4/01/21 - 9/30/21

Publications

1. Pan, Y., Zuo, L., and Ahmadian, M., A Half-wave Electromagnetic Energy-Harvesting Tie towards Safe and Intelligent Rail Transportation, Applied Energy, in review. (Virginia Tech)
2. Hosseini, S-M, Ahangarnejad, A. H., Radmehr, A., and Ahmadian, M., A Statistical Evaluation of Multiple Regression Models for Contact Dynamics in Rail Vehicles Using Roller Rig Data, International Journal of Rail Transportation, in review. (Virginia Tech)
3. Pan, Y, Radmehr, A., Tajaddini, A., and Ahmadian, M., An Experimental Study of the Influence of the Amount of Top-of-Rail Friction Modifiers on Traction, Proceedings of the 2021 Joint Rail Conference, St. Louis, Mo, April 20 – 21, 2021. (Virginia Tech)
4. Pan, Y., Mast, T., Holton, C., and Ahmadian, M., Performance Evaluation of a Novel Optical Sensing System for Detecting Rail Lubricity Conditions, Proceedings of the 2021 Joint Rail Conference, St. Louis, Mo, April 20 – 21, 2021. (Virginia Tech)
5. Pan, Y., Mast, T., Holton, C., and Ahmadian, M., Intermediate Distance Testing of Optical ToR Lubricity Sensors on a Remote-controlled Rail Cart, Proceedings of the 2021 Joint Rail Conference, St. Louis, Mo, April 20 – 21, 2021. (Virginia Tech)
6. Hosseini, S-M, Ahangarnejad, A.H., Radmehr, A., Tajaddini, A., and Ahmadian, M., A Statistical Approach to Evaluating Wheel-Rail Contact Dynamics, Proceedings of the 2021 Joint Rail Conference, St. Louis, Mo, April 20 – 21, 2021. (Virginia Tech)
7. Cronin, J. J., Zarembski A. M., and Palese J. W., Prediction of Rail Defect Development using Parametric Bootstrapping Modified Weibull Equations, Proceedings of the Institution of Mechanical Engineers, Part F: Journal of Rail and Rapid Transit, May 2021. doi.org/10.1177/09544097211020583, (University of Delaware)
8. Musazay, J., Zarembski, A. M. and Palese, J. W., Determining Track-Induced Lateral Thermal Expansion Forces on A Curved Railway Track, Proceedings of the Institution of Mechanical Engineers, Part F: Journal of Rail and Rapid Transit, February 2021. DOI 10.1177/0954409721995318, (University of Delaware)
9. Balogun, I. and Attoh-Okine, N., Random Forest–Based Covariate Shift in Addressing Nonstationarity of Railway Track Data, ASCE-ASME Journal of Risk and Uncertainty in Engineering Systems, Part A: Civil Engineering, 2021, 7(3): 04021028, 2021, (University of Delaware)
10. Soufiane, K., Zarembski, A. M., and Palese, J. W., Effect of Adjacent Support Condition on Premature Wood Crosstie Failure, Journal of Transportation Infrastructure Geotechnology, May 2021. DOI doi.org/10.1007/s40515-021-00168-5, (University of Delaware)
11. Mortazavian, E., Wang, Z., and Teng, H., Finite Element Investigation of Residual Stresses during Laser Powder Deposition Process as an Innovative Technique to Repair Worn Rails, submitted to proceedings of the Institution of Mechanical Engineers, Part F: Journal of Rail and Rapid Transit. (Resubmitted date: July 1, 2021). (University of Nevada Las Vegas)
12. Mortazavian, E., Wang, Z., and Teng, H., X-Ray Diffraction Measurement of Residual Stress in Laser Powder Deposition Process as a Potential Rail Repair Technique, Proceedings of the ASME 2021 International Mechanical Engineering Congress and Exposition, IMECE202, November 1-5, 2021, Virtual, Online. (University of Nevada Las Vegas)

Books or other non-periodical, one-time publications

1. Pan, Y. and Ahmadian, M. An Energy-Harvesting Railroad Tie for Improving Track Condition Monitoring and Safety, Quarterly Issue 4, U.S. Department of Transportation, Office of the Assistant Secretary for Research and Technology, October 2021. (Virginia Tech)
2. Radmehr, A., Pan, Y., Tajaddini, A., and Ahmadian, M., Wheel-Rail Contact Force and Wear Analysis Under Wet Surface Condition, the 2021 Joint Rail Conference, Baltimore, MD, April 20 – 21, 2022. Abstract accepted, paper in preparation. (Virginia Tech)
3. Molzon, M. and Ahmadian, M., Development of a Mobile Robot System for the Visual Inspection of Railcar Undercarriage Equipment, the 2021 Joint Rail Conference, Baltimore, MD, April 20 – 21, 2022. Abstract accepted, paper in preparation. (Virginia Tech)
4. Hosseini, S-M, Radmehr, A., and Ahmadian, M., Data Visualization using Google Earth Engine Coupled with Unsupervised Learning, A Practical Approach to Detecting Track Instability, the 2021 Joint Rail Conference, Baltimore, MD, April 20 – 21, 2022. Abstract accepted, paper in preparation. (Virginia Tech)
5. Radmehr, A., Pan, Y., Tajaddini, A., and Ahmadian, M., Experimental Evaluation of the Effect of Rail Cant Angle on the Wheel-Rail Contact Forces, Traction Coefficients, and Contact Patch Shapes, 2021 Joint Rail Conference, Baltimore, MD, April 20 – 21, 2022. Abstract accepted, paper in preparation. (Virginia Tech)
6. Mast, T., Radmehr, A., Hosseini, S-M, Hosseinian, A., Holton, C., and Ahmadian, M., Onboard Installation of LiDAR Doppler Systems for Track Instability Measurements, 2021 Joint Rail Conference, Baltimore, MD, April 20 – 21, 2022. Abstract accepted, presentation will be made at the conference. (Virginia Tech)
7. Pan, Y. and Ahmadian, M., Design and Field Testing of an Energy Harvester Tie: Enabling Rail Safety and Connectivity, 2021 Joint Rail Conference, Baltimore, MD, April 20 – 21, 2022. Abstract accepted, presentation will be made at the conference. (Virginia Tech)
8. Hosseini, S-M., Hosseinian, A., and Ahmadian, M., Unleashing the Power of Statistical Data-driven Models for Analyzing Complex Engineering Data, the 2021 Joint Rail Conference, Baltimore, MD, April 20 – 21, 2022. Abstract accepted, presentation will be made at the conference. (Virginia Tech)
9. Olubode, O. and Schill R., Static Degradation Monitoring of Carbon Strip in Pantograph-Catenary System using Electromagnetic Dots, 2021 Fall Transportation Conference, Las Vegas, Nevada, November 4-5, 2021. Abstract accepted, presentation will be made at the conference. (University of Nevada Las Vegas)

Other publications, conference papers and Presentations

1. Ahmadian, M. Keynote Lecture: LiDAR System Applications for Improving Condition Monitoring and Asset Management of Railways, The Seventeenth International Conference on Condition Monitoring and Asset Management, Plenary Lecture, London, England, September 6 – 10, 2021. (Virtual). (Virginia Tech)
2. Ahmadian, M. Keynote Lecture: Achieving Improved Understanding of Wheel-Rail Interface Dynamics Through Roller Rig Testing, International Conference on Rail Transportation (ICRT2021), Chengdu, China, July 5 – 6, 2021. (Virtual). (Virginia Tech)

3. Zarembski, A. M., Palese, J. W., Soufiane, K. and Grissom, G., How Do Failed Adjacent Ties Effect the Life of Wood Crossties, Railway Track & Structures, April 202, (University of Delaware)
4. Ashley, G., Balogun, I., Prosper, A., and Attoh-Okine, N, Prediction of Track Geometry Defect Severity Using Machine Learning Techniques, accepted for presentation at 2022 Transportation Research Board, (University of Delaware)
5. Soufiane, K, Zarembski, A. M., and Palese, J, Impact of Adjacent Support Condition on Premature Crosstie Failure, Railway Tie Association Annual Symposium and Technical Conference, November, 2021, (University of Delaware)