

Martins Zaumanis

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EDUCATION

Worcester Polytechnic University (www.wpi.edu), Worcester, MA Ph.D in Civil Engineering with a specialty on Highway Engineering	2014
Technical University of Denmark/ Riga Technical University (www.dtu.dk ; www.rtu.lv) Professional Master Degree in Transportation Engineering	2010
Riga Technical University (www.rtu.lv), Riga, Latvia Professional Bachelor Degree in Transportation Engineering	2009
National Center for Asphalt Technology (www.ncat.us), Auburn, AL Advanced Mix Design Course (WMA, RAP, and RAS)	2013
Asphalt Technology Course	2012

ACADEMIC WORK

Project manager , Latvian State Roads, Research Management and Development Dpt. Manage research projects, lead applications and execution of EU funded research, develop national research policy, administrate National research funding	since 2015
Senior researcher, Docent Riga Technical University, Riga, Latvia Apply for and manage National and International research projects, supervise doctoral student, lecture courses on asphalt technology	2010-2012
Project leader , WPI, Civil engineering dept., Worcester, MA – PhD dissertation topic: “100% recycled hot-mix asphalt and the use of rejuvenators.” – Lead research group of five people, closely collaborating with industry	2011-2014
Visiting researcher , EMPA, Switzerland	2013
Researcher , Riga Technical University, Riga, Latvia – Leader of two research projects in WMA technology and its environmental impact – Researcher at three projects on the use of industrial waste materials in asphalt production, increase of rutting resistance with the help of additives, and development of high modulus asphalt concrete.	2010-2012
Research assistant , Danish Road Directorate, Copenhagen, Denmark – Master’s thesis topic: Warm Mix Asphalt implementation in Denmark.	2010

INDUSTRY WORK

Member of Business Incubator , GIIC (www.giic.lv/en/), Riga, Latvia Planned commercialization of technology, developed product, compared business strategies, worked on attracting funding, wrote business plan	2014-2015
Quality engineer , Union Asphalttechnik (www.union.lv), Riga, Latvia Conducted QC of asphalt production process. Managed QC in construction objects. Created quality management system. Supervised laboratory personnel. Designed asphalt mixtures. Implemented EU standards in company. Instructed employees on QA issues.	2007-2011
Technical Director of the project “Development of WMA production technology” A Pieci (www.apieci.lv), Riga, Latvia Led the European Union funded project of first WMA test section in Latvia. Chose WMA technology and adjusted production plant. Conducted research and delivered successful production.	2010-2011
Supervisor of road construction works , Union Asphalttechnik, Latvia Planned work. Coordinated construction technique. Ordered materials. Prepared reports.	2004-2007

RESEARCH PROJECTS

Leader of 5 and a member of 6 research projects. Total attracted funding 1,174,000 EUR, including:

- 100% recycled asphalt and the use of rejuvenators, WPI, USA Project leader, 2011-2014
133,000 EUR
- 100% asphalt recycling as a business. Green Technology Incubator, Latvia. Project leader 10,000 EUR 2014-2015
- Sustainable fully recycled asphalt concrete. EMPA, Switzerland. Post-doctorate researcher, project co-leader, 840,000 EUR 2015-2018
- New “Intelligent” Nano - Composite Materials for Roads, Bridges, Buildings and Transport Vehicle. RTU, Latvia, EC Framework 7, Role: researcher 2013-2015
- Prediction of the dynamics of development permanent deformations for Warm Mix Asphalt and life cycle analysis. RTU, Latvia. Project leader, 54,000 EUR 2011-2013
- Warm Mix Asphalt Implementation in full scale production, A Pieci, LTD, Latvia. Technical director, 300,000 EUR 2010-2011
- Development of a New Asphalt Concrete Composite Material and Shear Strength Testing Technology by Finding Useful Utilization for By-products of Steel Industry and Dolomite Quarries, RTU, Latvia. Scientist, 242,000 EUR 2010-2013

PUBLICATIONS

26 international publications (12 journal, 2 monographs, and 11 conference), including:

- Zaumanis M., Mallick R.B., Frank R. (2014). **100% Recycled Hot Mix Asphalt: A Review and Analysis**. Resources, Conservation & Recycling, DOI: 10.1016/j.resconrec.2014.07.007
- Zaumanis M., Mallick R.B., Frank R. (2014). **Determining Optimum Rejuvenator Dose for Asphalt Recycling Based on Superpave Performance Grade Specifications**. Construction and Building Materials, 69: 159-166, DOI: 10.1016/j.conbuildmat.2014.07.035
- Zaumanis M., Haritonovs V. **Long term monitoring of full scale pavement test section with eight different asphalt wearing courses**. Materials and Structures. In Press. DOI: 10.1617/s11527-015-0614-6
- Zaumanis M., Mallick R.B., Frank R. (2014). **Evaluation of different recycling agents for restoring aged asphalt binder and performance of 100 % recycled asphalt**. Materials & Structures. DOI: 10.1617/s11527-014-0332-5
- Zaumanis M., Mallick R.B. (2013). **Review of very high-content reclaimed asphalt use in plant-produced pavement: state of the art**. Internat J of Pavement Engineering, 16(1): 39-55. DOI: 10.1080/10298436.2014.893331
- Xiaokong Y., Zaumanis M., dos Santos S. Poulidakos L. (2014). **Rheological, microscopic, and chemical characterization 4 of the rejuvenating effect on asphalt binders**, FUEL 135: 162-171. DOI: 10.1016/j.fuel.2014.06.038
- Zaumanis M., Mallick R.B., Frank R. (2014). **Influence of six rejuvenators on the performance properties of Reclaimed Asphalt Pavement (RAP) binder and 100% recycled asphalt mixtures**. Cons Build Mat, 71: 538–550 . DOI: 10.1016/j.conbuildmat.2014.08.073
- Zaumanis M., Mallick R.B. (2013). **Finite element modeling of rejuvenator diffusion in RAP binder film – simulation of plant mixing process**. RILEM symposium 2013; Stockholm, Sweden, 12-14.07 2013. 408-419.
- Haritonovs, V., Zaumanis M., Brencis G., Smirnovs J. (2013). **Performance of Asphalt Concrete With Dolomite Sand Waste and BOF Steel Slag Aggregate**. The Baltic Journal of Road and Bridge Engineering, 8 (2): 91–97.

INTERNATIONAL PRESENTATIONS

11 international oral conference presentations, including:

- “How green asphalt roads will save your tax money”, TEDx Riga, Riga, Latvia, 2015 .
- “Comparison of Six Rejuvenators to Improve Performance of 100% RAP Hot Mix Asphalt,” ISAP Technical Committee on Constitutive Modelling: 2014 Yearly Meeting, Washington, D.C., 2014.
- “Use of Rejuvenators for Production of Sustainable High Content RAP Hot Mix Asphalt”, The XXVIII International Baltic Road Conference, Vilnius, Lithuania, 26-28.08.2013 (oral presentation)
- ”Finite Element Modeling of Rejuvenator Diffusion in RAP Binder Film – simulation of plant mixing process,” RILEM symposium, Stockholm, Sweden, 2013.
- “Laboratory evaluation of organic and chemical Warm Mix Asphalt technologies,” 2nd International Warm Mix conference, St. Louis, MO, 2011.
- “Research on properties of Warm Mix Asphalt”, 5th International conference "Bituminous mixtures and pavements", Thessaloniki, Greece, 2011.

HONORS

TEDx Riga presenter	2015
Baltic-American Freedom Foundation (BAFF) scholar (industry funded scholarship)	2012-2013
Fulbright scholar (US flagship scholarship program funded by the Department of State)	2011-2012
ESF scholarship recipient (EU funded scholarship)	2010-2011
I3 business idea competition finalist (WPI)	2013
Best poster award at 5 th EATA conference, Braunschweig	2013

PROFESSIONAL ACTIVITIES

Evaluator of National research grant applications	since 2015
Participant of National road construction specification improvement task group	since 2015
Member of American Asphalt Paving Technologists (AAPT)	since 2013
Member of promotion council for awarding doctorate degree at Riga Technical University	since 2015
Supervisor of Doctoral dissertation at Riga Technical University	since 2015
Supervisor of Masters thesis at Riga Technical University	since 2013
Member of Latvian Council of science expert task group	since 2014
Peer reviewer for journals: “Construction and building materials”, “Journal of Testing and Evaluation”, “International Journal of Pavement Engineering”, “FUEL”, “Baltic Journal of Road and Bridge Engineering”	since 2012
Supervisor of six Bachelors theses at Riga Technical University	since 2011
Reviewer of Masters and Bachelor theses at Riga Technical University	since 2011

PATENTS

EU patent No. WO2014079496 “Bituminous coating composition”	2014
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INTERESTS

Founder and member of the board of directors, Football club Iecava (www.fkiecava.lv), Latvia 2005
Rise funding from EU and football federation grants and lead the execution of these projects.

Tennis since 2012

SKILLS

Language: English (fluent); Russian (fluent); German (beginner); Latvian (native)

Computer: MS Office, AutoCAD, Comsol Multiphysics, System dynamics

Asphalt production: QC/QA of asphalt production, mix design, plant tuning.

Testing: Empirical and performance asphalt mixture tests, Superpave and empirical bitumen tests, in-situ QC tests, unbound material QC tests, processing of test results, design of asphalt mixtures