

**SAE International Journal of Engines**  
 Volume 9, Issue 3 (September 2016)  
 Table of Contents



<b>Metric-based Evaluation of Software Architecture for an Engine Management System</b> (2016-01-0037).....	1377
Hariharan Venkitachalam, Dirk von Wissel, and Johannes Richenhagen	
<b>Tool-based Optimization of the Topology of an Electrical Distribution System (EDS)</b> (2016-01-0103).....	1386
Ludwig Brabetz, Mohamed Ayeb, and Oliver Baumgarten	
<b>Ultrasound for Crimp Inspection</b> (2016-01-0104).....	1393
Khalil Maalouf, David Stull, and Keith Nicholas	
<b>Fast Simulation of Wave Action in Engine Air Path Systems Using Model Order Reduction</b> (2016-01-0572).....	1398
Stephanie Stockar, Marcello Canova, Baitao Xiao, Wengang Dai, and Julia Buckland	
<b>An Efficient Level-Set Flame Propagation Model for Hybrid Unstructured Grids Using the G-Equation</b> (2016-01-0582).....	1409
Federico Perini, Youngchul Ra, Kenji Hiraoka, Kazutoshi Nomura, Akihiro Yuuki, Yuji Oda, Christopher Rutland, and Rolf Reitz	
<b>A Zonal Turbulence Modeling Approach for ICE Flow Simulation</b> (2016-01-0584) .....	1425
Vesselin Krassimirov Krastev and Gino Bella	
<b>An Efficient, Durable Vocational Truck Gasoline Engine</b> (2016-01-0660) .....	1437
Thomas Reinhart and Marc Megel	
<b>Reduction of Heat Loss and Improvement of Thermal Efficiency by Application of “Temperature Swing” Insulation to Direct-Injection Diesel Engines</b> (2016-01-0661).....	1449
Yoshifumi Wakisaka, Minaji Inayoshi, Kenji Fukui, Hidemasa Kosaka, Yoshihiro Hotta, Akio Kawaguchi, and Noriyuki Takada	
<b>Using Ethanol’s Double Octane Boosting Effect with Low RON Naphtha-Based Fuel for an Octane on Demand SI Engine</b> (2016-01-0666) .....	1460
Guillaume Bourhis, Jean-Pascal Solari, Virginie Morel, and Roland Dauphin	
<b>Highly Turbocharged Gasoline Engine and Rapid Compression Machine Studies of Super-Knock</b> (2016-01-0686) .....	1475
Hui Liu, Zhi Wang, Margaret Wooldridge, Mohammad Fatouraie, Zhichao Jia, Yunliang Qi, Xin He, Mengke Wang, and Jian-Xin Wang	
<b>Combustion Development to Realize High Thermal Efficiency Engines</b> (2016-01-0693).....	1486
Daishi Takahashi, Koichi Nakata, Yasushi Yoshihara, and Tetsuo Omura	
<b>Experimental and Numerical Study of Flame Kernel Formation Processes of Propane-Air Mixture in a Pressurized Combustion Vessel</b> (2016-01-0696) .....	1494
Xiucheng Zhu, Lorenzo Sforza, Tejas Ranadive, Anqi Zhang, Seong-Young Lee, Jeffrey Naber, Tommaso Lucchini, Angelo Onorati, Muniappan Anbarasu, and Yangbing Zeng	
<b>Investigation of Fuel Injection Strategies for Direct Injection of Neat n-Butanol in a Compression Ignition Engine</b> (2016-01-0724) .....	1512
Tadanori Yanai, Christopher Aversa, Shouvik Dev, Graham Reader, and Ming Zheng	
<b>Leaner Lifted-Flame Combustion Enabled by the Use of an Oxygenated Fuel in an Optical CI Engine</b> (2016-01-0730) .....	1526
Ryan K. Gehmlich, Cosmin E. Dumitrescu, Yefu Wang, and Charles J. Mueller	

<b>Extension of the Phenomenological 3-Arrhenius Auto-Ignition Model for Six Surrogate Automotive Fuels</b> (2016-01-0755).....	1544
Christopher Kim Blomberg, Dimitrios Mitakos, Michele Bardi, Konstantinos Boulouchos, Yuri M. Wright, and Annelies Vandersickel	
<b>Experimental Investigation of Homogeneous Charge Induced Ignition (HCII) with Low-Pressure Injection to Reduce PM Emissions in a Heavy-Duty Engine</b> (2016-01-0775).....	1559
Zhanteng Chang, Chao Yu, Haiyan Zhang, Shuojin Ren, Zhi Wang, Boyuan Wang, and Jianxin Wang	
<b>Advanced Knock Detection for Diesel/Natural Gas Engine Operation</b> (2016-01-0785).....	1571
Martin Kirsten, Gerhard Pirker, Christoph Redtenbacher, Andreas Wimmer, and Franz Chmela	
<b>Prechamber Hot Jet Ignition of Ultra-Lean H<sub>2</sub>/Air Mixtures: Effect of Supersonic Jets and Combustion Instability</b> (2016-01-0795).....	1584
Sayan Biswas and Li Qiao	
<b>Surface Conductivity Measurement of Catalyst Materials by EUPS and Its Correlation to Catalyst Performance</b> (2016-01-0911).....	1593
Makoto Nagata, Takashi Yamada, Ryuji Ando, Insu Kim, and Toshihisa Tomie	
<b>Impact of Carbonaceous Compounds Present in Real-World Diesel Exhaust on NO<sub>x</sub> Conversion over Vanadia-SCR Catalyst</b> (2016-01-0921).....	1598
Ashok Kumar, Kristopher Ingram, Deepesh Goyal, and Krishna Kamasamudram	
<b>Lubricant-Derived Ash Impact on Gasoline Particulate Filter Performance</b> (2016-01-0942).....	1604
Nicholas Custer, Carl Justin Kamp, Alexander Sappok, James Pakko, Christine Lambert, Christoph Boerensen, and Victor Wong	
<b>Impact of Rh Oxidation State on NO<sub>x</sub> Reduction Performance of Multi-Component Lean NO<sub>x</sub> Trap (LNT) Catalyst</b> (2016-01-0947).....	1615
Junhui Li, Neal Currier, Aleksey Yezrets, Hai-Ying Chen, Howard Hess, and Shadab Mulla	
<b>An Approach to Controlling N<sub>2</sub>O Emission on HDD On-Road Applications</b> (2016-01-0948).....	1623
Davion O. Clark and Thomas Pauly	
<b>Rapidly Pulsed Reductants in Diesel NO<sub>x</sub> Reduction by Lean NO<sub>x</sub> Traps: Effects of Mixing Uniformity and Reductant Type</b> (2016-01-0956).....	1630
Amin Reihani, Benjamin Corson, John W. Hoard, Galen B. Fisher, Evgeny Smirnov, Dirk Roemer, Joseph Theis, and Christine Lambert	
<b>Analysis and Choice of Input Candidates for a Virtual NO<sub>x</sub> Sensor by a Mutual Information Approach</b> (2016-01-0957).....	1642
Patrick Schrangl, Roman Schmied, Stephan Stadlbauer, Harald Waschl, Luigi del Re, Bernhard Ramsebner, and Christoph Reiter	
<b>On Road Durability and Performance Test of Diesel Particulate Filter with BS III and BS IV Fuel for Indian Market</b> (2016-01-0959).....	1651
Dhinesh Kumar, Ashwanth Raju, Nitin Sheth, and Steffen Digeser	
<b>Robust, Cost-Optimal and Compliant Engine and Aftertreatment Operation using Air-path Control and Tailpipe Emission Feedback</b> (2016-01-0961).....	1662
Satish Narayanan Ramachandran, Gillis Hommen, Paul Mentink, Xander Seykens, Frank Willems, and Frank Kupper	
<b>Sulfur Poisoning of a NO<sub>x</sub> Storage Catalyst - A Comprehensive Modelling Approach</b> (2016-01-0964).....	1674
Klaus Hadl, Reinhard Ratzberger, Helmut Eichlseder, Martin Schuessler, Waldemar Linares, and Hannes Pucher	

<b>Design of Catalytic Devices by Means of Genetic Algorithm: Comparison Between Open-Cell Foam and Honeycomb Type Substrates</b> (2016-01-0965).....	<b>1686</b>
Stefania Falfari, Giacomo Micci, Gian Marco Bianchi, Federico Brusiani, Gianluca Montenegro, Augusto Della Torre, and Angelo Onorati	
<b>Vehicle and Drive Cycle Simulation of a Vacuum Insulated Catalytic Converter</b> (2016-01-0967).....	<b>1696</b>
Rohil Daya, John Hoard, Sreedhar Chanda, and Maneet Singh	
<b>Catalytic Soot Oxidation: Effect of Ceria-Zirconia Catalyst Particle Size</b> (2016-01-0968).....	<b>1709</b>
Athanasis G. Konstandopoulos, Chrysoula Pagkoura, Souzana Lorentzou, and Georgia Kastrinaki	
<b>Modeling of Catalyzed Particulate Filters - Concept Phase Simulation and Real-Time Plant Modeling on HiL</b> (2016-01-0969).....	<b>1720</b>
Johann C. Wurzenberger, Sophie Bardubitzki, Susanne Kutschi, Robert Fairbrother, and Christoph Poetsch	
<b>Evaluation and Prediction of Deposit Severity in SCR Systems</b> (2016-01-0970).....	<b>1735</b>
Henrik Smith, Thomas Lauer, Viktor Schimik, and Klaus Gabel	
<b>Capability Assessment Process for the Optimisation of Testing Facilities for Powertrain Development</b> (2016-01-0982).....	<b>1751</b>
Philip Lawson, John Houldcroft, Andrew Neil, Andrea Balcombe, Richard Osborne, Antonio Ciriello, and Wilhelm Graupner	
<b>Recovery of Tail Pipe Species Concentrations and Its Effect on Emissions Calculations from Raw Exhaust Gas Streams during Chassis Dynamometer Tests</b> (2016-01-0984).....	<b>1763</b>
Venkatraman Mahadevan, Suresh Iyer, and David Klinikowski	
<b>Particle Emissions from Light-Duty Vehicles during Cold-Cold Start</b> (2016-01-0997).....	<b>1775</b>
Huzeifa Badshah, David Kittelson, and William Northrop	
<b>Profile Optimization of the Teeth of the Double Rack-and-Pinion Gear Mechanism in the MCE-5 VCRi Engine</b> (2016-01-1013).....	<b>1786</b>
Matthieu Duchemin and Vincent Colle	
<b>Analysis of the Turbocharger Compressor Surge Margin Using a Hurst-Exponent-based Criterion</b> (2016-01-1027).....	<b>1795</b>
Bertrand Kerres, Vineeth Nair, Andreas Cronhjort, and Mihai Mihaescu	
<b>A Study of the Friction of Oil Control Rings Using the Floating Liner Engine</b> (2016-01-1048).....	<b>1807</b>
Zachary Westerfield, Tian Tian, Yang Liu, and Dallwoo Kim	
<b>Design Optimization of a Valvetrain System under Engine Brake Switch Loading by means of Strain Measurement</b> (2016-01-1078).....	<b>1825</b>
Rifat Kohen Yanarocak and Hakan Boz	
<b>Motorcycle Dual Exhaust Muffler Design Improvement to Eliminate Failure Caused by Thermal Stress</b> (2016-01-1080).....	<b>1833</b>
Narendra V. Bansode, Arnab Ganguly, and Vikas Kumar Agarwal	
<b>Modeling Gerotor Oil Pumps in 1D to Predict Performance with Known Operating Clearances</b> (2016-01-1081).....	<b>1839</b>
Jonathan Harrison, Rodrigo Aihara, and Fabian Eisele	
<b>Fretting Analysis of an Engine Bearing Cap Using Computer Simulation</b> (2016-01-1083).....	<b>1847</b>
Kenji Sato, Takeru Hamakawa, Takeyuki Yamasaki, Yoshimichi Ishihara, Hisashi Hashimoto, Chao Shi, Hiroaki Haneda, Shinichi Takahashi, and Yoshiyuki Iida	
<b>Transient, Three Dimensional CFD Model of the Complete Engine Lubrication System</b> (2016-01-1091).....	<b>1854</b>
Sujan Dhar, Homa Afjeh, Chiranth Srinivasan, Raj Ranganathan, and Yu Jiang	