# Rafiqul A. Tarefder, Ph.D., P.E.

University of New Mexico

Phone: 505-277-6083, Fax: 505-277-1988, E-mail: tarefder@unm.edu

### **EDUCATION**

Ph.D.	Civil Engineering, 2003
	University of Oklahoma, Norman, Oklahoma
M.S.	Geotechnical Engineering, 1998
	Asian Institute of Technology, Bangkok, Thailand
B.S.	Civil Engineering, 1995
	Bangladesh Engineering University, Dhaka, Bangladesh

# EXPERIENCE

Associate Professor, Civil Engineering, University of New Mexico
Assistant Professor, Civil Engineering, University of New Mexico
Assistant Professor, Civil Engineering, Idaho State University
Assistant Professor, Texas Southern University at Houston, Texas
Research Assistant/Instructor, Civil Engineering Univ. of Oklahoma
Executive-Intern Engineer, Oklahoma Department of Transportation
External Consultant, Surbec-ART Environmental, L.L.C., Oklahoma
Research Assistant, Civil Engineering, University of Calgary, Canada
Research Associate, Asian Institute of Technology, Bangkok, Thailand

#### **HONORS & AWARDS**

Regents' Lecturer Award, University of New Mexico, 2011 Junior Faculty Research Excellence Award, UNM School of Engineering, 2010 Stamm Endowed Lectureship Award, UNM Civil Engineering, 2009 National Science Foundation CAREER Award, 2007 Outstanding Graduate Research Assistant, University of Oklahoma, 2002 Cleo Cross Scholarship for Academic Accomplishments, Univ. of Oklahoma, 2001 Govt. of Japan Scholarship for Higher Education, Asian Institute of Tech., 1996

#### **RESEARCH INTERESTS**

Characterization and modeling of geo-materials; pavement design; effects of environment on stress-strain and failure behavior of raw and stabilized aggregate bases and treated subgrades; pavement management system, FWD deflection and GPR; nanotechnology, finite element, molecular dynamics, and neural networks.

#### **RECENT PUBLICATIONS (10)**

- Tarefder, R. A., and Ahmed, M. (2013). "Consistency and Accuracy of Selected FWD Backcalculation Software for Computing Layer Modulus of Airport Pavements." *International Journal of Geotechnical Engineering*, Vol. 7, No. 1, pp. 20-33.
- Ahmed, M., Tarefder, R. A., and Islam, M. R. (2013). Effect of Cross-Anisotropy of HMA Modulus on FWD Deflections and Embedded Sensor Stress-Strain, *Journal of the Transportation Research Board*, TRB. (Accepted)
- 3. Ahmed, M., and Tarefder, R. A. (2012). "A Fuzzy Approach to Relate FWD Surface Deflection to Laboratory Determined Resilient Moduli." *International Journal of Architecture, Engineering and Construction*, Vol.1, No. 2, pp. 76-83.

- 4. Tarefder, R. A. and Bateman, D. (2012). "Design of Optimal Perpetual Pavement Structure." ASCE Journal of Transportation Engineering, Vol. 138, No. 2, pp.157-175.
- Tarefder, R. A., Bisht, R., and Ahmed, M. (2011). "Evaluation of Airport Pavements Using a Combined Index." *International Journal of Pavement Engineering and Asphalt Technology*, Vol. 12, Issue 2, pp. 15-32.
- Dhar, A. S., and Tarefder, R. A. (2011). "An Approximate Spreadsheet Integration Method for Foundation Settlements in Layered Medium." *International Journal of Geotechnical Engineering*, Vol. 5, Issue 4, pp. 459-468.
- Tarefder, R. A. and Arisa, I. (2011). "Molecular Dynamic Simulations for Determining Change in Thermodynamic Properties of Asphaltene and Resin Due to Aging." *Journal of Energy &* Fuels, Vol. 25, No. 5, pp. 2211–2222.
- "Advanced Numerical Analysis in Geomechanics." (2011). Edited by Ge, Y. N, Chen, D. H., and Tarefder, R. A., to be published as the *Special Issue of International Journal of Geomechanics*, American Society of Civil Engineers Volume 11, Issue 3, pp. 153-262.
- 9. Tarefder, R. A., and Arifuzzaman, M. (2010). "Nanoscale Evaluation of Moisture Damage in Polymer Modified Asphalts." *ASCE Journal of Materials in Civil Engineering* Vol. 22, No. 7, pp. 714-725.
- Tarefder, R.A., Zaman, M. M., Lin, D.G., and Bergado, D.T. (2009). "Finite Element Modeling of Soft Ground with PVD Under Vacuum and Embankment Preloading." *International Journal of Geotechnical Engineering*, Vol. 3, Issue 2, pp. 233-249.

# SYNERGISTIC ACTIVITIES

TRB Committee AFS90, Chemical and Mechanical Stabilization, 2010-13

TRB Steering Committee, Data Analysis Working Group (DAWG), 2012-present

Member, International Society for Asphalt Pavement (ISAP), Member of ASTM, Association of Asphalt Pavement Technologists, and American Society of Civil Engineers, Pavement Mechanics Committee of Engineering Mechanics Institute (2003-present)

Co-chair, Annual Paving and Transportation Conference, New Mexico, 2010-present; Editorial Board, International Journal of Pavements, 2009-present; Editorial Board, International Journal of geotechnical Engineering, 2012-present

Developed Methods and Specs (permeability, rutting) for Oklahoma Department of Transportation (2000-2002)

Organizer, National Science Foundation's International Workshop on *Energy and Sustainability in the Development of Asphalt Pavements and Paving Materials*, June7-9 2010, Xian, China; Organizer, Symposium: 'Pavement Materials and Modeling at Multi-scale' at the Engineering Mechanics Conference, August 9-11, 2010, Uni. of Southern California, CA

### **REVIEW SERVICE**

Panelist, National Science Foundation's Structural Materials and Mechanics program (2008-present); Session Chair, Earth and Space Conference 2008, Long Beach, CA; Technical Advisory Panel Member, Texas Department of Transportation, 2003–2004

Reviewer, ASCE Journal of Materials in Civil Engineering, ASCE Journal of Transportation Engineering, International Journal of Geomechanics, ASTM Journal of Testing and Evaluation, Journal of Plasticity, International Journal of Pavement Engineering, International Journal of Pavements, International Journal of Road Materials and Pavement Design (last 10 years)

Editor, International Association for Computer Methods and Advances in Geomechanics Newsletter, 2010present

Expert and Management Committee of the COST project "Civil Engineering Applications of Ground Penetrating Radar." European Cooperation in Science and Technology (COST)