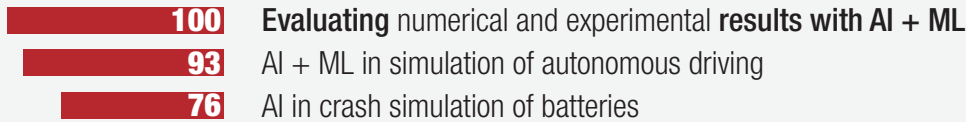


RESULTS OF OUR WEB-BASED SURVEY FOR THE DETERMINATION OF THE CURRENT, CRITICAL CHALLENGES OF AUTOMOTIVE CAE

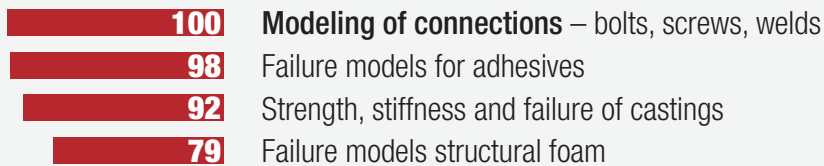


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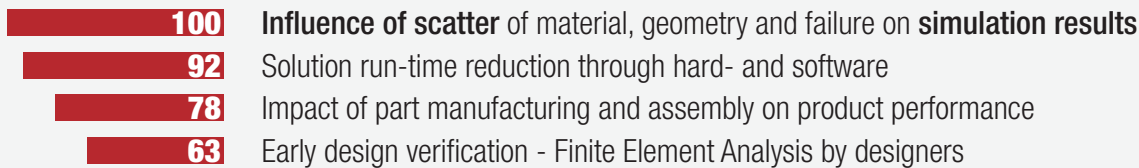
ARTIFICIAL INTELLIGENCE, MACHINE LEARNING, BIG DATA



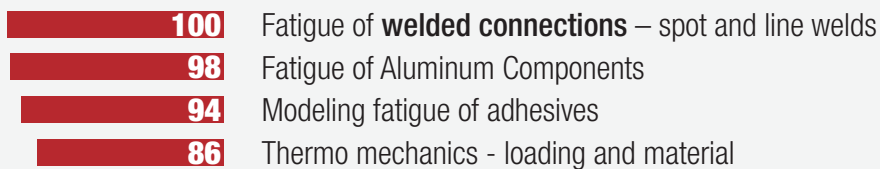
BODY STIFFNESS AND STRENGTH



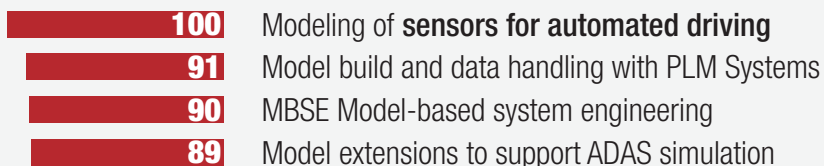
CAE PROCESS & QUALITY ASSURANCE



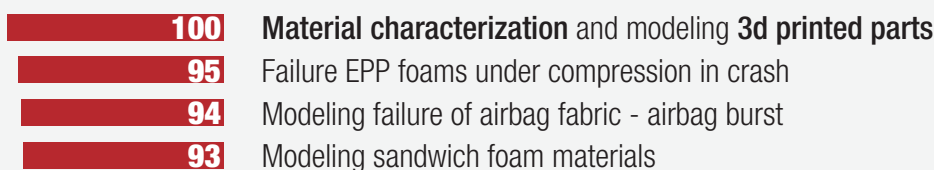
DURABILITY / FATIGUE



FULL VEHICLE SIMULATION



MATERIAL MODELING – FOCUS CRASH ANALYSIS



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MODELING ISSUES CRASH ANALYSIS

100	Modeling wheels and suspensions for small overlap test
99	Gluing - different adhesives and related modeling issues
95	Modeling of line welds
92	Modeling electrical drives in crash (engine, gear box)

MULTI SIMULATION

100	Multi scale models for predicting fracture
98	Holistic simulation electrical engines - electric, mechanical, thermal
90	Thermal influences on performance of electrical engines
87	Thermal management and comfort future vehicles

NOISE, VIBRATION, HARSHNESS

100	Prediction accuracy of acoustic simulations
95	Analysis of high frequency cabin noise
81	Prediction of rolling tire noise
77	Simulation of ventilation system noise in electric vehicles

OCCUPANT SAFETY

100	HBM s for occupant safety of autonomous vehicles
87	Reduced Order Modeling and Response surface-based restraint system optimization
82	Computing input signals for crash sensors with FEM/MATLAB coupling
80	Airbag modeling issues - unfolding, contacts, gas flow

OPTIMIZATION & ROBUSTNESS

100	Reduced Order Modeling for fast optimization
96	Use of heuristic/expert knowledge in optimization
95	Shape and topology optimization for MPDB crash
72	1d solvers for crash simulation and optimization

VIRTUAL MANUFACTURING

100	Simulation and optimization of 3d printing processes
98	Welding simulation and distortion prediction
93	One step solvers for sheet metal forming
91	Simplified casting simulation

