

SAE International Journal of Engines
Volume 10, Issue 2 (April 2017)
Table of Contents

Investigation of Deposits in Urea-SCR System Based on Vehicle Road Test (2017-01-9275)	119
Neng Zhu, Lin Lv, and Chengwei Ye	
Measurement of Loss Pathways in Small, Two-Stroke Internal-Combustion Engines (2017-01-9276)	128
Joseph K. Ausserer, Marc D. Polanka, Jacob A. Baranski, Keith D. Grinstead, and Paul J. Litke	
Potentialities of Boot Injection Combined with After Shot for the Optimization of Pollutant Emissions, Fuel Consumption and Combustion Noise in Passenger Car Diesel Engines (2017-01-9277)	144
Stefano D'Ambrosio and Alessandro Ferrari	
A Century of Environmental Technologies for Light-Duty Vehicles (2017-01-0119)	160
Keith John Holmes	
Calibration and Demonstration of Vehicle Powertrain Thermal Management Using Model Predictive Control (2017-01-0130)	173
Phillip Bonkoski, Amey Y. Karnik, and Adrian Fuxman	
Modeling of Phase Change within a Wax Element Thermostat Embedded in an Automotive Cooling System (2017-01-0131)	181
Chiranth Srinivasan, Chonglin Zhang, Haiyang Gao, De Ming Wang, and Jody Slike	
Waste Heat Recovery for Light-Duty Truck Application Using ThermoAcoustic Converter Technology (2017-01-0153)	196
Dipankar Sahoo, Adam Kotrba, Tom Steiner, and Greg Swift	
Iterative Learning Algorithm Design for Variable Admittance Control Tuning of A Robotic Lift Assistant System (2017-01-0288)	203
Hai Wu and Meng-Feng Li	
IIoT-Enabled Production System for Composite Intensive Vehicle Manufacturing (2017-01-0290)	209
Veera Aditya Yerra and Srikanth Pilla	
Intelligent Robotics Safeguarding (2017-01-0293)	215
Tina Hull	
Failure Mode Avoidance Approach for Hybrid Electric Vehicle Systems (2017-01-0298)	222
Allen Dobryden, Brian Rutter, Derek Hartl, and Eric Bramson	
Artifact Based Assessment of CNC Machine Thermal Growth and Compensation (2017-01-0299)	227
Chandra Jalluri, Himanshu Rajoria, Mark Goderis, Michael Habel, and Trevor Hill	
Analysis of Tool Wear for Trimming of DP980 Sheet Metal Blanks (2017-01-0302)	233
Saeid Nasheralahkami, Sergey Golovashchenko, Scott Dawson, and Raj Sohmshtetty	
Surface Fatigue Cracking Behavior of a CrN-Coated Tool Steel Influenced by Sliding Cycles and Sliding Energy Density (2017-01-0303)	239
Ran Cai, Xueyuan Nie, and Jingzeng Zhang	
Practical Application of the Hole Expansion Test (2017-01-0306)	247
Brandon M. Hance	
Evaluation of Prog-Die Wear Properties on Bare DP1180 Steel (2017-01-0310)	258
Wei Wu, Dajun Zhou, Donald Adamski, Darryl Young, and Yu-Wei Wang	

A Comprehensive Plasticity and Fracture Model for Metal Sheets under Multi-axial Stress and Non-Linear Strain Path (2017-01-0315).....	266
Yueqian Jia, Yangyang Qiao, Hao Pan, Edmund Chu, and Yuanli Bai	
Degradation Analysis of Flexible Film Cables in an Automotive Environment (2017-01-0317).....	274
James Henry Wrock, Pengying Niu, and Huairui Guo	
Ductile Fracture Prediction of Automotive Suspension Components (2017-01-0318).....	280
John George, Kishore Pydimarry, Jeremy Seidt, and Kelton Rieske	
Numerical Fracture Analysis Considering Forming Effect and Element Size Regularization for Automotive Seat Structures (2017-01-0319).....	287
Dae-Young Kim, Yongtak Han, Sahngsoon Shin, and Hyungsub Yook	
Deriving Failure Rates in a Hierarchy of FMEAs (2017-01-0322).....	296
Samer Abbas and John Joyce	
Methods for Analyzing Severity Mitigation in FMEA (2017-01-0325).....	300
Samer Abbas and John Joyce	
Fatigue Analysis of Continuously Carbon Fiber Reinforced Laminates (2017-01-0327).....	305
Christian Gaier, Stefan Fischmeister, Julia Maier, and Gerald Pinter	
A Computational Multiaxial Model for Stress-Strain Analysis of Ground Vehicle Notched Components (2017-01-0329).....	316
Ayhan Ince	
Improving the Accuracy of Dynamic Vibration Fatigue Simulation (2017-01-0333).....	323
Kurt Munson, Frederic Kihm, and Andrew Halfpenny	
Cyclic Material Behavior of High-Strength Steels Used in the Fatigue Assessment of Welded Crane Structures with a Special Focus on Transient Material Effects (2017-01-0342).....	331
Benjamin Möller, Alessio Tomasella, Rainer Wagener, and Tobias Melz	
Fatigue Assessment of Nodular Cast Iron with Material Imperfections (2017-01-0344).....	340
Christoph Bleicher, Rainer wagener, Heinz Kaufmann, and Tobias Melz	
Lifetime Assessment of Cylinder Heads for Efficient Heavy Duty Engines Part II: Component-Level Application of Advanced Models for Thermomechanical Fatigue Life Prediction of Lamellar Graphite Cast Iron GJL250 and Vermicular Graphite Cast Iron GJV450 Cylinder Heads (2017-01-0346).....	350
Radwan Hazime, Thomas Seifert, Jeremy Kessens, and Frank Ju	
Lifetime Assessment of Cylinder Heads for Efficient Heavy Duty Engines Part I: A Discussion on Thermomechanical and High-Cycle Fatigue as Well as Thermophysical Properties of Lamellar Graphite Cast Iron GJL250 and Vermicular Graphite Cast Iron GJV450 (2017-01-0349).....	359
Thomas Seifert, Philipp von Hartrott, Kristopher Boss, and Paul Wynthein	
Evaluation of the Influence of MnS in Forged Steel 38MnVS6 on Fatigue Life (2017-01-0353).....	366
Matilde Scurria, Sinem Emre, Benjamin Möller, Rainer Wagener, and Tobias Melz	
Ductile Fracture from Spot Weld and Flange Edge in Advanced High Strength Steels (2017-01-0365).....	373
Kentaro Sato, Takayuki Futatsuka, Jiro Hiramoto, Kei Nagasaka, Akira Akita, and Takeshi Kashiyama	
A New Combined Isotropic, Kinematic and Cross Hardening Model for Advanced High Strength Steel under Non-Linear Strain Loading Path (2017-01-0367).....	382
Yueqian Jia, Yu-wei Wang, and Yuanli Bai	

Study on Engine Hood with Negative Poisson's Ratio Architected Composites Based on Pedestrian Protection (2017-01-0368).....	391
Ying Zhao, Fangwu Ma, Longfan Yang, Yueqiang Wang, and Hongyu Liang	
Application of Nano-Indentation Test in Estimating Constituent Phase Properties for Microstructure-Based Modeling of Multiphase Steels (2017-01-0372).....	405
Guang Cheng, Kyoo Sil Choi, Xiaohua Hu, and Xin Sun	
Development of Carburizing Steel for Innovation in Parts Manufacturing Process (2017-01-0378).....	413
Yuta Imanami, Kunikazu Tomita, Kazuaki Fukuoka, and Kimihiro Nishimura	
Side Impact Pressure Sensor Predictions with Computational Gas and Fluid Dynamic Methods (2017-01-0379).....	420
Tau Tyan, Leonard Shaner, Matt Niesluchowski, Nand Kochhar, Dilip Bhalsod, and Jason Wang	
Stress-Strain Relations for Nodular Cast Irons with Different Graphite Volume Fractions under Tension and Compression (2017-01-0399).....	457
Mohammed Yusuf Ali, Wei-Jen Lai, Nikhil Kotasthane, Jagadish Sorab, Chari Sever, and Jwo Pan	
Hole Drilling With Orbiting Motion for Residual Stress Measurement – Effects of Tool and Hole Diameters (2017-01-0400).....	467
Theo Rickert	
A 1D/Quasi-3D Coupled Model for the Simulation of I.C. Engines: Development and Application of an Automatic Cell-Network Generator (2017-01-0514).....	471
Augusto Della Torre, Gianluca Montenegro, Tarcisio Cerri, and Angelo Onorati	
Development and Validation of a Quasi-Dimensional Dual Fuel (Diesel – Natural Gas) Combustion Model (2017-01-0517).....	483
Ivan Taritas, Darko Kozarac, Momir Sjeric, Miguel Sierra Aznar, David Vuilleumier, and Reinhard Tatschl	
Influence of Binary CNG Substitute Composition on the Prediction of Burn Rate, Engine Knock and Cycle-to-Cycle Variations (2017-01-0518).....	501
Sebastian Hann, Lukas Urban, Michael Grill, and Michael Bargende	
Phenomenological Autoignition Model for Diesel Sprays Using Reduced Chemical Kinetics and a Characteristic Scalar Dissipation Rate (2017-01-0523).....	512
Adam B. Dempsey, Scott B. Fiveland, and Scott L. Post	
Characterizing Factors Influencing SI Engine Transient Fuel Consumption for Vehicle Simulation in ALPHA (2017-01-0533).....	529
Paul Dekraker, Mark Stuhldreher, and Youngki Kim	
An EGR Cooler Fouling Model: Experimental Correlation and Model Uses (2017-01-0535).....	541
Chih-Kuang Kuan, Daniel Styles, Mitchell Bieniek, and John Hoard	
Experimental and Numerical Study of the Water Injection to Improve the Fuel Economy of a Small Size Turbocharged SI Engine (2017-01-0540).....	550
Vincenzo De Bellis, Fabio Bozza, Luigi Teodosio, and Gerardo Valentino	
Development of a $K-k-\epsilon$ Phenomenological Model to Predict In-Cylinder Turbulence (2017-01-0542).....	562
Navin Fogla, Michael Bybee, Mohsen Mirzaeian, Federico Mollo, and Syed Wahiduzzaman	
Numerical Simulation and Flame Analysis of Combustion and Knock in a DISI Optically Accessible Research Engine (2017-01-0555).....	576
Salvatore Iaccarino, Sebastiano Breda, Alessandro D'Adamo, Stefano Fontanesi, Adrian Irimescu, and Simona Merola	
Modeling Non-Premixed Combustion Using Tabulated Kinetics and Different Flame Structure Assumptions (2017-01-0556).....	593
Tommaso Lucchini, Gianluca D'Errico, Angelo Onorati, Alessio Frassoldati, Alessandro Stagni, and Gilles Hardy	

A Predictive Energy Management Strategy Using a Rule-Based Mode Switch for Internal Combustion Engine (ICE) Vehicles (2017-01-0584).....	608
Haksu Kim, Jaewook Shin, and Myoungcho Sunwoo	
Individual Cylinder Air-Fuel Ratio Control for Engines with Unevenly Spaced Firing Order (2017-01-0610).....	614
Nicolo Cavina, Francesco Ranuzzi, Matteo De Cesare, and Enrico Brugnani	
Three-Dimensional Three-Component Air Flow Visualization in a Steady-State Engine Flow Bench Using a Plenoptic Camera (2017-01-0614).....	625
Hao Chen and Volker Sick	
Preliminary Investigation of Exhaust Pressure Waves in a Single Cylinder Diesel Engine and the Impacts on Aftertreatment Sprays (2017-01-0616).....	636
Zhenyi Yang, Shouvik Dev, Marko Jetic, Christopher Aversa, Akshay Ravi, David Ting, and Ming Zheng	
Analysis of NOx Emissions during Crank-Start and Cold Fast-Idle in a GDI Engine (2017-01-0796).....	646
J. Felipe Rodriguez and Wai K. Cheng	
Physically Motivated Model for Efficient Dynamic Simulation of Chain Tensioners with Labyrinth Seals (2017-01-1073).....	656
Robert Huber and Jan Clauberg	
Effect of Valvetrain Components Misalignment on Valve and Guide Interactions in Automotive Engines (2017-01-1082).....	668
Mohammed Yusuf Ali, Thomas Sanders, Mikhail A. Ejakov, Reda Adimi, Alexander Boucke, Jochen Lang, and Gunter Knoll	
Predictive Transmission Shift Schedule for Improving Fuel Economy and Drivability Using Electronic Horizon (2017-01-1092).....	680
Jianbo Lu, Sanghyun Hong, Jonathan Sullivan, Guopeng Hu, Edward Dai, Dennis Reed, and Ryan Baker	
Shift-by-Wire System for Lexus RWD Vehicles (2017-01-1094).....	689
Yusuke Nakade, Atsushi Kamada, Koki Ueno, Mikine Kume, and Kouji Sakaguchi	
New RWD 10 Speed Automatic Transmission for Passenger Vehicles (2017-01-1097).....	695
Tomohide Suzuki, Hiroyuki Sugiura, Atsushi Niinomi, Shingo Maezuka, Terufumi Miyazaki, and Yohei Habata	
Development of Innovative Toyota 10-Speed Longitudinal Automatic Transmission (2017-01-1099).....	701
Seiji Masunaga, Terufumi Miyazaki, Yohei Habata, Kazuhiko Yamada, Yoshio Hasegawa, Takahiro Kondo, Ichiro Kitaori, and Akira Takeichi	