

International Journal of Energetic Materials and Chemical Propulsion

VOLUME 11 CONTENTS, 2012

Page Range of Issues	
Issue 1: 1–95; Issue 2: 97–195; Issue 3: 197-292; Issue 4: 293-388	
Issue 5: 389-486; Issue 6: 487-582	

ISSUE 1	
Ignition and Combustion of Nickel Coated and Uncoated Aluminum Particles in Hot Post-Flame Environment	1
<i>E. Boyd, R. Houim, & K.K. Kuo</i>	
Environmental Characterization of Military Training Ranges for Munitions-Related Contaminants: Understanding and Minimizing the Environmental Impacts of Live-Fire Training	17
<i>S. Thiboutot, G. Ampleman, S. Brochu, E. Diaz, I. Poulin, R. Martel, J. Hawari, G. Sunahara, M.R. Walsh, M.E. Walsh, & T.F. Jenkins</i>	
Evaluation of GIM as a Greener Insensitive Melt-Cast Explosive	59
<i>G. Ampleman, P. Brousseau, S. Thiboutot, S. Rocheleau, F. Monteil-Rivera, Z. Radovic-Hrapovic, J. Hawari, G. Sunahara, R. Martel, S. Coté, S. Brochu, S. Trudel, P. Béland, & A. Marois</i>	
Gas Temperature Measurement at the Exit Plane of a Typical Gas Turbine Combustor	89
<i>C.-É. Paul, A. deChamplain, & B. Paquet</i>	

ISSUE 2	
Glycidyl Azide Polymer and Polyethylene Glycol Mixtures as Hybrid Rocket Fuels	97
<i>K. Hori, Y. Nomura, K. Fujisato, T. Yagishita, M. Nishioka, Y. Wada, & M. Kimura</i>	
Experimental Investigation of Metalized Solid Fuel Ramjet Combustor	107
<i>S. Saraf & A. Gany</i>	
NG Plasticized PE–PCP Binder-Based Advanced Solid Rocket Propellants: Studies on Mechanical Properties	123
<i>S.M. Pande, V.S. Sadavarte, D. Bhowmik, & H. Singh</i>	
Investigation of Nanoporous Silicon–Based Energetic Materials	135
<i>E.(Golda) Fradkin & A. Gany</i>	
Equations of State of Silicon, Boron, and Halogen Species for Accurate Detonation Calculations	149
<i>L.I. Stiel, E.L. Baker, & D.J. Murphy</i>	
Experiments in Diluted Premixed Turbulent Stagnation Flames for Gas-	165

Turbine Engine Applications*S.D. Salusbury & J.M. Berghorson*

- Elimination of Residual Propellant Gas in a Gun-Launched Missile Chamber with Inert Gas** 181
B. Xu, Z.-T. Liu, D.-D. Ji, X. Liao, & Z.-S. Wang
-

ISSUE 3

- High Explosive Thermodynamic Equations of State Calibration for Broad Application** 197
G. Stunzenas, E.L. Baker, L.I. Stiel, D. Murphy, & A. Enea
- A Novel Hybrid Binder System for Extrudable Composite Propellant** 209
V.D. Deuskar, K.S. Mulage, A.K. Mishra, R.N. Patkar, S.H. Kharat, & S.D. Kakade
- Synthesis, Characterization, and Reaction Kinetics of Nano-Structured Mg-V-Ni Composites for Solid-State Hydrogen Storage** 221
K.G. Bambhaniya, G.S. Grewal, V. Shrinet, N.L. Singh, & T.P. Govindan
- Hydroxylammonium Nitrate as Green Propellant: Decomposition and Stability** 241
R. Amrousse, T. Katsumi, T. Sulaiman, B.R. Das, H. Kumagai, K. Maeda, & K. Hori
- Combustion of Bimodal Aluminum Particles and Ice Mixtures** 259
T.L. Connell, Jr., G.A. Risha, R.A. Yetter, V. Yang, & S.F. Son
- On Gas Release by Thermally-Initiated Fully-Dense 2Al·3CuO Nanocomposite Powder** 275
R.A. Williams, M. Schoenitz, A. Ermoline, & E.L. Dreizin
-

ISSUE 4

- Laser Ignition Properties of Composite Nanometric Energetic Materials** 293
S.C. Stacy & M.L. Pantoya
- Innovative Metal Fuels for Solid Rocket Propulsion** 299
S. Dossi, A. Reina, F. Maggi, & L.T. De Luca
- Glycidyl Azide Polymer - Combustion Mechanism and Its Application to Hybrid Rocket Motors** 323
K. Hori & M. Nishioka
- Oxidation, Ignition and Combustion of Al-Hydrocarbon Composite Reactive Powders** 353
S. Zhang, M. Schoenitz, & E.L. Dreizin
- Effect of Ballistic Modifiers on the Burn Rate of Extruded Composite Propellant Formulations Based on Thermoplastic Elastomeric Binder** 375
K.S. Mulage, A.K. Mishra, R.N. Patkar, S.H. Kharat, P.K. Khanna, & S.D. Kakade
-

ISSUE 5

Thermoelectric Pulse Power Generation Using Self-Sustaining Gasless Nanoreactant Systems	389
<i>J.A. Puszynski, R. Shende, & M. Bichay</i>	
Formation of Consolidated Nanothermite Materials Using Support Substrates and/or Binder Materials	401
<i>J.A. Puszynski, C.J. Bulian, J.J. Swiatkiewicz, & D. Kapoor</i>	
Deformation-Induced Hot-Spot Consequences of AP and RDX Crystal Hardness Measurements	413
<i>R.W. Armstrong, S.G. Bardenhagen, & W.L. Elban</i>	
Combustion Mechanism of Energetic Binders with Nitramines	427
<i>V.P. Sinditskii, V.Yu. Egorshv, V.V. Serushkin, & S.A. Filatov, A.N. Chernyi</i>	
Combustion of PTFE-Boron Compositions for Propulsion Applications	451
<i>G. Young, C.A. Stoltz, B.P. Mason, V.S. Joshi, R.H. Johansson, T.L. Connell, Jr., G.A. Risha, & R.A. Yetter</i>	
Transient Burning Behavior of Phase-Stabilized Ammonium Nitrate Based Airbag Propellant	473
<i>J.T. Essel, E. Boyer, K.K. Kuo, & B. Zhang</i>	

ISSUE 6

A Computational Study of a Dual-Mode Ramjet Combustor with a Cavity Flameholder	487
<i>C. Fureby, J. Tegnér, R. Farinaccio, R. Stowe, & D. Alexander</i>	
Investigation of Solid Oxidizer and Gaseous Fuel Combustion Performance Using an Elevated Pressure Counterflow Experiment for Reverse Hybrid Rocket Engine	511
<i>R.H. Johansson, T.L. Connell, Jr., G.A. Risha, R.A. Yetter, & G. Young</i>	
Melt Cast Explosive Friability Studies	537
<i>A.I. Atwood, K.P. Ford, M.T. Gennrich, Q.T. BuiDang, C.J. Wheeler, E. Woods & A.L. Daniels</i>	
Characteristics of Chemically Modified and Nanocomposite Polymers as Novel Fuels for Hybrid Rocket Propulsion	549
<i>K. Kitagawa, P. Joseph, V. Novozhilov, & T. Shimada</i>	
Gas and Particulate Emissions from Live-Firings during Military Training	567
<i>E. Diaz, S. Savard, & I. Poulin</i>	

International Journal of Energetic Materials and Chemical Propulsion

VOLUME 11, AUTHOR INDEX

Page Range of Issues

Issue 1: 1–95; Issue 2: 97–195; Issue 3: 197-292; Issue 4: 293-388

Issue 5: 389-486; Issue 6: 487-582

Alexander, D., 487	Gennrich, M.T., 537	Reina, A., 299
Ampleman, G., 17, 59	Govindan, T.P., 221	Risha, G.A., 259, 451, 511
Amrousse, R., 241	Grewal, G.S., 221	Rocheleau, S., 59
Amrstrong, R.W., 413	Hawari, J., 17, 59	Sadavarte, V.S., 123
Atwood, A.I., 537	Hori, K., 97, 241, 323	Salusbury, S.D., 165
Baker, E.L., 149, 197	Houim, R., 1	Saraf, S., 107
Bambhaniya, K.G., 221	Jenkins, T.F., 17	Savard, S., 567
Bardenhagen, S.G., 413	Ji, D.-D., 181	Schoenitz, M., 275, 353
Béland, P., 59	Johansson, R.H., 451, 511	Serushkin, V.V., 427
Bergthorson, J.M., 165	Joseph, P., 549	Shende, R., 389
Bhowmik, D., 123	Joshi, V.S., 451	Shimada, T., 549
Bichay, M., 389	Kakade, S.D., 209, 375	Shrinet, V., 221
Boyd, E., 1	Kapoor, D., 401	Sinditskii, V.P., 427
Boyer, E., 473	Katsumi, T., 241	Singh, H., 123
Brochu, S., 17, 59	Khanna, P.K., 375	Singh, N.L., 221
Brousseau, P., 59	Kharat, S.H., 209, 375	Son, S.F., 259
BuiDang, Q.T., 537	Kimura, M., 97	Stacy, S.C., 293
Bulian, C.J., 401	Kitagawa, K., 549	Stiel, L.I., 149, 197
Chernyi, A.N., 427	Kumagai, H., 241	Stoltz, C.A., 451
Connell, Jr., T.L., 259, 451, 511	Kuo, K.K., 1, 473	Stowe, R., 487
Coté, S., 59	Liao, X., 181	Stunzenas, G., 197
Daniels, A.L., 537	Liu, Z.-T., 181	Sulaiman, T., 241
Das, B.R., 241	Maeda, K., 241	Sunahara, G., 17, 59
deChamplain, A., 89	Maggi, F., 299	Swiatkiewicz, J.J., 401
De Luca, L.T., 299	Marois, A., 59	Tegnér, J., 487
Deuskar, V.D., 209	Martel, R., 17, 59	Thiboutot, S., 17, 59
Diaz, E., 17, 567	Mason, B.P., 451	Trudel, S., 59
Dossi, S., 299	Mishra, A.K., 209, 375	Wada, Y., 97
Dreizin, E.L., 275, 353	Monteil-Rivera, F., 59	Walsh, M.E., 17
Egorshv, V.Yu., 427	Mulage, K.S., 209, 375	Walsh, M.R., 17
Elban, W.L., 413	Murphy, D.J., 149, 197	Wang, Z.-S., 181
Enea, A., 197	Nishioka, M., 97, 323	Wheeler, C.J., 537
Ermoline, A., 275	Nomura, Y., 97	Williams, R.A., 275
Essel, J.T., 473	Novozhilov, V., 549	Woods, E., 537
Farinaccio, R., 487	Pande, S.M., 123	Xu, B., 181
Filatov, S.A., 427	Pantoya, M.L., 293	Yagishita, T., 97
Ford, K.P., 537	Paquet, B., 89	Yang, V., 259
Fradkin, E., 135	Patkar, R.N., 209, 375	Yetter, R.A., 259, 451, 511
Fujisato, K., 97	Paul, C.-É., 89	Young, G., 451, 511
Fureby, C., 487	Poulin, I., 17, 567	Zhang, B., 473
Gany, A., 107, 135	Puszynski, J.A., 389, 401	Zhang, S., 353
	Radovic-Hrapovic, Z., 59	

International Journal of Energetic Materials and Chemical Propulsion

VOLUME 11, SUBJECT INDEX

Page Range of Issues		
Issue 1: 1–95; Issue 2: 97–195; Issue 3: 197-292; Issue 4: 293-388		
Issue 5: 389-486; Issue 6: 487-582		
activated aluminum, 299	413	hydrocode, 197
activation energy, 549	dynamic burning, 473	hydrogen generation, 259
aero-gas turbine, 89	ecotoxicology, 17	hydrogeology, 17
airbag inflators, 473	elastomer, 59	Hydroxyl ammonium nitrate
air emissions, 567	energetic binder, 427	(HAN), 241
Al-based composites, 353	energetic materials, 1, 135	ignition, 275, 389, 401
aluminum combustion, 1	energetic nanocomposites,	ignition delay time, 293
aluminum powder, 107	389, 401	inert gas, 181
ammonium nitrate, 473	energy-dispersive X-ray	irostic°R , 375
ammonium perchlorate (AP),	spectrometer (EDS), 221	Jones–Wilkins–Lee–Baker
413, 511	environmental impact, 17	equation of state (JWL),
analysis, 549	equation of state, 149	197
aqueous mixtures, 241	experimental rubbery TNT	Kissinger method, 549
artillery live-firing, 567	(XRT), 59	large-eddy simulation, 487
ballistic performance, 299	explosion limit, 181	leading reaction of
blast, 197	explosives, 17, 197	combustion, 427
boron, 451	extruded composite propellant	live fire, 17
burning rate, 427, 537	(ECP), 209, 375	mechanical milling, 353
burn rate modifiers, 375	extrusions, 209	mechanical properties, 123
catalytic decomposition, 241	flammability elimination, 181	melt cast, 537
characterization, munitions, 17	flamelet, 165	metal combustion, 353
chemistry, 149	fluoropolymers, 209	metal ignition, 353
combustibility analysis, 181	friability, 537	modulus, 123
combustion, 537	fuels, 241	munitions constituents, 17
combustion mechanism, 323,	gas release, 275	nanoaluminum, 299
427	gas temperature measurement,	nanocomposite thermite, 275
combustion rates, 259	89	nanoporous silicon, 135
combustor exit plane, 89	glass transition temperature,	nano-sized composite, 221
composite formulations, 413	123	nanothermites, 389, 401
copolymerization, 549	glycidyl azide polymer (GAP),	Navier–Stokes models, 487
crystal size dependence, 413	59, 97, 323	nitramines, 427
cyclotrimethylenetrinitramine	grafting, 549	nitro esters, 427
(RDX), 413	green insensitive munitions	nickel-coated aluminum, 1
degradation, 549	(GIM), 59	numerical simulation, 323
deposition rate, 17	green propellants, 259	open burning, 567
demilitarization, 567	hardness, 413	open detonation, 567
detonation, 149	heat capacity, 293	particle contiguity, 413
differential scanning	high-energy ball milling, 221	percent elongation, 123
calorimeter (DSC), 221	hot spots, 413	poly ethylene glycol (PEG), 97
dilution, 165	hybrid rocket, 323, 451, 549	polyurethanes, 209
dislocation pileup avalanches,	hybrids, 97	propellant gas, 181

propellants, 17
propulsion, 259
ramjet, 107
ramjet combustion, 487
rapid pressure excursions, 473
Rayleigh scattering, 165
reaction zone, 165
real-time x-ray radiography,
473
regression rate, 97
reverse hybrid, 511
scanning electron microscope
(SEM), 221
scramjet transition, 487
Semi volatile organic (SVOC),
567
shape factor, 299
solid fuel, 107, 451
solid hydrogen storage, 259
solid propellant, 299
Teflon, 451
tensile strength, 123
thermal analysis, 353
thermal decomposition, 241
thermite, 293
thermogravimetric, 549
thermoplastic, 59
thermoplastic elastomers
(TPEs), 209, 375
training ranges, 17
turbulent burning, 165
turbulent premixed flame, 165
ultrasonic measurement, 323
unexploded ordnances, 17
velocity, 165
velocimetry, 165
Volatile organic compound
(VOC), 567
X-ray diffraction (XRD), 221

International Journal of Energetic Materials and Chemical Propulsion

VOLUME 11, REVIEWERS LIST

The Editorial Board of the *International Journal of Energetic Materials and Chemical Propulsion* would like to thank the following reviewers for their reviews and their help in establishing a high-quality review process.

Alex Tappan
Alexander Moukasian
Arie Peretz
Arif Karabeyoglu
Art Fortini
Brian Evans
Carmine Carmicino
Charles Dubois
Christian Perut
Ed Dreizin
Evgeny Shafirovich
Grant Risha
Gregory Young
Igor Assovski
Joe Majdalani
John Zevenbergen
Kenneth K. Kuo
Kyle Sullivan
Lei Zhou

Luciano Galfetti
Luigi DeLuca
Martin Chiaverini
Michael Zachariah
Michel Hayek
Mike Russo
Monique Van Hulst
Paul Anderson
Philip Leonard
Ronald Armstrong
Savely Khosid
Steven Son
Subramaniam Krishnan
Susan Taylor
Tony Saad
Victor Abrukov
Virginia Manner
Vladica Bozic