October 27, 2022

ACADEMIC RESUME

Eyal Levenberg

The Technical University of Denmark (DTU).
DTU Sustain – Department of Environmental and Resource Engineering, Section for Geotechnics and Geology.
Room 145, Building 119, Nordvej, 2800 Kgs. Lyngby, Denmark.

Office Tel:	(+45)4525-1907
Work email:	eylev@byg.dtu.dk
Private email:	eyal.levenberg@gmail.com
Website:	dtu.academia.edu/EyalLevenberg
ORCID:	0000-0003-1188-8458

Birthdate:	April 3, 1971
Birthplace:	Haifa, Israel
Marital status:	Married, three adult children
Military status:	Major (retired), Israeli Air Force

ACADEMIC DEGREES

Ph.D. (12/2006): Technion–IIT, Faculty of Civil and Environmental Engineering.

M.Sc. (6/2000): Tel Aviv University, Faculty of Management (*magna cum laude*).

B.Sc. (4/1993): Technion–IIT, Faculty of Civil Engineering (*cum laude*).

ACADEMIC APPOINTMENTS

a. DTU

3/22–present: Associate Professor, Sustain.

3/16–2/22: Associate Professor, Civil Engineering.

b. Technion-IIT

3/09–2/16: Assistant Professor, Faculty of Civil and Environmental Engineering (tenured from 3/15).

3/01–9/03: Teaching Assistant, Faculty of Civil Engineering.

c. University of Minnesota

7/15–8/15: J.S. Braun / Braun Intertec Visiting Associate Professor, Department of Civil, Environmental, and Geo-Engineering.

d. University of Pisa

1/09–2/09: Visiting Researcher, Department of Civil Engineering.

e. Purdue University
12/06–12/08: Postdoctoral Researcher, School of Civil Engineering.

PROFESSIONAL EXPERIENCE

4/99–12/17: Owner, founder, and manager of E.L. Engineering, a consulting firm with the following core activities: pavement design, geotechnical design, and on-site supervision of construction work. Major clients (Israeli): Department of Transportation, Department of Defense, Aviation Administration, Air-Industries, Port Authority, and Tel Aviv Municipality.

4/93–4/99: Engineering officer, Israeli Air Force, Civil Engineering Division. Key roles: project execution engineer, member of the project management branch, and member of the runway staff. Main activities: management of construction projects, management of design projects, physical design of airfield infrastructure (runways, taxiways, parking aprons), project cost estimation, and site supervision.

1/93–3/93: Industrial maintenance electrician, Elite Candy Factory, Nazareth, Israel. Main activities: assembly of electrical distribution boards, fine-tuning of sensory gear (lasers, metal detectors), and general soldering.

RESEARCH INTERESTS

1. Pavement mechanics and sensing technology.
2. Inverse analysis of in situ pavement properties and digital twins.
3. Constitutive modeling and characterization of asphalt concrete.

TEACHING EXPERIENCE

a. DTU (*Spring 2019 and onward*)
1. Railway Design and Maintenance (11404) [G, course responsible]

b. DTU (*Spring 2016 and onward*)
2. Basic course in road pavements (11450) [UG]
3. Pavement mechanics (11451) [G]
4. Basic Course in Traffic and Roads (42872) [UG, pavements part]

c. Technion-IIT (*Spring 2009 to Winter 2015-2016*)
5. Introduction to highway design and pavements (014718) [UG, pavements part]
6. Introduction to pavement design (014731) [UG]
7. Air transportation (014717) [UG, pavements part]
8. Final project in pavement design (014724) [UG]
9. Fundamentals of rigid pavement design (016712) [G+UG]
10. Advanced asphalt pavement topics (019702) [G]

11. Laboratory for pavement materials 1 (019704) [G]
12. Laboratory for pavement materials 2 (019705) [G]

d. Tongji University (*Summer 2012*)
13. Airport planning and design [UG, pavements part].
14. Airport engineering [G, pavements part].

UNIVERSITY ACTIVITIES

a. DTU

9/22–present: Head of Section – Geotechnics and Geology.

1/21–present: Head of Studies – Civil Engineering M.Sc. education program.

1/22–3/22: Head of the advisory committee to the Civil Engineering Ph.D. school.

2/17–present: Member of a working group that guides the establishment of two new teaching and research facilities: a concrete and materials laboratory, and a pavement laboratory.

1/17–present: Railtech DTU coordination group member.

5/16–12/21: Ph.D. coordination group member for the Department of Civil Engineering.

b. Technion-IIT

1/13–3/16: Adopted by the Washington DC Chapter of the American Technion Society (ATS) for promoting the Technion and, particularly, the Faculty of Civil and Environmental Engineering. Activities include periodic presentations to ATS visitors, participation in trimonthly video logs, and hosting of donors.

10/10–1/16: Faculty council academic secretary, Faculty of Civil and Environmental Engineering.

10/10–3/16: Safety committee member, Division of Transportation and Geo-Information Engineering.

10/09–3/16: Faculty undergraduate teaching committee member, Faculty of Civil and Environmental Engineering.

10/09–3/16: Academic secretary and teaching committee member, Division of Transportation and Geo-Information Engineering.

PUBLIC PROFESSIONAL ACTIVITIES

a. Editorial board member

3/16–present: *Road Materials and Pavement Design* (Taylor & Francis).

2/15–present: *KSCE Journal of Civil Engineering* (Journal of the Korean Society of Civil Engineers, Springer).

5/13–present: *Advances in Civil Engineering Materials* (ASTM).

1/12–12/15: *International Journal of Transportation Science and Technology* (Elsevier).

b. Membership in international committees

1/11–present: Testing and Characterization of Sustainable Innovative Bituminous Materials and Systems, Technical Committee 237-SIB, International Union of Laboratories and Experts in Construction Materials, Systems and Structures (RILEM).

7/09–12/10: Advanced Testing and Characterization of Bituminous Materials, Technical Committee 206, International Union of Laboratories and Experts in Construction Materials, Systems and Structures (RILEM).

4/09–12/18: Characteristics of Bituminous Paving Mixtures to Meet Structural Requirements, AFK50, Transportation Research Board (TRB), National Academy of Science.

1/05–present: Constitutive Modeling of Asphaltic Mixes, Working Group No. 3, International Society for Asphalt Pavements (ISAP).

c. Referee for journals

1. Advances in Civil Engineering (Hindawi).
2. Advances in Civil Engineering Materials (ASTM).
3. Advances in Structural Engineering (SAGE).
4. Construction & Building Materials (Elsevier).
5. International Journal of Pavement Engineering (Taylor & Francis).
6. International Journal of Transportation Science and Technology (Elsevier).
7. Journal of Geotechnical and Geoenvironmental Engineering (ASCE).
8. Journal of Materials in Civil Engineering (ASCE).
9. Journal of Testing and Evaluation (ASTM).
10. Journal of the Association of Asphalt Paving Technologists (AAPT).
11. Journal of the Transportation Research Board (TRB).
12. Journal of Transportation Engineering, Part B: Pavements (ASCE).
13. KSCE Journal of Civil Engineering (Springer).
14. Materials and Structures (Springer).
15. Measurement (Elsevier).
16. Mechanics of Time-Dependent Materials (Springer).
17. Road Materials and Pavement Design (Taylor & Francis).
18. Sensors (MDPI).
19. Transportation Research Part C: Emerging Technologies (Elsevier)

d. Expert panel appointments

1. Member of the Ph.D. examination committee for Shmuel Pinkert (Technion-IIT, 2/12).
2. Chairman of the Ph.D. thesis assessment committee of Asmus Skar (DTU, 3/17).
3. Chairman of the Ph.D. thesis assessment committee of Tobias Orlander (DTU, 6/18).

4. Member of the Ph.D. examination committee for Jean-Marie Roussel (ENTPE, 11/20).
5. Member of the Ph.D. examination committee for Natasha Bahrani (École Centrale de Nantes, 1/21).
6. Member of the Ph.D. examination committee for Lisa Lövqvist (KTH Royal Institute of Technology, 6/21).

e. Assessment of new faculty

1. Member of the hiring committee for a new associate/assistant professor in geotechnical engineering (DTU, 4/16).
2. Member of the hiring committee for a new associate/assistant professor in engineering geology (DTU, 7/17).
3. Member of assessment committee for a new assistant professor in sustainable road infrastructure (KTH, 10/19).
4. Member of the hiring committee for two new assistant professors in structural engineering (DTU, 8/20).
5. Member of assessment committee for a new associate professor in road planning and construction (NTNU, 4/22).

MEMBERSHIP IN PROFESSIONAL SOCIETIES

2009–2017: International Union of Laboratories and Experts in Construction Materials, Systems, and Structures (RILEM).

2007–present: Fellows Alumni Association, International Road Federation (IRF).

2005–present: The International Society for Asphalt Pavements (ISAP).

2003–2004: International Concrete Repair Institute (ICRI).

2002–2015: The Israel Society for Theoretical and Applied Mechanics (ISTAM).

2002–2005: The Israeli Association of Construction and Infrastructure.

1993–present: Registered civil engineer in Israel.

FELLOWSHIPS, AWARDS, AND HONORS

a. Technion-IIT

2013: Faculty award for teaching excellence – A. Arenson Prize. Granted, based on high student rankings in teaching transportation-related courses during the preceding spring and winter semesters.

2012: Technion award for teaching excellence – top 4% of entire university based on student ranking (spring semester, Introduction to Pavement Design).

2007: International Road Federation (IRF) – Executive Fellowship Award ($15k).

1992: The Esther and Mordechai Rubinstein Prize for Excellence in Engineering Economics course, Faculty of Civil Engineering.

1992: The Yitzhak Alpan Prize for Excellence in Geomechanics course, Faculty of Civil Engineering.

INSTRUCTION AND SUPERVISION

Postdocs

1. Sebastian Andersen, DTU Civil Engineering (2016–2018).
2. Asmus Skar, DTU Civil Engineering (2019–2020).

Ph.D. students

1. Renato Bacci (2010), "Viscoelastoplastic Characterization of Bituminous Mixtures by means of the Diametral Compression Test," The University of Pisa (with M. Losa and F. Lancieri).
2. Tulika Bose (2020), "Railway Substructure Systems Based on Asphalt," DTU (with V. Zania).
3. Quentin Adam (2022), "Thermomechanical Modelling and Analysis of Pavements with Embedded Heating Ribbons," DTU (with T. Ingeman-Nielsen and A. Skar).

In progress

4. Julius Nielsen, "Modelling and Analysis of Pavements with Asphalt Reinforcement," DTU (with A. Skar and K. Olsen).

Academic guidance

5. Stine Madsen, a Ph.D. student at DTU Mechanical Engineering (2016–2017).
6. Chiara Pratelli, a Ph.D. student at the University of Pisa (2017–2018).
7. Natasha Bahrani, a Ph.D. student at the École Centrale de Nantes (2019–2020).
8. Pawan Deep, a Ph.D. student at the University of Nottingham (2019–2021).
9. Zhao Du, a Ph.D. student at Tongji University (2021 – 2022).

M.Sc. students

1. Nir Michaeli (2015), "Viscoelastic Characterization of Asphalt-Aggregate Mixes with the Indirect Tensile Apparatus," Technion–IIT. Work received the Golan Family award for research excellence in the study field of transportation infrastructure.
2. Oded Drori (2017), "Characterization of Moving Surface Loads with Buried Accelerometers," Technion–IIT.
3. Alexander S. Molin (2017), "Assessment of Layered Elastic Theory as a Pavement Model," The University of Bologna (with C. Sangiorgi).
4. Pavlos Zoulis and Niko Athanasiadis (2019), "Viscoelastic Pavement Modeling for use with the Dynatest Raptor," DTU (with A. Skar).
5. Julius Nielsen (2019), "Inferring Pavement Layer Properties from Roadside Sensors," DTU (with A. Skar).
6. Fotios Michopoulos (2020), "Investigation of Sand Bed Settlements below the Guldborgsund Immersed Tunnel," DTU (with P.B. Laursen, K. Riis, A.L. Schaarup, and A. Skar).

7. Yuxuan Liu (2020), "Measuring the Ice Melting Rate of Deicers with a Calorimeter," Nordic Master in Cold Climate Engineering-Land track, Joint NTNU-DTU degree (with A. Klein-Paste and A. Skar).
8. Robert S. Kjønås (2020), "Determination of Soil Deformation and Strength Characteristics using a Flexible Strain Sensing Plate," DTU (with A. Skar and V. Zania).
9. Lucija Barisic (2020), "A Digital Twin of an Asphalt Road," DTU (with A. Skar).
10. Valeria Beghin (2021), "Analysis of Traffic Speed Deflectometer Measurements performed under Different Temperature Conditions, Joint UNIPD-DTU degree (with A. Skar, M. Pasetto, and M. Pettinari).
11. Manuel C. Pena (2021), "Mechanistic Analysis of Load Transfer and Concrete Fatigue in Slab Track Constructions for Light Rail Applications," DTU (with A. Skar and M.D.M.M. Martinez).
12. Mantas Hesthaven (2021), "Mechanistic Analysis of Asphalt Pavements under Tracked Vehicles," DTU (with A. Skar, S. Andersen, and H.H. Thustrup).
13. Ivan E. Martos (2022), "Assessment of Ground-Borne Vibrations from Urban Rail Transit," DTU (with A. Skar, S. Andersen, M.D.M.M. Martinez, and P.S. Zuriaga).
14. David L. Valero, (2022), "Analysis of Gauge Narrowing at Railroad Turnouts due to Undetected Ballast Particles," DTU (with P.S. Zuriaga, T. Orlander, R. da Silva, and M. Schwartz).

In progress

15. Rasmus B. Kindler, Lotte M.F. (2023), "Hansen, and Jonas L. Brøndmark. Investigation of Asphalt Pavements Loaded by Heavy Off-Road Vehicles," DTU (with Nielsen, J., Baltzer, S., Thustrup, H.H., and Hesthaven, M.)

B.Sc. students

1. Britt M.L. Christensen (2016), "A Comparison of Traffic Speed Deflectometer and Falling Weight Deflectometer Data," DTU (with M. Pettinari).
2. Pernille Jørgensen and Rasmus N.H. Perslev (2020), "Mechanical Response of Ballastless Railway Tracks," DTU (with M. Schwartz, T. Bose, and V. Zania).
3. Clara K.N. Koch (2022), "Inverse Analysis of a Clay Subgrade Modulus Under an Instrumented Road," (with A. Skar and J. Nielsen).
4. Anna Bramsløw and Nikolai B. Jensen (2022), "Modeling Road Energy Efficiency under Real Driving Conditions," DTU (with F.C. Pereira and M. Pettinari).

M.E. and B.E. students

1. Dori Alkalay (2015), "Assessing the Ability of a Multilayered Elastic Model to Reproduce the Mechanical Response of an Asphalt Pavement," Technion–IIT.
2. Andreas V. Bachmann and Jacob E. Cronholm (2017), "Mechanical Characterization of New Asphalt Concrete for Pavements with Reduced Transport Emissions," DTU (with M. Pettinari).
3. Knud K. Jensen and Jacob W. Receveur (2021), "Application of Dynamic Cone Penetrometer to Road Geotechnics," DTU (with P.K. Jensen).

EXTERNAL FUNDING

a. Technion-IIT

2010: $200k (Co-PI) "Comparative Study of the Performance of Dense graded vs. S–Graded Asphalt Mixtures," Israeli National Roads Company (with J. Uzan, PI, and A. Sidess, Co-PI).

2011: $40k (PI) "Advanced Mechanical Characterization of Unbound Granular Pavement Materials," German–Israeli Foundation for Scientific Research and Development - Young Scientists' Program.

$65k (PI) "The Vacuum Sealing Method for Determining Bulk Density of Compacted Asphalt Mixtures," Israeli National Roads Company.

$500k (PI) "Warm Mix Asphalt – Phase I," Israeli National Roads Company (initial collaboration with Aram Engineers Ltd).

$200k (PI) "Prototype Development of Smart Pavement Sensors," Israeli National Roads Company.

2012: $67k (PI) "Changeover from Marshall to Gyratory Compaction – Phase I," Israeli National Roads Company.

2015: $800k (PI) "Development of Smart Pavement Sensors – 2nd Generation Wisdom Stone," Israeli National Roads Company (funding awarded).

b. DTU

2016: $290k (WP Leader) "Advanced and Widely Available Pavement Assessment Tools for Infrastructure Evaluation," Innovation Fund Denmark and Dynatest Ltd.

$1380k (Co-leader in two WPs) "Road2Rails," Innovation Fund Denmark, Atkins Consulting, Arkil Construction, Banedanmark, and the Danish Technological Institute.

2017: $27k (PI) "Monitoring Seabed Subsidence and Identifying Reservoir Drawdown Zone with Optical Fiber Sensing – A Feasibility Study," The Danish Hydrocarbon Research and Technology Center (with I. Orozova-Bekkevold and K. Nielsen).

2018: $12k (PI) "FTI HeatRoads," EUopSTART grant from the Danish Ministry of Higher Education and Science (with J. Alex Jørgensen).

$11k (PI) "Consultancy for Budapest Airport," project report compiled with Sweco pavement consultants.

$2775k (project partner) "Snowless," EU H2020 Fast Track to Innovation program, with: San Hitech (Israel), Heating Solutions International (Netherlands), and Volkmann & Rossbach (Germany).

2019: $2740k (project partner) "LiRa," Innovation Fund Denmark, Grand solutions program, with the Danish Road Directorate, GreenMobility, DTU Compute, and Sweco.

$150k (PI) "Modelling and Analysis of Pavements with Asphalt Reinforcement," Industrial Ph.D. Project with S&P Reinforcement Nordic.

2020: $4693k (Project Beneficiary) "European Training Network on Sustainable Multi-functional Automated Resilient Transport Infrastructures (SMARTI)," Coordinated by the University of Nottingham (replaced Dynatest on 2/2020).

$14k (co-PI) "Real-time Pavement Monitoring using Thermal Sensing Technology and Data," Invest in Arup Europe Research Fund (Application #27881 by A. Boyd).

$8k (PI) "Support in Coding and Documentation to Analyze Farming Vehicles' Effects on Asphalt Pavement," The Danish Road Authority – Pavements Department.

2021: $20k (PI) "Developing and Validating a Computer Code suited for Evaluating the Effects of Belted Farming Vehicles on Asphalt Pavements," The Danish Road Authority – Pavements Department.

PUBLICATIONS

Author names in *italic* font indicate *students, research assistants, industry people,* or *postdocs*; author names in normal font style indicate other academics.

Theses

1. Levenberg, E. (1999), "Testing 'Maof's' Market Efficiency using Neural Networks," M.Sc. Thesis, Tel Aviv University, Faculty of Management, Advisors: Prof. Avner Kalay and Dr. Moshe Leshno.

2. Levenberg, E. (2006), "Constitutive Modeling of Asphalt-Aggregate Mixes with Damage and Healing," Ph.D. Dissertation, Technion–IIT, Faculty of Civil and Environmental Engineering, Advisor: Prof. Jacob Uzan.

Refereed papers in professional journals

1. Uzan, J. and Levenberg, E. (2001), "Strain Measurements in Asphalt Concrete Specimens towards the Development of a Fracture Model," *International Journal of Pavement Engineering*, 2(4), 243–258.

2. Levenberg, E. and Uzan, J. (2004), "Quantifying the Confidence Levels of Deformation Measurements in Asphalt Concrete," *Journal of Testing and Evaluation* (ASTM), 32(5), 358–365.

3. Levenberg, E. and Uzan, J. (2004), "Triaxial Small-Strain Viscoelastic-Viscoplastic Modeling of Asphalt Aggregate Mixes," *Mechanics of Time-Dependent Materials*, 8(4), 365–384.

4. Uzan, J. and Levenberg, E. (2007), "Advanced Testing and Characterization of Asphalt Concrete Materials in Tension," *International Journal of Geomechanics* (ASCE), 7(2), 158–165.

5. Levenberg, E. and *Shah, A.* (2008), "Interpretation of Complex Modulus Test Results for Asphalt-Aggregate Mixes," *Journal of Testing and Evaluation* (ASTM), 36(4), 326–334.

6. Levenberg, E. (2009), "Viscoplastic Response and Modeling of Asphalt-Aggregate Mixes," *Materials and Structures* (RILEM), 42(8), 1139–1151.

7. Levenberg, E. (2011), "Smoothing Asphalt Concrete Complex Modulus Test Data," *Journal of Materials in Civil Engineering* (ASCE), 23(5), 606–611.

8. Levenberg, E. and Uzan, J. (2012), "Exposing the Nonlinear Viscoelastic Behavior of Asphalt-Aggregate Mixes," *Mechanics of Time-Dependent Materials*, 16(2), 129–143.

9. Levenberg, E. (2012), "Inferring Pavement Properties using an Embedded Accelerometer," *International Journal of Transportation Science and Technology*, 1(3), 229–246.

10. Levenberg, E. (2013), "Inverse Analysis of Viscoelastic Pavement Properties using Data from Embedded Instrumentation," *International Journal for Numerical and Analytical Methods in Geomechanics*, 37(9), 1016–1033.

11. Levenberg, E. and *Michaeli, N.* (2013), "Viscoelastic Characterization of Asphalt-Aggregate Mixes in Diametral Compression," *Road Materials and Pavement Design*, 14(S1), 105–119.

12. Levenberg, E. (2013), "Analysis of Pavement Response to Subsurface Deformations," *Computers and Geotechnics*, 50, 79–88.

13. Levenberg, E. and *Manevich, A.* (2013), "Determination of Bulk Volume of Asphalt Specimens with Image-based Modeling," *International Journal of Transportation Science and Technology*, 2(1), 1–13.

14. Levenberg, E. (2013), "Direct Estimation of Air Void Content from Gyratory Compaction History," *International Journal of Recent Trends in Civil Engineering & Technology*, 3(1), 14–20.

15. *Varma, S.*, Kutay, M.E., and Levenberg, E. (2013), "Viscoelastic Genetic Algorithm for Inverse Analysis of Asphalt Layer Properties from Falling Weight Deflections," *Transportation Research Record: Journal of the Transportation Research Board* (TRB), 2369, 38–46.

16. *Faturechi, R.*, Levenberg, E., and Miller-Hooks, E. (2014), "Evaluating and Optimizing Resilience of Airport Pavement Networks," *Journal of Computers and Operations Research*, 43, 335–348.

17. Levenberg, E. (2014), "Viscoelastic-Viscoplastic Characterization of Unbound Granular Material," *Advances in Civil Engineering Materials* (ASTM), 3(1), 21–42.

18. Levenberg, E. and *Garg, N.* (2014), "Estimating the Coefficient of At-Rest Earth Pressure in Granular Pavement Layers," *Transportation Geotechnics*, 1(1), 21–30.

19. Levenberg, E. (2014), "Estimating Vehicle Speed with Embedded Inertial Sensors," *Transportation Research Part C*, 46, 300–308.

20. *Uchida, S.*, Levenberg, E., and Klar, A. (2015), "On-Specimen Strain Measurement with Fiber Optic Distributed Sensing," *Measurement*, 60, 104–113.

21. Levenberg, E. (2015), "Viscoelastic Tension-Compression Nonlinearity in Asphalt Concrete," *Journal of Materials in Civil Engineering* (ASCE), 27(12), 04015048(1–9).

22. Levenberg, E. (2015), "Intrinsic Roughness Mitigation of Pavements on Expansive Soils – An Analytic Investigation," *International Journal of Pavement Research and Technology* (CSPE), 8(3), 167–171.

23. Levenberg, E. (2015), "Modeling Asphalt Concrete Viscoelasticity with Damage and Healing," *International Journal of Pavement Engineering*, 18(9), 811–823.

24. Levenberg, E. (2015), "Backcalculation with an Implanted Inertial Sensor," *Transportation Research Record: Journal of the Transportation Research Board* (TRB), 2525, 3–12.

25. Levenberg, E. (2016), "Viscoelastic Characterization of Asphalt Concrete in Diametral Tension-Compression," *Journal of Materials in Civil Engineering* (ASCE), 28(1), 04015073(1–9).

26. *Hamam, T.*, Levenberg, E., and Zelnik-Manor, L. (2016), "Development of an Optical Displacement Transducer for Routine Testing of Asphalt Concrete," *Journal of Materials in Civil Engineering* (ASCE), 28(9), 04016066.

27. Klar, A., *Uchida, S.*, and Levenberg, E. (2016), "In Situ Stiffness Profiling using High-Resolution Fiber-Optic Distributed Sensing," *Journal of Geotechnical and Geoenvironmental Engineering* (ASCE), 142(8), 04016032(1–9).

28. Levenberg, E., Miller-Hooks, E., *Asadabadi, A.*, and *Faturechi, R.* (2016), "Resilience of Networked Infrastructure with Evolving Component Conditions," *Journal of Computing in Civil Engineering* (ASCE), 31(3), 04016060(1–9).

29. *Stern, Y., London, Y., Preter, E., Antman, Y., Diamandi, H.H., Silbiger, M., Adler, G.*, Levenberg, E., *Shalev, D.*, and Zadok, A. (2017), "Brillouin Optical Correlation Domain Analysis in Composite Material Beams," *Sensors*, 17, 2266(2–14).

30. *Madsen, S.S.* and Levenberg, E. (2018), "Dynamic Backcalculation with Different Load-Time Histories," *Road Materials and Pavement Design*, 19(6), 1314–1333.

31. *Bose, T.*, Levenberg, E., Zania, V. (2018), "Analyzing Track Responses to Train Braking," *Journal of Rail and Rapid Transit*, 232(7), 1984–1993.

32. Levenberg, E., *Pettinari, M., Baltzer, S., and Christensen, B.M.L.* (2018), "Comparing Traffic Speed Deflectometer and Falling Weight Deflectometer Data," *Transportation Research Record: Journal of the Transportation Research Board* (TRB), 2672(40), 22–31.

33. *Skar, A.*, Klar, A., and Levenberg, E. (2019), "Load-Independent Characterization of Plate Foundation Support Using High-Resolution Distributed Fiber-Optic Sensing," *Sensors* 19 (3518), doi:10.3390/s19163518.

34. Khazanovich, L. and Levenberg, E. (2020), "Analytical Solution for a Viscoelastic Plate on a Pasternak Foundation," *Road Materials and Pavement Design*, 21(3), 800–820.

35. *Andersen, S.*, Levenberg, E., and *Andersen, M.B.* (2020), "Efficient Reevaluation of Surface Displacements in a Layered Elastic Half-space," *International Journal of Pavement Engineering*, 21(4), 408–415.

36. Levenberg, E. and Rocchi, I. (2020), "On the Thermal Sensitivity of Unbound Granular Pavement Layers," *International Journal of Pavement Research and Technology*, 13(1), 32–39.

37. Levenberg, E. and Orozova-Bekkevold, I. (2020), "An Offshore Reservoir Monitoring System based on Fiber-Optic Distributed Sensing of Seabed Strains," *First Break*, 38, 35–41.

38. *Bose, T.* and Levenberg, E. (2020), "A Priori Determination of Track Modulus Based on Elastic Solutions," *KSCE Journal of Civil Engineering*, 24(10), 2939–2948.

39. *Bose, T.*, Zania, V., and Levenberg, E. (2020), "Experimental Investigation of a Ballastless Asphalt Track Mockup under Vertical Loads," *Construction and Building Materials*, 261, 119711(1–15).

40. *Skar, A.*, Levenberg, E., *Andersen, S.*, and *Andersen, M.B.* (2021), "Analysis of a Moving Measurement Platform based on Line Profile Sensors for Project-Level Pavement Evaluation," *Road Materials and Pavement Design*, 22(9), 2069–2085.

41. *Bose, T.*, Levenberg, E., and Zania, V. (2021), "Numerical Modeling of a Ballastless Track Mockup based on Asphalt," *Construction and Building Materials*, 274, 121852(1–18).

42. Levenberg, E. and *Adam, Q.F.* (2021), "Construction of an Electrically Heated Asphalt Road based on Ribbon Technology," *Transportation Research Record: Journal of the Transportation Research Board* (TRB), 2675(9), 652–663.

43. Levenberg, E., Skar, A., *Pour, S.M.*, Kindler, E., *Pettinari, M.*, *Bajic, M.*, Alstrøm, T.S., and *Schlotz, U.* (2021), "Live Road Condition Assessment with Internal Vehicle Sensors," *Transportation Research Record: Journal of the Transportation Research Board* (TRB), 2675(10), 1442–1452.

44. Levenberg, E. and Skar, A. (2022), "Analytic Pavement Modeling with a Fragmented Layer," *International Journal of Pavement Engineering*, 23(4), 1108–1120.

45. *Nielsen, J.*, Levenberg, E., and Skar, A. (2022), "Mechanistic Modelling of Grid-Reinforced Milled-and-Overlaid Asphalt Pavements," *International Journal of Pavement Engineering*, doi:10.1080/10298436.2022.2072502.

46. *Adam, Q.F.*, Levenberg, E., and Ingeman-Nielsen, T. (2022), "Protecting Asphalt Pavements against Frost Action with an Electrical Heating System: Numerical Investigation." *Journal of Cold Regions Engineering* (ASCE), 36(4), 04022013.

47. *Adam, Q.F.*, Levenberg, E., Ingeman-Nielsen, T., and Skar, A. (2023), "Modeling the Use of an Electrical Heating System to Actively Protect Asphalt Pavements against Low-temperature Cracking," *Cold Regions Science and Technology*, 205, 103681.

Under review

48. *Bajic, M.*, *Pour, S.M.*, Skar, A., *Pettinari, M.*, Levenberg, E., and Alstrøm, T.S. "Road Roughness Estimation using Machine Learning."

49. Levenberg, E. "Estimating the Tire-Pavement Grip Potential from Vehicle Vibrations."

50. Levenberg, E., Hesthaven, M., and Andersen, S. "A Mechanistic Code for Asphalt Pavements Loaded by Farming Vehicles."

Refereed publications in conference proceedings

1. Levenberg, E. and Uzan, J. (2007), "Uniqueness of the Viscoelastic Time-Function for Asphalt-Aggregate Mixes," Proceedings of the International Conference on Advanced Characterization of Pavements and Soil Engineering Materials, Vol. 1, Loizos, A. Scarpas, T. and Al-Qadi, I. (eds.), Taylor & Francis Group, London, United Kingdom, pp. 35–48.

2. Levenberg, E., *McDaniel, R.S.*, and Pellinen, T.K. (2008), "Backcalculation of Layer Moduli using Time History of Embedded Gauge Readings," Proceedings of the 3rd International Conference on Accelerated Pavement Testing, Madrid, Spain, October 2008.

3. Levenberg, E. and Uzan, J. (2009), "Viscoelastic Response of Asphalt-Aggregate Mixes to Transient Confining Conditions," Proceedings of the 7th International RILEM Symposium on Advanced Testing and Characterization of Bituminous Materials, Vol. 1, Loizos, A. et al. (eds.), Taylor & Francis, London, UK, pp. 541–550.

4. Levenberg, E. (2009), "Validation of NCAT Structural Test Track Experiment using Purdue/INDOT APT Facility," Proceedings of the 8th International Conference on the Bearing Capacity of Roads, Railways and Airfields, Vol. 2, Tutumluer, E. and Al-Qadi, I. (eds.), Taylor & Francis, London, UK, pp. 1361–1371.

5. Levenberg, E. (2009), "Backcalculation of Anisotropic Pavement Properties using Time History of Embedded Gauge Readings," Selected Papers From the 2009 GeoHunan International Conference: Asphalt Material Characterization, Accelerated Testing, and Highway Management, ASCE Geotechnical Special Publication (GSP) 190, Walubita et al. (eds.), American Society of Civil Engineers, Reston, Virginia, pp. 79–85.

6. Levenberg, E., *McDaniel, R.S.*, and *Nantung, T.E.* (2012), "How Low is Too Low? Assessing the Risk of Low Air Voids using Accelerated Pavement Testing," Collection of Papers from the 4th International Conference on Accelerated Pavement Testing: Advances in Pavement Design through Full-scale Accelerated Pavement Testing, Jones, D. (ed.), Harvey, J. et al. (co-eds.), CRC Press, Leiden, The Netherlands, pp. 249–256.

7. Levenberg, E., *Shmuel, I., Orbach, M.,* and *Mizrachi, B.* (2014), "Wireless Pavement Sensors for Wide-Area Instrumentation," Proceedings of the 3rd International Conference on Transportation Infrastructure (ICTI): Sustainability, Eco-efficiency and Conservation in Transportation Infrastructure Asset Management, Losa, M. and Papagiannakis, T. (eds.), CRC Press, Leiden, The Netherlands, pp. 307–319.

8. Levenberg, E. (2014), "Testing Asphalt Concrete in Diametral Tension-Compression," Proceedings of the 12th International Conference on Asphalt Pavements (ISAP), Vol. 2, Kim, Y.R. (ed.), Taylor & Francis, London, UK, pp. 1673–1683.

9. *London, Y., Antman, Y., Silbiger, M., Efraim, L., Froochzad, A., Adler, G.*, Levenberg, E., and Zadok, A. (2015), "High-Resolution Brillouin Analysis of Composite Materials Beams," Proceedings of the 24th International Conference on Optical Fibre Sensors, Vol. 9634(6N), Kalinowski, H.J. et al. (eds.), Society of Photo-Optical Instrumentation Engineers (SPIE), Bellingham, Washington, pp. 1–4.

10. Klar, A., *Uchida, S.,* and Levenberg, E. (2015), "In Situ and Laboratory Mechanical Characterization Using High-Resolution Fiber Optic Distributed Sensing," Proceedings of the 6th International Symposium on Deformation Characteristics of Geomaterials, Vol. 6, Rinaldi, V.A. et al. (eds.), IOS Press Series on Advances in Soil Mechanics and Geotechnical Engineering, Amsterdam, The Netherlands, pp. 382–389.

11. *Drori, O.* and Levenberg, E. (2016), "Characterization of a Traveling Object with an Underground Cluster of Inertial Sensors," Proceedings of the International Conference on Smart Infrastructure and Construction, Mair, R.J. et al. (eds.), Institution of Civil Engineers (ICE) Publishing, London, United Kingdom, pp. 349–356.

12. Klar, A., Levenberg, E., Tur. M., and Zadok, A. (2016), "Sensing for Smart Infrastructure: Prospective Engineering Applications," Proceedings of the International Conference on Smart Infrastructure and Construction, Mair, R.J. et al. (eds.), Institution of Civil Engineers (ICE) Publishing, London, United Kingdom, pp. 289–295.

13. Levenberg, E. (2016), "Viscoelastic Pavement Modeling with a Spreadsheet," Proceedings of the 8th International Conference on Maintenance and Rehabilitation of Pavements (Mairepav8), Research Publishing, Singapore, pp. 746–755.

14. *Andersen, S.*, Levenberg, E., and *Andersen, M.B.* (2017), "Inferring Pavement Layer Properties from a Moving Measurement Platform," Proceedings of the 10th International Conference on the Bearing Capacity of Roads, Railways and Airfields, Loizos A. et al. (eds.), CRC Press/Taylor & Francis Group, pp. 675–682.

15. *Bose, T.*, Levenberg, E., and Zania, V. (2018), "Analysis of Track Responses to Train Braking (extended abstract)," Proceedings of the 97th Annual Meeting of the Transportation Research Board (paper 18-03146).

16. *Skar, A.*, Levenberg, E., and Ingeman-Nielsen, T. (2018), "Mechanistic Analysis of Frost Action under Pavements," Proceedings of the ARTEK International Conference (AIC 2018) on Transportation Infrastructure Engineering in Cold Climates, May 1-3, Sisimiut, Greenland, pp. 76–77.

17. *Bose, T.*, Zania, V., and Levenberg, E. (2018), "Numerical Modelling of an Experimental Setup Simulating Asphalt Overlayment Tracks (extended abstract)," Fourth International Conference on Railway Technology: Research, Development and Maintenance (Railways 2018).

18. *Bose, T.* and Levenberg, E. (2019), "Determination of Track Modulus Based on Elastic Solutions (extended abstract)," Proceedings of the 98th Annual Meeting of the Transportation Research Board (paper 19-03737).

19. Levenberg, E. (2019), "Time-Dependent Resilient Response of Unbound Granular Materials," Proceedings of the 17th European Conference on Soil Mechanics and Geotechnical Engineering (XVII ECSMGE).

20. Levenberg, E., Klar, A. A., and Skar, A. (2020), "Soil Support Characterization in Slab-on-Grade Constructions with Fiber-Optic Distributed Strain Sensing," Proceedings of Geo-Congress 2020, doi:10.1061/9780784482780.036.

21. *Nielsen, J.*, Levenberg, E., and Skar, A. (2020), "Inference of Pavement Properties with Roadside Accelerometers," Proceedings of the 9th International Conference on Maintenance and Rehabilitation of Pavements (Mairepav9), Raab, C. (ed.), Springer Nature, Switzerland, pp. 719–728, doi:10.1007/978-3-030-48679-2_67.

22. *Bahrani, N.*, Levenberg, E., Blanc, J., and Horny, P. (2020), "Inverse Analysis of Pavement Layer Moduli based on Data Collected by Buried Accelerometers and Geophones," Proceedings of 6th APT Conference: Accelerated Pavement Testing to Transport Infrastructure Innovation, Chabot et al. (eds.), Lecture Notes in Civil Engineering, Vol. 96, Springer Nature, Switzerland, pp. 592–601, doi:10.1007/978-3-030-55236-7_61.

23. Skar, A., *Nielsen, J.*, and Levenberg, E. (2021), "Pavement Instrumentation with Near Surface LVDTs," Advances in Materials and Pavement Performance Prediction II: Contributions to the 2nd International Conference on Advances in Materials and Pavement Performance Prediction (AM3P 2020), Anupam et al. (eds.), CRC Press/Taylor & Francis Group, pp. 232–235.

24. Kutay, M.E., *Hasnat, M.*, and Levenberg, E. (2021), "Layered Nonlinear Cross Anisotropic Model for Pavements with Geogrids," Advances in Materials and Pavement Performance Prediction II: Contributions to the 2nd International Conference on Advances in Materials and Pavement Performance Prediction (AM3P 2020), Anupam et al. (eds.), CRC Press/Taylor & Francis Group, pp. 188–192.

25. *Barisic, L.*, Levenberg, E., Skar, A., *Boyd, A.*, and *Zoulis, P.* (2021), "A Thermal Digital Twin for Condition Monitoring of Asphalt Roads," Proceedings of the 2021 International Symposium on Frontiers of Road and Airport Engineering (iFRAE 2021), July 12–14, TU Delft, Netherlands (doi:10.1201/9781003251125-113).

26. *Bose, T.*, Zania, V., and Levenberg, E. (2021), "Numerical Analysis of Ballastless Asphalt Tracks subjected to Dynamic Loads," Proceedings of the 16th Conference of the

International Association for Computer Methods and Advances in Geomechanics (IACMAG), Vol. 2, pp. 249–257.

27. *Adam, Q.*, *Englmair, G.*, Levenberg, E., Skar, A. (2021), "Active Mitigation of Low-Temperature Cracking in Asphalt Pavements," Proceedings of the 2020 RILEM International Symposium on Bituminous Materials (ISBN), ISBN 978-3-030-46454-7, pp. 465–471.

28. *Nielsen, J.*, *Olsen, K.*, Skar, A., and Levenberg, E. (2022), "Analytic Analysis of a Grid-Reinforced Asphalt Concrete Overlay," Proceedings of the Eleventh International Conference on the Bearing Capacity of Roads, Railways and Airfields (Volume 1), Hoff et al. (eds.), Press/Taylor & Francis Group, pp. 346–354, doi:10.1201/9781003222880-32.

29. *Jørgensen, P.*, *Perslev, R.N.H.*, and Levenberg, E. (2022), "Sleeper Contact Modelling in Asphalt Overlayment Trackbeds," Proceedings of the Eleventh International Conference on the Bearing Capacity of Roads, Railways and Airfields (Volume 3), Hoff et al. (eds.), Press/Taylor & Francis Group, pp. 220–227, doi:10.1201/9781003222910-22.

30. Levenberg, E., *Jensen, P.K.*, and *Nielsen, J.* (2022), "The Dynamic Cone Penetrometer as a Seismic Source for Geophysical Exploration in Urban Environments," Proceedings of the 11th International Symposium on Field Monitoring in Geomechanics (accepted manuscript).

Under review

31. Skar, A., Nielsen, N.R., Pettinari, M., and Levenberg, E. "Towards infrastructure energy labeling utilizing data from a connected fleet of electric vehicles."

32. Lo Presti, D. et al. "Guidelines for the implementation of SMARTI: Sustainable Multifunctional Automated Resilient Transport Infrastructure."

Research reports

1. Levenberg, E., *McDaniel, R.S.*, and Olek, J. (2009), "Validation of NCAT Structural Test Track Experiment using INDOT APT Facility: Final Report," Joint Transportation Research Program (JTRP), Report FHWA/IN/JTRP-2008/26, Indiana Department of Transportation and Purdue University.

2. Levenberg, E. (2012), "Advanced Mechanical Characterization of Unbound Granular Pavement Materials," German-Israeli Foundation for Scientific Research and Development (GIF), Final Report for Grant No. I-2235-2078.10/2009, Technion–IIT.

3. *McDaniel, R.S.* and Levenberg, E. (2013), "Risk Management of Low Air Void Asphalt Concrete Mixtures," Joint Transportation Research Program (JTRP), Report FHWA/IN/JTRP-2013/15, Indiana Department of Transportation and Purdue University.

4. Levenberg, E., *Orozova-Bekkevold, I.*, and *Nielsen, K.* (2017), "An Offshore Reservoir Monitoring System Based on Fiber Optic Sensing of Seabed Strains," In Radical Innovation: Results of the Radical Innovation Sprint 2017, Danish Hydrocarbon Research and Technology Centre (DHRTC), Center for Oil and Gas – DTU.

Books

1. Levenberg, E. (2020), "Pavement Mechanics – Lecture Notes," First Edition, ISBN:978-87-972317-0-8, doi:10.11581/dtu:00000088.

Other publications

1. *Feferbaum, S.* and Levenberg, E. (2000), "Pavement Design on Subgrades having a Non-uniform Strength Profile," Traffic and Transportation 62 (in Hebrew).

2. Levenberg, E. (2003), "A New Approach for Controlling Compaction Quality in Pavement Construction Projects," Traffic and Transportation 71 (in Hebrew).

3. Levenberg, E. (2006), "Real-Time Control of HMA Mat Density using the PQI - An Initial Study for Possible Implementation," Prepared for the Israeli National Roads Company (in Hebrew).

4. Levenberg, E. (2007), "Cost-Effectiveness of Designing Asphalt Pavements using the Israeli PWD Guidelines With and Without an Aggregate Base Course," Prepared for the Israeli National Roads Company (in Hebrew).

5. Levenberg, E. (2011), "The Vacuum Sealing Method for Determination of Bulk Density of Compacted Asphalt Mixtures," Prepared for the Israeli National Roads Company (in Hebrew).

6. Levenberg, E. (2012), "Prototype Development of Smart Pavement Sensors," Prepared for the Israeli National Roads Company (in Hebrew).

7. Levenberg, E. (2013), "Changeover from Marshall to Gyratory Compaction – Phase I," prepared for the Israeli National Roads Company (in Hebrew).

8. Skar, A., *Andersen, M.B.*, *Larsen, J.*, *Rasmussen, S.*, and Levenberg, E. (2018), "New System for Continuous Measurement of Road Bearing Capacity," Danish Road Magazine (Trafik og Veje), April 2018, pp. 23–27 (in Danish).

CONFERENCES AND PRESENTATIONS

Participation in organizing conferences

1. The 8th International Conference on the Bearing Capacity of Roads, Railways and Airfields (BCRRA 2009), Champaign, Illinois, June 29–July 2, 2009. *Chair of the session* on "Performance Evaluations of Asphalt Mixtures."

2. The 1st Binational Student Workshop on Transportation, Haifa, Israel, March 19–21, 2013 (funded by the U.S. National Science Foundation). *Organizer and chair*.

3. International Society for Maintenance and Rehabilitation of Transportation Infrastructures (iSMARTi), 3rd International Conference on Transportation Infrastructure (ICTI), Pisa, Italy, April 22–25, 2014. *Scientific committee member and chair of the session* "Asphalt Pavement Performance and Design."

4. International Society for Asphalt Pavements (ISAP), 12th Conference on Asphalt Pavements, Raleigh, North Carolina, June 1–5, 2014. *Scientific committee member, co-organizer* of (and participant in) a symposium on "Building the Road Connecting Models to Practices – Challenges and Opportunities," and *moderator of the session* "Long-term Pavement Performance Prediction."

5. The 3rd International Conference on Perpetual Pavements (ICPP), Columbus, Ohio, October 30–31, 2014. *Scientific committee member*.

6. International Airfield & Highway Pavements Specialty Conference, Miami, Florida, June 7–10, 2015. *Scientific committee member*.

7. The 6th Conference of the European Asphalt Technology Association (EATA), Stockholm, Sweden, June 15–17, 2015. *Scientific committee member*.

8. The 94th Transportation Research Board (TRB) Annual Meeting, Washington DC, January 11–15, 2015. *Organizer and chair of lectern session* on "Multiaxial Characterization of Asphalt Concrete Mixtures."

9. The 8th International RILEM Symposium on Testing and Characterization of Sustainable and Innovative Bituminous Materials, Ancona, Italy, October 7–9, 2015. *Scientific committee member*.

10. The 7th Conference of the European Asphalt Technology Association (EATA), Zürich, Switzerland, June 12–14, 2017. *Scientific committee member*.

11. The 10th International Conference on the Bearing Capacity of Roads, Railways and Airfields (BCRRA 2017), Athens, Greece, June 28–30, 2017. *Scientific committee member*.

12. Advances in Materials and Pavement Performance Prediction (AM3P), Doha, Qatar, April 16–18, 2018. *Scientific committee member*.

13. Advances in Materials and Pavement Performance Prediction (AM3P), San Antonio, Texas, May 27–29, 2020. *Scientific committee member*.

14. International Symposium on Pavement, Roadway, and Bridge Life Cycle Assessment (LCA 2020), Sacramento, California, June 3–6, 2020. *Scientific committee member*.

15. RILEM International Symposium on Bituminous Materials (ISBM), Lyon, France, June 8–10, 2020. *Scientific committee member*.

16. The 9th International Conference on Maintenance and Rehabilitation of Pavements (MAIREPAV9), Zurich, Switzerland, July 1–3, 2020. *Scientific committee member*.

17. International Symposium on Frontiers of Road and Airport Engineering (iFRAE), Delft, The Netherlands, July 12–14, 2021. *Scientific committee member*.

Presentations at international conferences

1. Uniqueness of the Viscoelastic Time-Function for Asphalt-Aggregate Mixes. International Conference on Advanced Characterization of Pavements and Soil Engineering Materials, Athens, Greece, June 22, 2007.

2. Backcalculation of Layer Moduli using Time History of Embedded Gauge Readings. The 3rd International Conference on Accelerated Pavement Testing, Madrid, Spain, October 2, 2008.

3. Viscoelastic Response of Asphalt-Aggregate Mixes to Transient Confining Conditions. The 7th International RILEM Symposium on Advanced Testing and Characterization of Bituminous Materials, Rhodes, Greece, May 2009.

4. Validation of NCAT Structural Test Track Experiment using Purdue/INDOT APT Facility. The 8th International Conference on the Bearing Capacity of Roads, Railways and Airfields, Champaign, Illinois, July 2, 2009.

5. A Novel Computational Scheme for Exposing the Nonlinear Viscoelastic Behavior of Time-Dependent Materials with Application to Asphalt-Aggregate Mixes. The 11th US National Congress on Computational Mechanics, Minneapolis, Minnesota, July 26, 2011.

6. How Low is Too Low? An Assessment of the Risk of Low Air Voids in Asphalt. The 4th International Conference on Accelerated Pavement Testing, University of California – Davis, California, September 20, 2012.

7. Maximizing Resilience of Airport Runway and Taxiway Pavement Networks through Stochastic Programming. Annual Meeting of the Institute for Operations Research and the Management Sciences (INFORMS), Phoenix, Arizona, October 14, 2012.

8. Viscoelastic Genetic Algorithm for Inverse Analysis of Asphalt Layer Properties from Falling Weight Deflections. The 92nd Transportation Research Board (TRB) Annual Meeting, Washington DC, January 15, 2013.

9. Determination of Bulk Volume of Asphalt Specimens with Image-based Modeling. The 92nd Transportation Research Board (TRB) Annual Meeting, Washington DC, January 17, 2013.

10. Viscoelastic Characterization of Asphalt-Aggregate Mixes in Diametral Compression. The 5th European Asphalt Technology Association (EATA) Conference, Braunschweig, Germany, June 4, 2013.

11. Wireless Pavement Sensors for Wide-Area Instrumentation. The 3rd International Conference on Transportation Infrastructure, Pisa, Italy, April 23, 2014.

12. Testing Asphalt Concrete in Diametral Tension-Compression. The 12th International Society for Asphalt Pavements (ISAP) Conference on Asphalt Pavements, Raleigh, North Carolina, June 4, 2014.

13. Resilience of Networked Infrastructure with Evolving Component Conditions. Annual Meeting of the Institute for Operations Research and the Management Sciences (INFORMS), San Francisco, California, November 9, 2014.

14. Backcalculation with an Implanted Inertial Sensor. The 94th Transportation Research Board (TRB) Annual Meeting, Washington DC, January 12, 2015.

15. Intrinsic Roughness Mitigation of Pavements on Expansive Soils. The 94th Transportation Research Board (TRB) Annual Meeting, Washington DC, January 12, 2015.

16. Characterization of Moving Surface Loads with Buried Accelerometers. The 42nd Annual Conference on Review of Progress in Quantitative Nondestructive Evaluation (QNDE), Minneapolis, Minnesota, July 29, 2015.

17. In Situ and Laboratory Mechanical Characterization Using High-Resolution Fiber Optic Distributed Sensing. The 15th Panamerican Conference on Soil Mechanics and Geotechnical Engineering, Buenos Aires, Argentina, November 15, 2015.

18. Sensing for Smart Infrastructure: Prospective Engineering Applications. International Conference on Smart Infrastructure and Construction (ICSIC), Cambridge, UK, June 29, 2016.

19. Viscoelastic Pavement Modeling with a Spreadsheet. The 8th International Conference on Maintenance and Rehabilitation of Pavements (Mairepav8), Singapore, July 28, 2016.

20. Inferring Pavement Layer Properties from a Moving Measurement Platform. The 10th International Conference on the Bearing Capacity of Roads, Railways and Airfields (BCRRA), Athens, Greece, June 28, 2017.

21. A Comparison of Traffic Speed Deflectometer and Falling Weight Deflectometer Data. International Conference on Highway Pavements and Airfield Technology, Philadelphia, Pennsylvania, August 29, 2017.

22. Remote Sensing for Pavement Evaluation and Traffic Characterization. International Conference on Highway Pavements and Airfield Technology, Philadelphia, Pennsylvania, August 30, 2017.

23. Comparing Traffic Speed Deflectometer and Falling Weight Deflectometer Data. The 97th Transportation Research Board (TRB) Annual Meeting, Washington DC, January 10, 2018.

24. Inference of Pavement Properties with Roadside Accelerometers. The 9th International Conference on Maintenance and Rehabilitation of Pavements (Mairepav9), Zurich, Switzerland, July 3, 2020.

25. Sleeper Contact Modelling in Asphalt Overlayment Trackbeds. The 11th International Conference on the Bearing Capacity of Roads, Railways and Airfields (BCRRA), Trondheim, Norway, June 29, 2022.

26. Analytic Analysis of a Grid-Reinforced Asphalt Concrete Overlay. The 11th International Conference on the Bearing Capacity of Roads, Railways and Airfields (BCRRA), Trondheim, Norway, June 29, 2022.

Posters in international conferences

1. Interpretation of Complex Modulus Test Results for Asphalt-Aggregate Mixes. The 87th Transportation Research Board (TRB) Annual Meeting, Washington DC, USA, January 15, 2008.

2. Smoothing Asphalt Concrete Complex Modulus Test Data. The 89th Transportation Research Board (TRB) Annual Meeting, Washington DC, USA, January 12, 2010.

3. Viscoelastic-Viscoplastic Characterization of Unbound Granular Materials. The 92nd Transportation Research Board (TRB) Annual Meeting, Washington DC, USA, January 14, 2013.

4. Estimating Vehicle Speed with Embedded Inertial Sensors. The 93rd Transportation Research Board (TRB) Annual Meeting, Washington DC, USA, January 13, 2014.

5. High-Resolution Brillouin Analysis of Composite Materials Beams. The 24th International Conference on Optical Fiber Sensors (OFS-24), Curitiba, Brazil, October 1, 2015.

6. Resilience of Networked Infrastructure with Evolving Component Conditions. The 95th Transportation Research Board (TRB) Annual Meeting, Washington DC, January 12, 2016.

7. Characterization of a Traveling Object with an Underground Cluster of Accelerometers. International Conference on Smart Infrastructure and Construction (ICSIC), Cambridge, UK, June 27, 2016.

8. Runoff Initiation from Falling Raindrops – Comparison of Smooth Impervious Surface and Asphalt Pavements. Effects of Surface Inclination and Texture. European Geosciences Union General Assembly, Vienna, Austria, April 27, 2017.

9. Analysis of Track Responses to Train Braking. The 97th Transportation Research Board (TRB) Annual Meeting, Washington DC, January 9, 2018.

10. Analytic Pavement Modeling with a Fragmented Layer. The 99th Transportation Research Board (TRB) Annual Meeting, Washington DC, January 13, 2020.

11. Live Road Condition Assessment with Internal Vehicle Sensors. The 100th Transportation Research Board (TRB) Annual Meeting, Washington DC, January 25, 2021.

12. Construction of an Electrically Heated Asphalt Road based on Ribbon Technology. The 100th Transportation Research Board (TRB) Annual Meeting, Washington DC, January 27, 2021.

Seminars at universities

1. One-dimensional Viscoelastic-Viscoplastic Modeling of Asphalt Concrete with Damage and Healing. School of Civil Engineering, Purdue University, West Lafayette, Indiana, September 13, 2007.

2. Validation of NCAT Structural Test Track Experiment using INDOT APT Facility. School of Civil Engineering, Purdue University, West Lafayette, Indiana, April 17, 2008.

3. Constitutive Modeling of Asphalt-Aggregate Mixes with Damage and Healing. Department of Civil and Environmental Engineering, University of Illinois, Urbana-Champaign, Champaign, Illinois, April 24, 2008.

4. Constitutive Modeling of Asphalt-Aggregate Mixes with Damage and Healing. Department of Civil, Construction and Environmental Engineering, North Carolina State University, Raleigh, North Carolina, November 12, 2008.

5. Validation of NCAT Structural Test Track Experiment using INDOT APT Facility. Department of Civil Engineering, University of Pisa, Italy, February 25, 2009.

6. Constitutive Modeling of Asphalt-Aggregate Mixes with Damage and Healing. Transportation College, Southeast University, Nanjing, China, November 08, 2010.

7. Constitutive Modeling of Asphalt-Aggregate Mixes with Damage and Healing. The University of Nottingham, Faculty of Civil Engineering, Nottingham Transportation Engineering Center, Nottingham, UK, May 26, 2011.

8. Constitutive Modeling of Asphalt-Aggregate Mixes with Damage and Healing. Dresden University of Technology, Dresden, Germany, July 12, 2011.

9. Constitutive Modeling of Asphalt-Aggregate Mixes with Damage and Healing. University of Minnesota, Minneapolis, Minnesota, July 25, 2011.

10. Overview of Pavement Research at the Technion. Tongji University, Shanghai, China, September 18, 2012.

11. Linking Accelerated Pavement Testing Results to Field Behavior. Tongji University, Shanghai, China, September 26, 2012.

12. Pavement Research at the Technion. The Catholic University of America, Washington, DC, October 28, 2014.

13. Pavement Research at the Technion. University of Maryland, College Park, Maryland, October 30, 2014.

Presentations in international workshops/professional meetings

1. 1-D VE-VP Modeling of AC with Damage and Healing. Transportation Research Board Annual Meeting of Subcommittee AFK50(1), Washington DC, January 2005.

2. Validation of NCAT Structural Test Track Experiment using INDOT/Purdue APT Facility. APAI-FHWA-INDOT HMA Conference, Indianapolis, Indiana, December 4, 2007.

3. Incorporation of HMA Dynamic Modulus in the M-E PDG. North-Central M-E PDG User Group, Ames, Iowa, February 19, 2008.

4. Nonlinear Viscoelastic Behavior of Asphalt-Aggregate Mixes. Transportation Research Board Annual Meeting of Subcommittee AFK50(1), Washington DC, January 14, 2013.

5. A Short Exposition of Research Activities at the Technion Transportation Infrastructure Laboratory. National Airport Pavement Test Facility (NAPTF), William J. Hughes Technical Center, Atlantic City, NJ, February 27, 2013.

6. Backcalculation with Implanted Inertial Sensors. Transportation Research Board Annual Meeting of Subcommittee AFD80(1), Washington DC, January 14, 2014.

7. The Continuous Inference of In Situ Layer Properties as Key for Improving Material Selection, Construction Practices, and Pavement Models. Symposium on Building the Road Connecting Models to Practices–Challenges and Opportunities, ISAP 12th Meeting, Raleigh, North Carolina, June 2, 2014.

8. Interpretation of In-pavement Acceleration Traces. Turner-Fairbank Highway Research Center (TFHRC), McLean, Virginia, October 28, 2014.

9. Pavement Research at the Technion. Technology Transfer Seminar, Minnesota Department of Transportation (MnDOT), Saint Paul, MN, September 2, 2015.

10. Modeling Viscoelastic Tension-Compression Nonlinearity in Asphalt Concrete. Transportation Research Board Annual Meeting of Subcommittee AFK50(1), Washington DC, January 11, 2016.

11. Accessing Pavement Layer Properties from a Moving Measurement Platform. Transportation Research Board Annual Meeting of Committee AFD80, Washington DC, January 9, 2017.

12. The Danish Roads2Rails Project: Investigating a Ballastless Track Construction based on Asphalt Concrete, Transportation Research Board Annual Meeting of Committee AR050, Washington DC, January 9, 2018.

13. Inverse Analysis of Pavement Layer Properties from a Moving Measurement Platform, Transportation Research Board Annual Meeting of Subcommittee AFD80(1), Washington DC, January 10, 2018.

14. Asphalt Pavements with Embedded Heating Ribbons - Project Snowless, Transportation Research Board Annual Meeting of Committee AHD65, Washington DC, January 13, 2020.

15. Inferring Pavement Layer Properties from Roadside Sensors, Transportation Research Board Annual Meeting of Subcommittee AFD80(1), Washington DC, January 14, 2020.

16. Analysis of the Raptor for Project-Level Pavement Evaluation, Transportation Research Board Annual Meeting of Subcommittee AFD80(1), Washington DC, January 16, 2020.

17. Utilizing an Electric Snow-Melting System to Protect Asphalt Pavements against Low-Temperature Cracking, Transportation Research Board Annual Meeting of Committee AHD65, Washington DC, January 11, 2021.

Presentations in national workshops/professional meetings

a. Israel

1. Constitutive Modeling of Asphalt-Aggregate Mixes with Damage and Healing. Annual Symposium of the Israel Society for Theoretical and Applied Mechanics (ISTAM), Tel Aviv, December 16, 2001.

2. Real-time Measurement of Asphalt Mat Density. 2nd Military International Conference on Pavement Maintenance, Tel-Nof Air Force Base, May 24, 2005.

3. Development of Marshall Procedures for HMA Mixture Design. 4th Israeli Conference for Construction and Infrastructure, Tel Aviv, November 28, 2005.

4. Simultaneous Application of Creep and Relaxation Formulations to Study Nonlinear Behavior of Particle-reinforced Viscoelastic Composites. Annual Symposium of the Israel Society for Theoretical and Applied Mechanics (ISTAM), Tel Aviv, December 28, 2008.

5. Accelerated Pavement Testing under Laboratory and Field Conditions. 2nd Israeli Conference for Transportation and Infrastructure, Nazareth, March 18, 2010.

6. Viscoelastic Formulation with Different Tensile and Compressive Properties. 37th Israel Symposium on Computational Mechanics (ISCM-37), Tel Aviv, October 23, 2014.

7. Paths for Unlocking the Potential of Pavements to Accommodate Recycled Materials. Binational Israel-Singapore Seminar on Recycling of Materials, Haifa, November 11, 2014.

b. Denmark

8. Advanced and Widely Available Pavement Assessment Tools for Infrastructure Evaluation. DTU Transport Summit, Kongens Lyngby, May 31, 2017.

9. Monitoring Seabed Deformation with Fiber Optic Sensing – A Feasibility Study. Technology Conference of the Danish Hydrocarbon Research and Technology Centre (DHRTC), Kolding, November 14, 2017.

10. A Vision for Pavement Health Monitoring with Wisdom Stones. DTU Transport Summit, Kongens Lyngby, May 31, 2018.

11. Heavy Duty Pavements with Embedded Heating Ribbons Project' Snowless.' DTU Transport Summit, Kongens Lyngby, June 4, 2019.

12. Utilizing Car Sensor Data to Evaluate Physical Road Conditions (with Asmus Skar). DTU Transport Summit, Kongens Lyngby, June 4, 2019.

13. Roadside Sensors for Traffic Characterization and Pavement Health Monitoring (with Julius Nielsen). DTU Transport Summit, Kongens Lyngby, June 4, 2019.

14. Current and Prospective Research Activities within Transportation Infrastructure. The 4th Annual Danish Geotechnical Research Seminar, DTU Campus, Kongens Lyngby, October 26, 2022.

SPECIAL PROFESSIONAL ACTIVITIES

a. DTU

2021: Construction of an instrumented asphalt road on campus. The road is 100 m long and eight meters wide, and has strain and temperature sensors below the surface. S&P Clever Reinforcement Company funded the entire construction. This road serves as a full-scale research platform for validating advanced pavement models that consider the effects of reinforcing asphalt grids. Furthermore, it facilitates ongoing research on smart and climate-resilient urban infrastructure.

2019: Construction of a heated asphalt road on campus. The road is 70 m long and six meters wide, and has electrical ribbon heaters below the surface; it is instrumented with temperature sensors and a nearby weather station. EU H2020 Snowless Project funded the entire construction. This road serves as a live full-scale research platform that targets cold regions' transportation infrastructure while emphasizing green, sustainable, and scalable technologies to support user safety and prolong structural integrity. Furthermore, it facilitates ongoing research on the development of thermal digital twins.

b. Technion-IIT

2012: Establishment of a new Transportation Infrastructure Laboratory; a novel research and teaching facility designed and built to support the Technion's activities in the field of pavements. Work included massive physical restoration of the structure, purchasing, and operating new testing gear, upgrading existing equipment, fabricating non-standard machine parts, and hiring new staff. Two engineering technicians permanently work in this laboratory, alongside one or two students or engineers engaged on a project basis.