Joint Applied Mechanics and Materials Summer Conference*, University of California, San Diego, LaJolla, CA, June 27-29, 2001.
58. Masad, E., Tashman, L., and Little, D. (2001). "Quantifying Anisotropy in Asphalt Mixtures Using Micromechanics Analysis," *Proceeding of the 2001 ASCE-ASME-SES Joint Applied Mechanics and Materials Summer Conference*, University of California, San Diego, LaJolla, CA, June 27-29, 2001.
59. Masad, E., Olcott, D., White, T., and Tashman, L. (2001). "Correlation of Imaging Shape Indices of Fine Aggregate with Asphalt Mixture Performance," *The 80th Annual Meeting of the Transportation Research Board*, Washington, DC.
60. Masad, E., Jandhyala, V. K., Dasgupta, N., and Saleh, H. (2000). "The Use of X-ray Computed Tomography in Quantifying Air Voids in Asphalt Compacted Specimens," *The 9th Annual Research Symposium of the American Society for Nondestructive Testing*, Birmingham, AL.
61. Masad, E., Tashman, L., Peterson, B., Anderson, M., Harman, T., D'Angelo, J., and Bukowski, J. (2000), "Analysis of Asphalt Mixes and Aggregates Using Imaging Technology," *The TRB-FHWA Mixture Expert Task Group Meeting*, September 11 - 13, Indianapolis, IN.
62. Masad, E., Tashman, L., Peterson, B., Harman, T., D'Angelo, J., and Bukowski, J. (2000). "Advances in the Internal Structure Analysis of Asphalt Mixes," *Peterson Asphalt Research Conference, 37th Annual meeting*, Laramie, WY.
63. Masad, E., Tashman, L., Somadevan, N., James, L., and Olcott, D. (2000). "Applications of Imaging Technology to Asphalt Mixes," *6TH Annual Oregon Asphalt Conference*, March 10th, Salem, OR.

64. Masad, E. (2000). "New Tools for Quantifying the Effects of Compaction Procedures on Asphalt Mixtures," *The Meeting of the Four States New Pavement Technology Pooled Fund*, January 27th, Tumwater, WA.
65. Masad, E., Button, J. and Papagiannakis, T. (2000). "Fine Aggregate Angularity: Automated Image Analysis Approach," *The 79th Annual Meeting of the Transportation Research Board*, Washington, DC.
66. Kose, S., Guler, M., Bahia, H., and Masad, E. (2000). "Distribution of Strains within Asphalt Binders in HMA Using Imaging and Finite Element Techniques," *The 79th Annual Meeting of the Transportation Research Board*, Washington, DC.
67. Masad, E. (1999). "Applications of Imaging Technology to Asphalt Mixtures," *1999 Idaho Asphalt Conference*, Moscow, ID.
68. Masad, E. (1999). "A New Approach for the Analysis of Asphalt Mixes Using Imaging Technology," *The Annual Convention of The Asphalt Paving Association of Washington*, Seattle, WA.
69. Masad, E., Papagiannakis, T. (1999). "The Establishment of Washington Center for Asphalt Technology (WCAT)," *The Annual Convention of the Asphalt Paving Association of Washington*, Seattle, WA.
70. Masad, E. A., Muhunthan, B., Shashidhar, N., and Harman, T. (1999). "Effect of Compaction Procedure on the Aggregate Structure in Asphalt Concrete," *The 78th Transportation Research Board*, Washington, DC.
71. Masad, E. A. and Muhunthan, B. (1998). "Permeability of Two Dimensional Simulated Soil Microstructure," *Society of Engineering Science 35th Annual Technical Meeting*, Pullman, WA.
72. Shashidhar, N., Masad, E., Dou, X., Butler, J., Davies, R., Harman, T., Romero, P. (1998). "Simulation, Imaging and Mechanics of Asphalt Pavements, a new approach," *Peterson Asphalt Research Conference, 35th Annual meeting*, Laramie, WY.
73. Masad, E. A. (1998). "Image Analysis of Asphalt Concrete," *The Asphalt Institute*, Lexington, KY.
74. Masad, E. A. and Muhunthan, B., and Shashidhar, N. (1997). "Image Analysis of Asphalt Concrete Microstructure," *Turner-Fairbank Highway Research Center, Federal Highway Research Center*, McLean, VA.
75. Muhunthan, B. and Masad, E.A. (1997). "Fabric Effects on the Yield and Plastic Stress-Strain Behavior of Clays," *Sixth International Symposium on Plasticity and its Current Applications Conference*, Juneau, AL.
76. Masad, E. A. and Muhunthan, B., (1996). "Computer Simulation of Anisotropic Porous Soil Microstructure," *Fifth Northwest Regional Geotechnical and Pavements Conference*, Seattle, WA.
77. Masad, E. A. and Muhunthan, B., (1996). "Fabric Effect on the Yield Behavior of Soils," *The Fifth Northwest Regional Geotechnical and Pavements Conference*, Seattle, WA.

78. Masad, E. A. and Muhunthan, B., (1995). "Soil Structure Characterization Techniques, "*The 6th ACBM/NIST Computer Modeling Workshop*, Gaithersburg, MD.
79. Masad, E. A. and Taha, R., (1994). "Finite Element Analysis of Temperature Effects on Plain Jointed Concrete Pavements," *The Fourth Northwest Regional Geotechnical and Pavements Conference*, Pullman, WA.

RESEARCH FELLOWS AND POSTDOCS

- Dr. Lakshmi Roja Kakumanu (Ph.D., Indian Institute of Technology-Madras); January 2018 – present.
- Dr. Reginald Kogbara (Ph.D., Cambridge University, UK); April 2012 – present.
- Dr. Srinath Iyengar (Ph.D., Cambridge University, UK); May 2009 – December 2017.
- Dr. Ilaria Menapace (Ph.D., Technical University of Darmstadt, Germany); April 2013 – May 2018
- Dr. Mohammed Sadeq (Ph.D. University of Liverpool); February 2012– July 2016.
- Dr. Emad Kassem (Ph.D., Texas A&M University, USA); January 2009 – July 2015.
- Dr. Loujaine Mehrez (Ph.D., University of Southampton); May 2012 – January 2015.
- Dr. Zhengrong Zhang (Ph.D., Yokohama National University); May 2012 – October 2012.
- Dr. Chien-Wei Huang (Ph.D., Texas A&M University, USA); January 2009 – August 2011.
- Ms. Ana Rodriguez (B.Sc., Universidad Simon Bolivar, Venezuela); May 2010 – June 2011.

GRADUATE STUDENTS (+Co-advisor)

PhD Students

1. Laith Tashman; Doctor of Philosophy; December 2003
(Associate Professor, University of Jordan, Jordan)
2. Ala Abbas⁺; Doctor of Philosophy, August 2004
(Professor, University of Akron, USA)
3. Aslam Al-Omari; Doctor of Philosophy, December 2004
(Assistant Professor, Jordan University of Science and Technology, Jordan)
4. Taleb Al-Rousan; Doctor of Philosophy, December 2004
(Associate Professor, Hashemite University, Jordan)
5. Samer Dessouky; Doctor of Philosophy, May 2005
(Professor, University of Texas at San Antonio, USA)
6. Shadi Saadeh; Doctor of Philosophy, December 2005
(Professor, California State University at Long Beach, USA)

7. Edith Arambula; Doctor of Philosophy, May 2007
(Associate Transportation Scientist, Texas Transportation Institute, Texas A&M University, USA)
8. Chien-Wei Huang; Doctor of Philosophy, December 2008
(Assistant Professor, National Chung Hsing University, Taiwan)
9. Emad Kassem; Doctor of Philosophy, December 2008
(Assistant Professor, University of Idaho, USA)
10. Enad Mahmoud; Doctor of Philosophy, May 2009
(Texas Department of Transportation, USA)
11. Silvia Caro; Doctor of Philosophy, December 2009
(Associate Professor, Universidad de Los Andes, Colombia).
12. Arash Rezaei; Doctor of Philosophy, December 2010.
(Postdoctoral Research Fellow, University of California-Davis, USA).
13. Saradhi Koneru⁺; Doctor of Philosophy, August 2010.
(Design Engineer, SBM Offshore, USA).
14. Masoud Darabi⁺; Doctor of Philosophy, August 2011.
(Assistant Professor, University of Kansas, USA).
15. Jonathan Howson; Doctor of Philosophy, August 2011.
(Consultant, Houston, USA).
16. Taesun You⁺; Doctor of Philosophy, August 2013.
(Transportation Engineer, Texas Department of Transportation, USA).
17. Maryam Shakiba⁺; Doctor of Philosophy, December 2013
(Assistant Professor, Virginia Tech, USA).
18. Arif Chowdhury; Doctor of Engineering, December 2014.
(Research Engineer, Texas Transportation Institute)
19. Eisa Rahmani⁺; Doctor of Philosophy, May 2015.
(Postdoctoral Research Fellow, Texas A&M University, USA).
20. Husam Sadek⁺; Doctor of Philosophy, University of Liverpool, United Kingdom, December 2015.
(Assistant Research Professor, Louisiana State University, USA)
21. Daniel Castillo⁺; Doctor of Philosophy, University of Los Andes, Colombia, August 2015.
(Postdoctoral Researcher, Aalto University, Finland)
22. Lorena Garcia; Doctor of Philosophy, August 2016.
(Asphalt Research Scientist, TAMKO Building Products, USA).
23. Ahmed Awed; Doctor of Philosophy, August 2016.
(Assistant Professor, University of Mansooraa, Egypt)

24. Syeda Rahman⁺; Doctor of Philosophy, December 2016.
(Postdoctoral Fellow, Center for Transportation Research The University of Texas at Austin, USA).
25. Mohammed Sadeq⁺; Doctor of Philosophy, University of Liverpool, United Kingdom, December 2017.
(General Manager, Seero Engineering, Doha, Qatar)
26. Bhaskar Vajipeyajula⁺; Doctor of Philosophy, (In Progress)
27. Amal Abdelaziz⁺; Doctor of Philosophy, (In Progress)
28. Jianxin Huang⁺; Doctor of Philosophy, (In Progress)
29. Mohammed AlJarah⁺; Doctor of Philosophy, (In Progress)
30. Malek Mohamed⁺; Doctor of Philosophy, Hamad Bin Khalifa University (In Progress)

Master Students

1. Niranjanan Somadevan; Master of Science, May 2000
2. Laith Tashman; Master of Science, December 2000
3. Lisa James; Master of Science, May 2001
4. Samer Dessouky; Master of Science, December 2001
5. Thomas Fletcher; Master of Science, May 2002
6. Shadi Saadeh; Master of Science, May 2002
7. Chandan Chandan⁺; Master of Science, August 2002
8. Brain Bayne; Master of Science, August 2003
9. Adhara Castleblanco; Master of Science, August 2004
10. Corey Zollinger; Master of Science, May 2005
11. Manjula Bathina; Master of Science, May 2005
12. Emad Kassem; Master of Science, August 2005
13. Jeremy McGahan; Master of Science, December 2005
14. Dennis Gatchalian; Master of Science, December 2005
15. Enad Mahmoud; Master of Science, December 2005

16. Jonathan Howson; Master of Engineering, December 2006
17. Anthony Luce, Master of Science, December 2006
18. Saradhi Koneru, Master of Science, Mechanical Engineering, December 2006
19. Harsha Nagarajan, Master of Engineering, August 2008.
20. Michael Graham⁺, Master of Science, May 2009.
21. Andrew Muras⁺, Master of Science, December 2009.
22. Leslie Gates, Master of Science, May 2010.
23. Pedro Soares⁺, Master of Science, August 2010.
24. Sarah Khorasani, Master of Science, Mechanical Engineering, May 2013.
25. Boback Parsaei, Master of Engineering, December 2014.
26. Elias Moubarak⁺; Master of Science, Chemical Engineering, August 2019.
27. Amara Rahman⁺; Master of Science, Chemical Engineering, (In Progress).

External Co-Chair, Committee Member, or Examiner

- Nanyang Technological University, Singapore
- University of Texas at El Paso, USA
- United Arab Emirates University, UAE
- University of Nottingham, United Kingdom
- University of Illinois at Urbana-Champaign, USA
- Delft Technical University, The Netherlands
- American University of Beirut, Lebanon
- Jordan University of Science and Technology, Jordan
- Ecole Nationale Supérieure d'Arts et Métiers, France
- University of Liverpool, United Kingdom
- University of Los Andes, Colombia
- Hamad bin Khalifa University, Qatar
- Universiti Teknologi PETRONAS, Malaysia
- University of Auckland, New Zealand

CONSULTING

- Kuwait Institute for Scientific Research, Kuwait.
- Seero Engineering, Qatar.
- Leighton and Al Jaber Joint Venture, Qatar.
- Bin Omran Contractors, Qatar.

- Consolidated Contractors Company, Qatar.
- Kraton Polymers, Netherlands and Qatar.
- Fugro Peninsula, Qatar.
- Qatar Public Works Authority, Qatar.
- Private Engineering Office, Qatar.
- Ferrovial Group Company, Austin-Texas and Spain.
- PBS&J Aviation Services, Houston, TX.
- DMJM Aviation, Houston, TX.
- Pine Instruments, Grove City, PA.
- Florida Department of Transportation, Gainesville, FL.
- Texas Transportation Institute, College Station, TX.
- National Center for Asphalt Technology, Auburn, AL.
- University of Massachusetts-Dartmouth, MA.
- University of Texas-Austin, TX.
- Asphalt Institute, Lexington, KY.
- Turner-Fairbank Highway Research Center, McLean, VA.
- Washington State Department of Transportation, Kent, WA.

SERVICE

University Services

In addition to my service in various administrative roles, I served as a chair and a member of many committees and task forces at the department, college and university levels. These include tenure and promotion committees, strategic planning, ABET accreditation, curriculum, graduate studies, search for faculty and administrative positions, computing, and space.

Journal Editorial Board Member

- Journal of Materials in Civil Engineering, ASCE (1/03-Present).
- International Journal of Pavement Engineering (12/07-present).
- Journal of Mechanics of Advanced Materials and Structures (9/09-12/15).
- International Journal of Pavement Research and Technology (11/07-present).
- International Journal of Road Materials and Pavement Design (11/04-present).
- International Journal of Pavement Engineering (11/04-11/07).

Guest Editor of Special Issues

- International Journal of Pavement Engineering.
- International Journal of Geomechanics in Civil Engineering.
- International Journal of Road Materials and Pavement Design.
- Journal of Materials in Civil Engineering.
- Journal of Computing in Civil Engineering.

National and International Committees

- Chairman of AFK50(1) Subcommittee of the Transportation Research Board (11/07-5/11).
- Chairman of the Pavements Committee of the Geo Institute, ASCE. (8/03 – 10/06).
- Vice Chairman of the Pavements Committee of the Geo Institute, ASCE. (1/99 – 7/03).
- Member of the Technical Committee of GeoShanghai International Conference, Shanghai, China (June 2-4, 2006).
- Member, Mixture Expert Task Group, Federal Highway Administration, (1/06-present).
- Member of the Organizing Committee of the International Gulf Conference on Roads, November 10-13, 2008, Doha, Qatar.
- Member of International Advisory Committee for GeoX'06 Workshop, Aussois-France, (October 5-7, 2006).
- Member of the Organizing Committee of The First Middle East International Conference on Advances in Civil, Mechanical And Material Engineering, Amman-Jordan, (01/03-05/05).
- Member of the Technical Advisory Committee of the International Center for Aggregate Research (ICAR), (5/01 – present).
- Member of Steering Committee for the ASTM Symposium on Performance Tests for Hot Mix Asphalt (HMA) including Fundamental and Empirical Procedures, (8/03-5/05).
- Member of the Bituminous Materials Committee of the Construction Institute, ASCE, (1/99 – present).
- Member of the Pavements Committee of the Transportation and Development Institute, ASCE, (8/03 – present).
- Member of the Committee on Constitutive Modeling of Asphaltic Materials, International Society for Asphalt Pavements, (1/1/04-present).
- Member of the Inelastic Committee of the Engineering Mechanics Division, ASCE, (7/01-present).
- Member of the TRB Committee AFK40
- Member of the TRB Committee AFP70
- Member of the TRB Committee AFK50, (2/03 – 5/12).
- Regular Reviewer for the Civil and Mechanical Systems Division of the National Science Foundation, (8/00 – present).

Organizer and Co-organizer of Conferences and Workshops

- International Conference on Advances in Materials and Pavement Performance Prediction, April 16-18, 2018, Doha, Qatar.
- TMS Middle East - Mediterranean Materials Congress on Energy and Infrastructure Systems, January 11-14, 2015, Doha, Qatar.
- Annual Symposium on Advances in Materials Science and Engineering, February 2010-2018, Doha, Qatar.
- International Workshops on Engineering Ethics, October 8-9, 2012, Champaign, IL; October 23-25 and May 10-12, 2011, Qatar.
- Second Annual Meeting of the International Institute for Multifunctional Materials for Energy Conversion, February 20-21, 2011, Doha, Qatar.
- Fourth International Gulf Conference on Roads, Efficient Pavements and Transportation Systems: Characterization, Mechanism, Simulation, and Modeling, November 11-13, 2008, Doha, Qatar.
- Second International Workshop on Moisture Induced Damage of Asphalt Mixes, September 16-19, 2007, Texas A&M University, College Station, TX.
- Mechanics and Characterization of Infrastructure Materials Symposium, 44th Annual Technical Meeting of the Society of Engineering Science Conference, October 21-24, 2007, College Station, TX.

- Mechanics of Flexible Pavements Symposium, Sponsored by Inelastic Committee of the Engineering Mechanics Division, and The Pavement Committee of the Geo-Institute, The 15th U.S. National Congress on Theoretical and Applied Mechanics, June 25-30, 2006, University of Colorado at Boulder, Boulder, Colorado.
- First International Workshop on Moisture Induced Damage of Asphalt Mixes, November 22-25, 2005, Delft Technological University, The Netherlands.
- R. Lytton Pavement Mechanics Symposium, Sponsored by Inelastic Committee of the Engineering Mechanics Division, and The Pavement Committee of the Geo-Institute, The 2005 Joint ASCE/ASME/SES Conference on Mechanics and Materials, June 1-3, Baton Rouge, Louisiana.
- Mechanics of Geomaterials Symposium, International Conference on Computational and Experimental Engineering and Sciences, July 26 – 29, 2004, Madeira, Portugal.
- Pavement Mechanics Symposium, Sponsored by Inelastic Committee of the Engineering Mechanics Division, and The Pavement Committee of the Geo-Institute, Engineering Mechanics Conference, June 13-16, 2004, University of Delaware, Newark, DE.
- Pavement Mechanics Symposium, Sponsored by Inelastic Committee of the Engineering Mechanics Division, and The Pavement Committee of the Geo-Institute, Engineering Mechanics Conference, July 16-18, 2003, University of Washington, Seattle, WA.
- A Session on Automated Methods for Measuring Aggregate Shape Properties, Sponsored by TRB Committees A2J03 and A2D03, Transportation Research Board Meeting 2002, Washington, DC.
- Pavement Mechanics Symposium, Sponsored by Inelastic Committee of the Engineering Mechanics Division, and The Pavement Committee of the Geo-Institute, Engineering Mechanics Conference, June 2-5, 2002, Columbia University, New York, NY.