

Contents

1	Effect of Compression Ratio on the Combustion Characteristics of Premixed Charge Induced Ignition for Diesel Engine	1
	Yujie Guo, Jianjun Zhu, Zhiwei Su, Wei Han and Zilong Wu	
2	Study of the Effect of Combustion Chamber Shapes on the Mixture Formation and Combustion Characteristic on CNG-DI Engine	9
	Tao Jiang, Xuedong Lin and Miao Yang	
3	Damage Risk Evaluation and Optimization for BIWS Spots-Weld	23
	Daolin Deng, Yu Zhang and Zhonghao Xu	
4	Fatigue Durability Analysis of a Frame Based on Multi Body Dynamics	31
	Qin Zhang, Fengchong Lan, Jiqing Chen and Qinsheng Huang	
5	Study on Calibration of Secondary Air Injection System in a V12 Engine	45
	Hongzhi Zhao, Wei Wang and Xiaofan Zhong	
6	Research on Soot Filtration and Pressure Drop Characteristics of DPF	55
	Ying Gao, Hongqi Liu, Wei Chen, Tieqiang Fu, Maodong Fang and Jun Li	
7	Research on the Present Situation and Factors of Volatile Organic Compounds in Car Cabin	67
	Jiabao Ren, Shujie Xu, Xuefeng Liu, Wei Liu and Enyou Cui	
8	Optimization Method of Low Exhaust Temperature Emissions of City Buses Meet China V	75
	Tengteng Li, Changyuan Wang, Kongjian Qin and Xiaojun Jing	

9	Analysis and Test Research for Three-Phase Short-Circuit of Permanent Magnet Synchronous Motor for an Electric Vehicle	83
	Sibo Wang, Chao Lu, Xiaoxu Wang and Huichao Zhao	
10	Based on an Improved Sliding Mode Observer for Position Estimation of PMSM	99
	Su Zhou, Daxiang Zhu and Zhe Hu	
11	Simulation Analysis and Research of C70GB Fuel Cell Vehicle	111
	Ping Chen, Chen Liang, Jiangqiu Li and Hongliang Jiang	
12	Electrochemical-Thermal Coupled Model of Lithium-Ion Batteries for Low Temperature Charging	123
	Peng Wu, Jan Romberg, Hao Ge, Yakun Zhang and Jianbo Zhang	
13	Research on Low Frequency Torque Ripple of In-wheel Motor of Four Wheel Independent Drive	133
	Zhe Li, Zheng Ling, Yue Ren, Yinong Li, Ke Wang and Zhenfei Zhan	
14	Relaxed Static Stability for All-Wheel-Drive Electric Vehicle Based on Yaw Moment Control	151
	Jun Ni and Jibin Hu	
15	Test Study on Characteristics of Multi-Hole Injector for Gasoline Direct Injection Engine	161
	Jujiang Liu, Hong Chen, Sicong Lin, Yuhuai Li, Lin Ye and Shuang Zhang	
16	Integrated Exhaust Manifold Type Cylinder Head Structure Design for Gravity Casting Process	171
	Ming Chen, Wenlei Yang, Tianyu Zhang, Donghang Liu and Hanqing Song	
17	Experimental Research on Macroscopic and Microscopic Characteristics of Ethanol-Fatty Acid Methyl Ester Blends Sprays	187
	Junge Li, Xiaocao Yu, Bin Liu, Tiegang Hu and Xibin Wang	
18	An Ultra-High Power Ignition System for EGR-Diluted GDI Engine	197
	Haifeng Lu, Liguang Li, Yintong Liu, Han Gao and Jiyou Shen	
19	Experimental and Simulated Study on the Cylinder Deactivation of Vehicle Gasoline Engine	207
	Shuhai Yu, Xingxing Ma, Zhigang Ma, Rui Liu and Dongxian Song	

20 Study on Effects of Multiple Injection at Intake Stroke on Combustion and Emissions of GDI Engine Under Warm Up Conditions	217
Wei Dong, Chaojie Pu, Yao Sun, Litao Qiu and Bin Ma	
21 Study of Start-Stop Technology on a GDI Engine	229
Jin Li, Weifei Yu, Peng Zhou, Jianrui Zhang, Tao Chen, Pengyuan Sun and Hua Li	
22 The Study of Friction and Wear Capability of Piston Ring Coatings	241
Wenping Li and Yun Lu	
23 Direct Injection Start-Stop Piston Final Stop Position Modelling and Analysis.	249
Peng Zhou, Jin Li, Jianrui Zhang, Weifei Yu, Qingtao Si and Tuozhou Yu	
24 Study on the Impact of Communication Imperfections on Forward Collision Warning and Avoidance Based on V2V Communications.	259
Minghan Zhu, Hongmao Qin, Jianqiang Wang, Manjiang Hu, Keqiang Li and Zhouwei Kong	
25 Wavelet-Based Demodulation Design for Vehicular Communication Network	271
Yao Ge, Zhan Shu and David Daut	
26 Research on Static Viscoelastic and Tribological Properties of PP-EPDM, PP-GF30 and ABS in Automobile	293
Xiaojia Zhang, Lei Den, Changyong Lin and Bo Liu	
27 Study of the Design and Torsion Performance for Carbon Fiber Composite Material Automobile Drive Shaft.	303
Jiancai Liu, Yingguo Xian, Du Cao, Jianbo Su, Wei Liao, Mingde Ding and Zhong Su	
28 Effect of Solution Treatment on Structure and Mechanical Properties of Fe–Mn–Al–Si Light Steel After Cold Rolling	313
Liang Yao and Wen Shi	
29 Damping Analysis and Test Research of a Composite Leaf Spring in a Light Bus.	327
Wenku Shi, Chen Qian, Qianqian Song, Bo Gao and Jun Ke	
30 Analysis on China's Fuel Consumption Standards and Its Influences on Curb Weight	343
Xiao Li, Fuquan Zhao, Han Hao and Zongwei Liu	

31	Prediction and Study on the Influence of Propeller Shaft to Vehicle Noise Based on BP Neural Network	357
	Yongjun Liu, Chaonan Xu, Weilong Niu, Xiuming Zhang and Jun Wei	
32	Optimization and Simulation of SUV Sunroof Buffeting Noise.	365
	Xu Gong, Jun Wang, Chaoyi Deng, Penghui Wei, Bo Liu and Lin Li	
33	Semi-active Intake Structure Design and Vehicle Validation	375
	Jie Li, Changjun Tan, Donglian Zhang, Shuo Zhang and Liang Yang	
34	Calculation and Application of Sound Insulation of the Vehicle Dash Panel	397
	Cheng Peng, Feng Xu, Wei Pan, Min Sun and Yanghui Xu	
35	The Analysis for Casting Axle Cover Leakage	409
	Jun Chang, Buliang Zhang, Zhiying Liu and Chuanlong Huang	
36	The Layout Design of Rearview Mirror Based on Vehicle Ergonomics	417
	Yingying Xu, Hongfang Ling, Fang Qian, Yuyong Wang and Jianzi Huang	
37	Research on Curve Safety Speed Warning for Vehicle with Risk Prediction	431
	Xian Qu, Feng Yu and Shu-en Zhao	
38	Multi Objective Optimization of Vehicle Crashworthiness Based on Combined Surrogate Models	447
	Ling Zheng, Yinan Gao, Yinong Li and Zhenfei Zhan	
39	The Influences of Pre-impact Braking Scenarios on Occupant Restraint System During the Full Frontal Impact.	461
	Hongyun Li, Chengyue Jiang, Dong Cui, Shugang Xie and Shuang Lu	
40	Rear Seat Belt Usage Models Using FARS and Field Data	469
	Yang He, Zhan Shu, Yao Ge and Janice Daniel	
41	Study on Dynamic Torque PID Control for Automobile Diaphragm Spring Clutch Based on Kalman Filter	487
	Chen Shao, Xue Bin Wu, Xin Zhang and Hong Wei Chen	

42	Research on Parameters Optimization of Transmission System of Military Off-Road Vehicle	499
	Bo Li, Xueyuan Li, Wei Wu, Junjie Zhou and Chaocheng Qin	
43	Study on the Program Load Spectrum of the Suspension Fatigue Bench Test and Correlation	511
	Bing Rong, Zhengwen Tan, Pan Xiao, Yuanyuan Ma, Jianwen Zhou and Chaojie Liu	
44	Fatigue Analysis of Car Body Structure Based on Transient Response	523
	Pengbo Wang	
45	The Study on Fatigue Test of Cab With Suspension Based on 4-Channel Road Simulation Rig	533
	Yunkai Gao, Genhai Wang and Jingpeng Han	
46	Research on the Fluxless Brazing of Aluminum Air Cooled Oil Cooler	545
	Changxing Mei, Hao Liu, Xiaobo Mai, Yongjin Gao and Renzong Chen	
47	Analysis of Manufacturing Technology for the Spherical Head Supporting Part	557
	Sanhu Zhao, Laitao Zhai, Baoyang Song, Kai Cui, Yang Li and Bo Yu	
48	Optimization of Design Parameters of Circular Burring	573
	Wenshan Fu, Yinzhi He and Chunyang Lu	
49	Experimental Study on the Application of Hydrogen Detector in Engine Leak Detection	581
	Qi Wang, Wei Zhu, Lei Chen and Sanyan Cao	
50	Investigation on Induction Hardening Treatment of Cylindrical Drive Gear Shaft	589
	Bo Chen, Da-peng Wang, Hang-yu Li, Kai Cui and Bo Jiang	
51	Research on Automatic Automobile Air-Conditioning Controller	605
	Bo Yang, Mingming Wang, Ted S. Huang, Fei Peng and Cong Xin	
52	Research on the Control Algorithm of EPS for Vehicle Handling Stability	613
	ChenXi Fang and Shang Liu	

53	Research on Flux Weakening Speed Control Strategy for PMSM	629
	Lei Qian, Haizhen Liu, Rui He and Weiwen Deng	
54	A Study of Three-Way Catalyst Deterioration Monitoring	637
	Song Yan, Tonghao Song and Tingwei Liu	
55	Functional Safety System Design on EPS	647
	Zhihong Wu, Xiezu Su, Yuan Zhu and Luke	

Proceedings of SAE-China Congress 2016: Selected
Papers

(Ed.)

2017, X, 664 p. 118 illus., Hardcover

ISBN: 978-981-10-3526-5