

CURRICULUM VITAE - Mukul K. Verma

Areas of Consulting

- Product Liability and Forensic Engineering – *Automotive Safety; Accident Analysis; Performance evaluation - vehicle structures, safety components, airbags, vehicle-based sensors, TPMS. Pre-crash safety systems. Electric and Hybrid Vehicle Performance. Post-crash protection.*
- Intellectual Property Issues: *Analysis of Patent infringement and patent validity claims- automotive safety systems, airbags, vehicle-based sensors. Mechatronics systems – Tires, TPMS, Crash avoidance systems.*
- Vehicle Engineering – *Automobile design for Safety and Structural performance. Passive Safety Systems - airbags, crash sensors, structural components. Active Safety Systems - Pre-crash sensors, Crash Avoidance, Autonomous braking. Electric vehicles – functional & accident safety. Rollover of commercial vehicles.*
- Sustainable Transportation – *Intelligent systems for energy efficiency & safety - Intelligent Tires & Vehicles. Mechatronics systems in transportation.*

Partial List of Clients & Projects:

- Automobile Component Manufacturers – *Defect investigation for airbag modules, analysis of manufacturing & assembly processes and quality control protocols.*
- Various Clients & Government Agencies – *Analysis of airbag inflators design and performance under various operating environments.*
- State Department of Transportation – *Investigation of injury causation factors to rider in mass-transit bus ingress-egress system.*
- Freight Transporter – *Analysis of rollover of fully-loaded tractor-trailer to identify accident causation factors.*
- US Government Agencies – *Peer review: future automobile designs for higher energy efficiency & lower emissions, safety of passenger cars and SUVs in crashes.*
- Overseas automotive research organization – *Consultation on Electric Vehicles safety, development of First Response protocols; Evaluation of crash test facilities.*
- Individual clients – *Investigation of factors in head injury causations; design analysis of remote-operated trunk-lid systems.*
- Individual clients – *Accident Analysis - windshield intrusion and passenger injury.*
- Automotive manufacturer – *Car-to-SUV crash analysis, Evaluation of accident causation factors - frontal and A-pillar airbags, sensors, front structure.*
- Insurance company – *Investigation of factors in injury causation, to front-seat passenger by external object; Performance of laminated windshields with pre-existing crack.*
- Automotive manufacturers – *Patent infringement and validity analysis of Tire Pressure Monitoring Systems.*
- Automobile manufacturer – *Directing the design of lightweight automobile to achieve regulatory compliance and top-level safety ratings.*

Academic Credentials

- **Ph.D.**, Mechanical Engineering & Applied Mechanics, University of Michigan.
- **M.S.**, Aerospace Engineering, Indian Institute of Science, Bangalore.

Previous Work Experience

- Consultant, M. P. Holcomb Engineering Corporation (1/2009- 9/2010)
- General Motors (1978-2008) -R&D Engineer /Technical Fellow & Principal Engineer, Vehicle Safety & Structures. GM Product Engineering.
- *Research Associate*, University of Michigan Transportation Research Institute, Ann Arbor (1975-78)

Teaching Experience

- Professor (adjunct) /Associate Professor (adjunct)/ Assistant Professor:
 - Mechatronics Engineering, Lawrence Technological University. (2009- ...); *Intelligent Vehicles & Tire Systems*.
 - Mechanical Engineering, University of Alabama at Birmingham (2012): *Nonlinear Finite Element Analysis*.
 - *Mechanical Engineering* University of Michigan (Dearborn), (1978-1985) – *Dynamics of Mechanical Systems*.
- GMU classes at General Motors University for Engineers & Managers: *Design Integration for Automotive Safety* (- 2007)

Other Experience in Automotive Industry

- Chairman, Experts' Workgroup for Enhanced Vehicle Compatibility (2003-2008).
- US industry representative: Traffic safety regulations: *OICA/ Group of Experts on Passive Safety (France)* (2007-2008); *VC COMPAT Final Workshop 2006*; *International Harmonization Association (Germany)* 2005; GM representative to USCAR 2007-2008: *Research projects in hydrogen fuel cell vehicle safety*.
- Technical Sessions Organizer and Chairperson of various sessions; - *FISITA (International Federation of Automotive Engineering Societies)*; *SAE Annual Congress*.

Technical Publications – International Journals & Conferences

- **30+** Technical papers in peer-reviewed journals and at International Conferences.

WEB-PUBLISHED ARTICLES, MAGAZINE ARTICLES, NEWS STORIES

THESE ARE POSTED AT *VEHICLE-SAFETY-TECHNOLOGIES.COM*

For further information, please contact mkverma2002@gmail.com