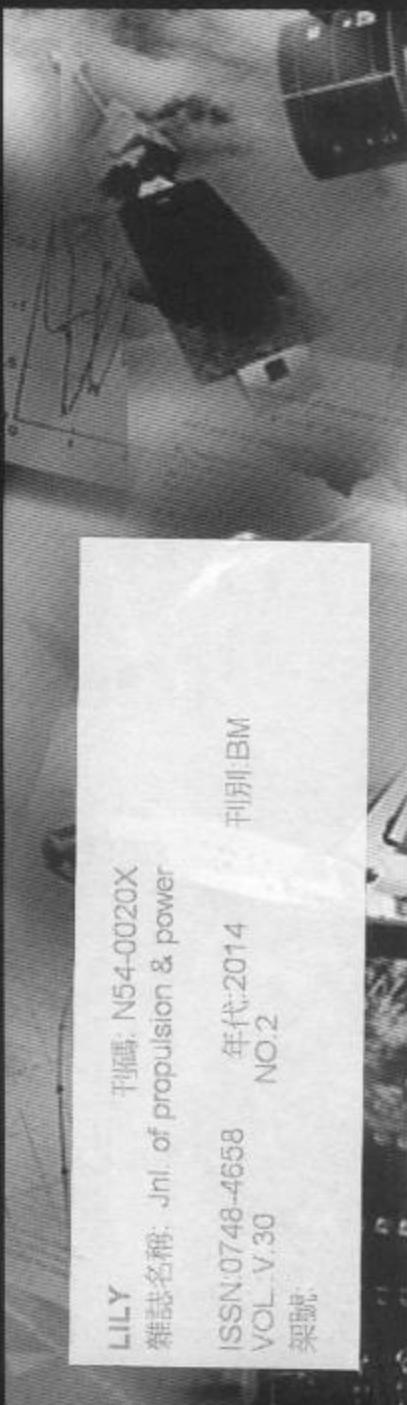


JOURNAL OF PROPULSION AND POWER

VOLUME 30, NUMBER 2

MARCH–APRIL 2014



SURVEY PAPERS

- Review of Worldwide Activities in Liquid-Fed Pulsed Plasma Thruster A. Rezaieha and T. Schönher 253

FULL-LENGTH PAPERS

- Green Propulsion Advancement: Challenging the Maturity of Monopropellant Hydrazine R. L. Sackheim and R. K. Massee 265
- Enhancing Composite Solid Propellant Burning Rates with Potassium Doped Ammonium Perchlorate-Part I K. Ishitha and P. A. Ramakrishna 277
- Effect of Oxidizer on the Combustion Performance of Boron-Based Fuel-Rich Propellant L.-I. Liu, G.-q. He, Y.-h. Wang 285
- Influence of Ammonia Borane on the Stability of a Liquid Rocket Combustor M. A. Pfeil, S. F. Son, W. E. Anderson 290
- Novel Manufacturing Method for Hydrogen Peroxide Catalysts: A Performance Verification S. Bonifacio, A. R. Sorge, D. Krejci, A. Woschnak, C. Scharlemann 299
- CoMn-Based Oxides as Bulk Catalyst for Rocket-Grade Hydrogen Peroxide Decomposition F. F. Maia, L. G. F. Pereira, L. H. Gouvea, F. S. Costa, R. Vieira 309
- Radiation and Roughness Effects on Nozzle Thermochemical Erosion in Solid Rocket Motors A. Turchi, D. Bianchi, P. Thakre, F. Nasuti, V. Yang 314
- Closed-Loop Precision Throttling of a Hybrid Rocket Motor S. A. Whitmore, Z. W. Peterson, S. D. Eilers 325
- LOx Jet Atomization Under Transverse Acoustic Oscillations J. S. Hardi, H. C. G. Martinez, M. Oschwald, B. B. Dally 337
- Tomographic Imaging of Flames: Assessment of Reconstruction Error Based on Simulated Results A. Guha and I. M. Schoegl 350
- Coupled Heat Transfer Analysis in Regeneratively Cooled Thrust Chambers B. Betti, M. Pizzarelli, F. Nasuti 360
- Experimental and Numerical Multiphase-Front Fluid Hammer P. Porca, M. Lema, P. Rambaud, J. Steelant 368
- Influence of Unsteadiness on the Analysis of Pressure Gain Combustion Devices D. E. Paxson and T. Kaemming 377
- Hydrodynamic Instabilities in Gaseous Detonations: Comparison of Euler, Navier-Stokes, and Large-Eddy Simulation Y. Mahmoudi, N. Karimi, R. Deiterding, S. Emami 384
- Forced Response of Mistuned Bladed Disks: Quantitative Validation of the Asymptotic Description O. Khemiri, C. Martel, R. Corral 397

Table of Contents continued on back cover



A Publication of the American Institute of Aeronautics and Astronautics Devoted to Aerospace Propulsion and Power
 JPPOEL 30(2) 253–528 (2014)
 ISSN 0748-4658

CONTENTS—continued

Sensitivity of Multistage Compressor Performance to Inlet Boundary Conditions	J. R. Brossman, P. R. Ball, N. R. Smith, J. C. Methel, N. L. Key	407
Unsteady Vane Boundary Layer Response to Rotor–Rotor Interactions in a Multistage Compressor	N. R. Smith and N. L. Key	416
Ramp Injector Scale Effects on Supersonic Combustion	A. Trebs, M. Roa, S. Heister, W. Anderson, R. Lucht	426
Ignition Transients in a Scramjet Engine with Air Throttling Part I: Nonreacting Flow	J. Li, L. Zhang, J. Y. Choi, V. Yang, K.-C. Lin	438
Geometry Rule of Combustor–Inlet Interaction in Ramjet Engines	T. Cui and S. Tang	449
Computational Fluid Dynamics Investigation of a Mach 12 Scramjet Engine	Y. Moule, V. Sabel'nikov, A. Mura, M. Smart	461
Numerical Investigation of Dual-Mode Operation in a Rectangular Scramjet Flowpath	R. J. Yentsch and D. V. Gaitonde	474
Powerplant Design and Performance Analysis of a Manned All-Electric Helicopter	A. Datta and W. Johnson	490
Effect of External Cathode Azimuthal Position on Hall-Effect Thruster Plume and Diagnostics	K. G. Xu and M. L. R. Walker	506

TECHNICAL NOTES

Autoignitable and Restartable Hybrid Rockets Using Catalytic Decomposition of an Oxidizer	E. S. Jung and S. Kwon	514
One Method to Increase the Operating Frequency of Pulse Detonation Rocket Engines	K. Wang, W. Fan, W. Lu, F. Chen	518
Diffusion- and Kinetics-Limited Combustion of an Explosively Dispersed Aluminum Particle	K. Balakrishnan	522
Performance Analysis of Composite Propellant Based on HTPB–DNCB	M. Abdullah, F. Gholamian, A. R. Zarei	526