



National Biomechanics Institute

National Biomechanics Institute
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Felix Lee, MS, PE
Managing Scientist | Director, Accident Reconstruction

Felix Lee is a Managing Scientist and the Director of Accident Reconstruction at the National Biomechanics Institute. Mr. Lee holds both a Master of Science (MS) and a Bachelor of Science (BS) in Mechanical Engineering from the University of California, Los Angeles (UCLA). Mr. Lee also holds licenses as a Professional Engineer (PE) in California and as an Unmanned Aircraft Systems (i.e. drone) pilot through the Federal Aviation Administration.

Mr. Lee specializes in motor vehicle and pedestrian reconstruction. As a forensic mechanical engineer, Mr. Lee investigates and reconstructs collisions involving passenger cars, commercial trucks, vans, buses, motorcycles, bicycles, and pedestrians. He has extensive experience conducting assessments of impact severity, vehicle speed and dynamics, collision sequencing, damage matching, driver avoidance potential, event data recorders (EDRs), seat belt usage, airbag deployment, and rollovers. Mr. Lee conducts vehicle inspections of components including airbags, seatbelt, seats, and tires to evaluate the cause of failure. He also examines collisions sites and documents evidence using drones and FARO 3D laser scanners.

Mr. Lee is proficient in modeling vehicle motion during collisions using 3-dimensional computer simulations using PC-Crash and Virtual Crash technologies. In addition, he is qualified in imaging and interpreting data from vehicle EDRs (i.e. "black box"). Having authored more than 10 peer-reviewed publications, Mr. Lee has most recently co-authored a series of Society of Automotive Engineers (SAE) publications quantifying the accuracy and recording behavior of Toyota airbag control modules.

Prior to joining NBI, Mr. Lee served as a Mechanical Engineer at Jensen Hughes and as a Project Engineer at MEA Forensic Engineers & Scientists.

Academic Credentials

MS, Mechanical Engineering, University of California, Los Angeles (UCLA), 2012
BS, Mechanical Engineering, University of California, Los Angeles (UCLA), 2010

Current Appointments

Managing Scientist, National Biomechanics Institute

Past Appointments

Mechanical Engineer, Jensen Hughes (formerly CASE Forensics), 2017-2018
Project Engineer, MEA Forensic Engineers & Scientists, 2012-2017
Teaching Assistant, Graduate Student Researcher, UCLA Department of Mechanical Engineering, 2010-2012

Licenses, Certifications & Selected Continuing Education

Licensed Professional Engineer, California, #37562

Unmanned Aircraft Systems (UAS) Pilot, Federal Aviation Administration
Motorcycle Crash Testing, California Association of Accident Reconstruction Specialists
Society of Automobile Engineers (SAE) World Congress
HVE Forum, Engineering Dynamics Corporation
EDC Simulations Training Course (HVE), Engineering Dynamics Corporation
PC-Crash Online Workshop, MEA Forensic
PC-Crash Essentials Online Workshop, MEA Forensic
Rail Safety Training Course, LA County Metropolitan Transportation Authority
Side Underride Collisions with Big Rigs, California Association of Accident Reconstruction Specialists
Energy Methods and Damage Analysis in Traffic Crash Reconstruction, Institute of Police Technology and Management (IPTM)
ARC-CSI Crash Conference, Collision Publishing Inc.
Crash Data Retrieval User's Summit, Collision Publishing Inc.
Crash Data Retrieval (CDR) System Operators Course, Crash Data Specialists
Crash Data Retrieval (CDR) Analysis and Applications Course, Crash Data Specialists
OSHA 10 Hour Construction Program

Peer-Reviewed Publications & Presentations

Lee F, Coughlin R, "Products, Appliances, Vehicles, Systems," Combined Claims Conference, Anaheim, CA, March 2018.

Lee F, Xing P, Yang M, Lee J, Wilkinson C, Siegmund GP, "Behavior of Toyota Airbag Control Modules Exposed to Low and Mid-Severity Collision Pulses (SAE Technical Paper 2017-01-1438)," Warrendale, PA: Society of Automotive Engineers, 2017.

Xing P, Lee F, Flynn T, Wilkinson C, Siegmund G, "Comparison of the Accuracy and Sensitivity of Generation 1, 2, and 3 Toyota Event Data Recorders in Low-Speed Collisions (SAE Technical Paper 2016-01-1494)," Warrendale, PA: Society of Automotive Engineers: International Journal of Transportation Safety, 2016.

Hunter R, Fix R, Lee F, King D, "Using Force-Displacement Data to Predict the EBS of Car into Barrier Impacts (SAE Technical Paper 2016-01-1483)," Warrendale, PA: Society of Automotive Engineers, 2016.

McKinley I, Lee F, Pilon L, "A Novel Thermodynamic Energy Conversion Cycle," Applied Energy, vol. 126, pp. 78-89, 2014.

Lee F, Jo H, Lynch C, Pilon L, "Pyroelectric Energy Conversion Using PLZT Ceramics and the Ferroelectric-Ergodic Relaxor Phase Transition," Smart Materials and Structures, vol.22, No.2, 025038, 2013.

Chin T, Lee F, McKinley I, Goljahi S, Lynch C, Pilon L, "Direct Thermal to Electrical Energy Conversion Using 9.5/65/35 PLZT Ceramics in the Ergodic Relaxor Phase," IEEE Transactions on Ultrasonics, Ferroelectrics, and Frequency Control, vol. 59, no. 11, pp. 2373-2385, 2012.

Lee F, Goljahi S, McKinley I, Lynch C, Pilon L, "Pyroelectric Waste Heat Energy Harvesting Using Relaxor Ferroelectric 8/65/35 PLZT and the Olsen Cycle," Smart Materials and Structures, vol. 21, no.2, 025021, 2012.

Lee F, Navid A, Pilon L, "Pyroelectric Waste Heat Energy Harvesting Using Heat Conduction," Applied Thermal Engineering, vol. 37, May 2012, pp. 30-37, 2012.

Chin T, Lee F, McKinley I, Goljahi S, Lynch C, Pilon L, "Pyroelectric Energy Harvesting of Relaxor Ferroelectric 9.5/65/35 PLZT Using the Olsen Cycle (HT 2012-58488)," ASME Summer Heat Transfer Conference, SHTC 2012, Rio Grande, Puerto Rico, USA, July 2012.

Lee F, Goljahi S, McKinley I, Lynch C, Pilon L, "Pyroelectric Energy Conversion Using Relaxor Ferroelectric 8/65/35 PLZT and the Olsen Cycle (MNHMT 2012-75153)," ASME International Conference on Micro/Nanoscale Heat Transfer, MNHT 2012, Atlanta, GA, January 2012.

Lee F, Navid A, Pilon L, "Pyroelectric Energy Harvesting of Copolymer P(VDF-TrFE) Heated and Cooled by Heat Conduction (MNHMT 2012-75155)," ASME International Conference on Micro/Nanoscale Heat Transfer, MNHMT 2012, Atlanta, GA, January 2012 (2nd place in the Best Paper Award Competition).

Professional Affiliations

Society of Automotive Engineers (SAE)

California Association of Accident Reconstruction Specialists (CAARS)

National Association of Traffic Accident Reconstructionists and Investigators (NATARI)

Southwestern Association of Technical Accident Investigations (SATAI)

Languages

English

Cantonese