

Eighth International Symposium on Special Topics in Chemical Propulsion (8-ISICP)

TECHNICAL PROGRAM **“Advancements in Energetic Materials & Chemical Propulsion”**

November 2-6, 2009

Cape Town International Convention Centre (CTICC)
Convention Square, 1 Lower Long Street, Cape Town, 8001, South Africa
Phone: 27-21-410-5000, Fax: 27-21-410-5001

Monday, November 2, 2009	
15:00 18:00	On-Site Registration & Check-In Clivia Conservatory & Jasminium Restaurant
18:00 20:00	Welcome Reception Clivia Conservatory & Jasminium Restaurant

Tuesday Morning, November 3, 2009			
8:30	Roof Terrace Room	SYMPOSIUM OPENING – Prof. Kenneth K. Kuo, Prof. Hansie Knoetze, and Dr. Deon van Zyl	
8:50	8-ISICP Invited Plenary Lecture	<i>Session Chair: Prof. Kenneth K. Kuo</i>	
9:35	Roof Terrace Room	Prof. Charles Kappenstein of the University of Poitiers, France “Propulsion and Catalysis - Historical Survey, up-to-date Overview and Current Challenges” (Log #181)	
	Roof Terrace Room (Session 1)	Room 2.61-2.63 (Session 2)	Room 2.65-2.66 (Session 3)
	Nano-Technology & Innovative Methods in Energetic Material Development Topic 1 <i>Co-Chairs: Prof. C. Kappenstein & Dr. B. Tappan</i>	Ignition and Initiation Processes Topic 11 <i>Co-Chairs: Drs. P. Nel & A. Atwood</i>	Theoretical Modeling & Numerical Simulation for Chemical Propulsion Topics Topic 6 <i>Co-Chairs: Prof. M.C. Lin & Dr. J.E. Boyer</i>
9:35	Development of Metallic Nanoparticles Based Energetic Materials: A Review (Log #130) <i>P. Joulain, V. An, and H. El-Rabii</i>	Design of a Modular Test Chamber for the Analysis of Flame Spreading Rates, Black Powder Jet Penetration, and Vent-Hole Geometry into a Granular Bed (Log #173) <i>A. Colletti, E. Boyer, K.K. Kuo, and R. Acharya</i>	A Creation of Propellant Combustion Models by Means of Data Mining Tools (Log #118) <i>V.S. Abrukov, K.K. Riskov, and V.A. Shushkanov</i>
9:55	Nano-RDX Synthesis by RESS Process and Sensitivity Characterization (Log #149) <i>A. Cortopassi, T. Wawiernia, J. Essel, P. Ferrara, K.K. Kuo, and R.M. Doherty</i>	Radiative Ignition of Solid Propellants (Log #151) <i>F. Cauty, Y. Fabignon, and C. Eradès</i>	Mathematical Modeling of Alpha-Iron Coated Pyrophoric Substrates (Log #188) <i>J.A. Puszynski, Z. Doorenbos, D. Kapoor, and C. Haines</i>
10:15	Roof Terrace Foyer	COFFEE BREAK	
10:35	8-ISICP Invited Plenary Lecture	<i>Session Chair: Prof. Hansie Knoetze</i>	
11:20	Roof Terrace Room	Prof. Thomas Klapötke of the Ludwig-Maximilians-University of Munich, Germany “High-Nitrogen and High-Oxygen Explosives as Possible Replacements for RDX” (Log #102)	
	Roof Terrace Room (Session 4)	Room 2.61-2.63 (Session 5)	Room 2.65-2.66 (Session 6)
	Nano-Technology & Innovative Methods in Energetic Material Development Topic 1 <i>Co-Chairs: Drs. R. Caro & D. Chavez</i>	Ignition and Initiation Processes Topic 11 <i>Co-Chairs: Drs. A. Peretz & A. Atwood</i>	Theoretical Modeling & Numerical Simulation for Chemical Propulsion Topics Topic 6 <i>Co-Chairs: Profs. J.A. Puszynski & R.A. Yetter</i>
11:20	Improved Munitions Development by Novel Techniques (Log #209) <i>J.H.G. Scholtes, W.P.C. de Klerk, C.A. van Driel, and M. Zebregs</i>	Improvement of a Turbine Engine Start by an External Oxygen-Rich Gas Generator (Log #109) <i>A. Peretz, S. Khosid, and A.H. Gross</i>	Dynamical Simulation of Burnt Zone of Metallized Composite Propellants (Log #162) <i>S. Rashkovskiy</i>
11:40	Synthesis and Characterization of Coated Energetic Materials Using a RESS System (Log #137) <i>J. Essel, A. Cortopassi, and K.K. Kuo</i>	Convective Burning Studies of Pyrotechnic Powders (Log #145) <i>A.I. Atwood, P.O. Curran, K. P. Ford, J.F. Moxnes, and G. Odegardstuen</i>	Modeling of Self-Ignition, Structure and Velocity of Free Propagation Flame of Hydrogen Azide (Log #166) <i>O.P. Korobeinichev, N.V. Budachov, A.A. Paletsky, T.A. Bolshova, and V.D. Knyazev</i>
12:00	Application of Nanometer Materials for Propellants, Pyrotechnics and Explosives (Log #178) <i>F. Li, X. Guo, W. Jiang, L. Liu, Z. Ma, and W. Chen</i>	Suppression of Dust Explosions by Means of Active Super Fast Explosion Suppression System of 5 Litres Volume (Log #180) <i>M. Gieras, M. Kaluzny, and R. Klemens</i>	Factors affecting Combustion Behaviour of Metal Powder in Fuel Rich Propellants of Ramjet Rockets : A Fresh Look (Log #119) <i>H. Shekhar and H. Singh</i>
12:20	Mutual Influence of Nanometal Additives on Heat Release Rate in Condensed Systems (Log #110) <i>V.F. Komarov, G. V. Sakovich, A.B. Vorozhtsov, A.G. Vakutin, M. V. Komarova</i>	Internal Ballistic Simulation of a 40mm Round (Log #194) <i>J. Kriel, C. Muller, V. Schabort, and J. Goosen</i>	
12:40	Clivia Conservatory & Jasminium Restaurant	LUNCH	

Tuesday Afternoon, November 3, 2009

14:00 14:45	8-ISICP Invited Plenary Lecture Roof Terrace Room Prof. Valery Sinditskii of the Mendeleev University of Chemical Technology, Russia <i>Session Chair: Prof. Kenneth K. Kuo</i> “Combustion of Energetic Materials Governed by the Reactions in the Condensed Phase” (Log #106)		
14:45	Roof Terrace Room (Session 7) Nano-Technology & Innovative Methods in Energetic Material Development <u>Topic 1</u> <i>Co-Chairs: Profs. V. Sinditskii & L. DeLuca</i>	Room 2.61-2.63 (Session 8) Performance Evaluation of Propellants <u>Topic 7</u> <i>Co-Chairs:</i> <i>Profs. T. Klapötke & A. Gany</i>	Room 2.65-2.66 (Session 9) Theoretical Modeling & Numerical Simulation of Nozzle Erosion <u>Topic 6</u> <i>Co-Chairs: Dr. C Bedford & Prof H. Knoetze</i>
14:45 15:05	High-Nitrogen-Metal Complexes As Burning-Rate Modifiers For The Aluminum-Water Propellant System (Log #215) <i>B.C. Tappan and B.A. Mason</i>	Thermal Decomposition Behaviour of Ammonium Nitrate and Carbon Mixtures (Log #168) <i>A. Miyake and Y. Izato</i>	Effect of Reaction Kinetic Schemes on Graphite Rocket Nozzle Erosion Rates (Log #142) <i>R. Acharya and K.K. Kuo</i>
15:05 15:25	Combustion of Bimodal Al and Ice Mixtures (Log #216) <i>T.L. Connell, Jr., G.A. Risha, R.A. Yetter, S.F. Son, and V. Yang</i>	Combustion Characteristics of HAN Solutions (Log #169) <i>T. Katsumi, R. Matsuda, T. Inoue, H. Ogawa, N. Tsuboi, and K. Hori</i>	Coupling of Transient Heating and Induced Stresses Computations in Graphite Nozzle Materials (Log #150) <i>R. Acharya, B. Evans, J. Pitt, F. Costanzo, and K.K. Kuo</i>
15:25	Roof Terrace Foyer COFFEE BREAK		
15:45	Roof Terrace Room (Session 10) Synthesis & Characterization of Energetic Materials <u>Topic 2</u> <i>Co-Chairs: Prof. L. DeLuca & Mr B. Kosowski</i>	Room 2.61-2.63 (Session 11) Performance Evaluation of Propellants <u>Topic 7</u> <i>Co-Chairs:</i> <i>Profs. T. Klapötke & A. Gany</i>	Room 2.65-2.66 (Session 12) Theoretical Modeling & Numerical Simulation for Chemical Propulsion Topics <u>Topic 6</u> <i>Co-Chairs: Dr. C. Bedford & Prof H. Knoetze</i>
15:45 16:05	Compatibility of Ammonium Dinitramide (ADN) with Polymeric Binders Studied by Thermoanalytical Methods (Log #175) <i>G. Santhosh and H.G. Ang</i>	Reduced Agglomeration Resulting from Nickel Coating of Aluminum Particles in Solid Propellants (Log #160) <i>Y. Yavor, V. Rosenband, and A. Gany</i>	First-Principles Study of Water Effect on the Sublimation of Ammonium Perchlorate (Log #174) <i>R. Zhu and M.C. Lin</i>
16:05 16:25	Boron-rich Fuels for Gas Generators and Propellants (Log #208) <i>R.J. Pontes Lima, C. Dubois, O. Mader, R. Stowe, and S. Ringuette</i>	Ballistics of Metallized Solid Rocket Propellants (Log #200) <i>L.T. DeLuca, E. Marchesi, M. Spreafico, A. Bandera, F. Maggi and B.M. Kosowski</i>	Numerical Calculations Predicting Solid Propellant Ingredient Interactions (Log #131) <i>M. Gross and M. Beckstead</i>
16:25 16:45	Characterization and Comparison of Two HTPE Pre-polymers (Log #172) <i>R. Caro and J.M. Bellerby</i>	On the Influence of Microstructure of Heterogeneous Explosive Materials on Their Detonation Behaviour (Log #203) <i>S.A. Kolesnikov, A.V. Ananin, V.M. Mochalova, A.V. Utkin</i>	Mechanical Properties of Composite Propellants and Effect of Propellant Stretch on Its Burn Rate (Log #163) <i>S. Rashkovskiy, A.V. Fedorychev, Y.M. Milyokhin and A.N. Klyuchnikov</i>
16:45 17:05	Controlled Synthesis of Nitrogen-Doped Carbon Nanotubes for Nanoscale Ems (Log #129) <i>H. Liu, H. Abou-Rachid, Y. Zhang, Y. Zhong, M. Ionescu, R. Li, A.X. Sun, and L. Lussier</i>	The Influence of Spherical Granular Propellants on the Combustion Properties of High-Burning-Rate Propellant (Log #179) <i>X. Guo, F. Li, W. Jiang, and L. Zhao</i>	Excitation of Hydrodynamic Micro-Structures During Energetic Materials Unsteady Combustion and Phenomenon of Waves of Negative Erosion (Log #120) <i>A. Lukin</i>
17:05 17:25		Temperature Insensitive Propulsion System (TIPS®) based on SCDB® Propellant and new CCC Design of Cartridge 120mmx570 DM63 (Log #123) <i>K. Kratzsch and A. Huber</i>	

Wednesday Morning, November 4, 2009			
8:30 9:15	8-ISICP Invited Plenary Lecture Roof Terrace Room Dr. Fred Blomshield of the Naval Air Warfare Center, China Lake, California “Pressure Coupled Response of Solid Propellants” (Log #184)		<i>Session Chair: Dr. R.H. Woodward Waesche</i>
	Roof Terrace Room (Session 13)	Room 2.61-2.63 (Session 14)	Room 2.65-2.66
	Synthesis & Characterization of Energetic Materials Topic 2 <i>Co-Chairs: Dr. G. Ampleman & Prof. O.P. Korobeinichev</i>	Performance Evaluation of Propellants Burning Under Pressure Oscillations Topic 7 <i>Co-Chairs: Drs. F. Blomshield & L. Galfetti</i>	
9:15 9:35	Synthesis and Combustion Characteristics of Novel High Nitrogen Materials (Log #214) <i>D.E. Chavez and B.C. Tappan</i>	Mechanisms and Methods of Suppression of Combustion Instability (Log #219) <i>R.H.W. Waesche</i>	Poster Preparation
9:35 9:55	Reductive Debenzylation of 2,4,6,8,10,12-hexaazaisowurtzitane (Log #126) <i>S.V. Sysolyatin, A.I. Kalashnikov, G.V. Sakovich, I.A. Surmacheva, V.N. Surmachev, and V.V. Malykhin</i>	Improving the Method for Determination of an Admittance Function from Pulsed Tubular Grain Motor Tests (Log #198) <i>W. Rousseau and H. Knoetze</i>	
9:55 10:15		Burning Behaviour of Nitramine Gun Propellants Influenced by Pressure Oscillations (Log #167) <i>G. Pauly and R. Scheibel</i>	
10:15	Roof Terrace Foyer COFFEE BREAK		
10:35 11:20	8-ISICP Invited Plenary Lecture Roof Terrace Room Prof. Bo Janzon of SECRA Security Research, Sweden “Recent Advances in Energetic Materials in Sweden, Especially at the FOI” (Log #135)		<i>Session Chair: Prof. Kenneth K. Kuo</i>
	Roof Terrace Room (Session 15)	Room 2.61-2.63 (Session 16)	Room 2.65-2.66
	Recycling, Disposal, and Environmental Aspects Topic 9 <i>Co-Chairs: Prof. B. Janzon & Dr. G. Ampleman</i>	Performance Evaluation of Explosives Topic 7 <i>Co-Chairs: Drs. F. Blomshield & E.L. Baker</i>	
11:20 11:40	Less Sensitive and “Green” Propellant (Log #213) <i>C.F. Wiehahn</i>	Combined Effects Aluminized Explosives (Log #114) <i>S. Nicolich, L.I. Stiel, W. Balas, C. Cappellos, and J. Pincay</i>	Poster Preparation
11:40 12:00	Fate and Behavior of Propellant Residues in Water of the Unsaturated Zone under an Anti-Tank Firing Position (Log #183) <i>R. Martel, A. Bellavance Godin, G. Ampleman, S. Thiboutot, and L. Trépanier</i>	Development, Optimization and Application of Combined Effects Explosives (Log #112) <i>W. Balas, E.L. Baker, J. Pincay, S. Nicolich, and L.I. Stiel</i>	
12:00 12:20		Formic Acid Investigation for the Prediction of High Explosive Detonation Properties and Performance (Log #132) <i>E.L. Baker, L.I. Stiel, C. Cappellos, B.M. Rice, S.W. Bunte, and E.F.C. Byrd</i>	
12:40	Clivia Conservatory & Jasminium Restaurant LUNCH		
Wednesday Afternoon, November 4, 2009			

14:00	8-ISICP Invited Plenary Lecture	<i>Session Chair: Prof. Hansie Knoetze</i>
14:45	<u>Roof Terrace Room</u>	Dr. Guy Ampleman of Defense Research and Development Valcartier, Canada “Development of a New Generation of Insensitive Explosives and Gun Propellants” (Log #105)
	<u>Roof Terrace Room</u>	Poster Snapshot Session <i>Co-Chairs: Prof. H. Knoetze & Dr. D. van Zyl</i>
14:45	Each Poster Presenter have 2 minutes to make a brief presentation to highlight his/her paper. There will be no time allowed for questions. Questions can be asked to the Poster Presenters during the Poster Session. The poster snapshot presentations will be made in the same chronological order as indicated in the list of poster presentations on pages 30 & 31.	
15:45		
15:45	<u>Roof Terrace Foyer</u>	COFFEE BREAK
16:05		
	<u>Room 265-266</u>	Poster Session <i>Co-Chairs: Prof. H. Knoetze & Dr. D. van Zyl</i>
16:05	See list of poster presentations on pages 8 & 9	
17:00		
18:30	Bus departs from CTICC for Chairman’s Dinner	
19:00	Chairman’s Dinner at On the Rocks Restaurant, Bloubergstrand	

Thursday Morning, November 5, 2009			
8:30 9:15	8-ISICP Invited Plenary Lecture Roof Terrace Room		<i>Session Chair: Prof. Kenneth K. Kuo</i>
Prof. Brian Cantwell of Stanford University, Palo Alto, California “Modern Developments in Hybrid Propulsion” (Log #182)			
	Roof Terrace Room (Session 17)	Room 2.61-2.63 (Session 18)	Room 2.65-2.66 (Session 19)
	Hybrid Rocket Propulsion Techniques <u>Topic 14</u> <i>Co-Chairs:</i> <i>Prof. B. Cantwell & Dr. J.E. Boyer</i>	Rocket Thermal Protection Materials <u>Topic 15</u> <i>Co-Chairs:</i> <i>Dr. D. van Zyl & Mr. F. Cauty</i>	Test Methods & Diagnostic Techniques in Chemical Propulsion & Energetic Materials <u>Topic 10</u> <i>Co-Chairs: Drs. F. Mostert & Prof. M.R. Zachariah</i>
9:15 9:35	Fuel Regression Rate Behavior in Swirling-Oxidizer-Flow-Type Hybrid Rocket Engines (Log #143) <i>S. Yuasa, M. Sakamoto, C. Sezaki, T. Sakurai, N. Shiraishi, and T. Shimada</i>	Determination of Total Surface Heat Flux to Thermal Protection Materials in Solid Rocket Motors via Inverse Heat Conduction Analysis (Log #156) <i>H. Martin, K.K. Kuo, R. Houim, and M. Degges</i>	Munition Health Monitoring – Principles and Evaluation of Ammunition Stress Data Gathered under Operational Conditions (Log #122) <i>K. Kratzsch</i>
9:35 9:55	Investigation of Paraffin-Based Fuels in Hybrid Combustors (Log #158) <i>A. Weinstein and A. Gany</i>	A Novel Radiative Heat Flux Measurement Technique for Combustion Products Flowing in Solid Rocket Motors (Log #157) <i>H. Martin, K.K. Kuo, R. Houim, and M. Degges</i>	Lidar Detection of Explosives Vapors Using Excimer Laser (Log #127) <i>S. Bobrovnikov, E. Gorlov, G. Sakovich, and A. Vorozhtsov</i>
9:55 10:15	Hybrid Rocket using GAP as a Solid Fuel (Log #164) <i>K. Hori, Y. Nomura, K. Fujisato, T. Yagishita, K. Hasegawa, K. Kobayashi, M. Nishioka, Y. Wada and M. Kimura</i>	A Study on the Fabrication Process, the Heat Transfer and Ablation Analysis for Solid Rocket Motor Nozzle Thermal Liners (Log #161) <i>J. Kim, J. Lee, T. Rho, W. Lee, H. Suh, and Y. Rhee</i>	Regression Rates and CCPs Measurement of Metallized Solid Fuels (Log #201) <i>L. Galfetti, L. DeLuca, L. Merotto, M. Boiocchi, and C. Paravan</i>
10:15	Roof Terrace Foyer COFFEE BREAK		
10:35 11:20	8-ISICP Invited Plenary Lecture Roof Terrace Room		<i>Session Chair: Prof. Hansie Knoetze</i>
Dr. Frederik Mostert of the Council for Scientific and Industrial Research, South Africa “Detonics and Ballistics in South Africa : A Past, Present and Future Perspective” (Log #140)			
	Roof Terrace Room (Session 20)	Room 2.61-2.63 (Session 21)	Room 2.65-2.66 (Session 22)
	Formulation, Processing, and Manufacturing of Energetic Materials <u>Topic 3</u> <i>Co-Chairs: Profs. P. Vashishta & F. Li</i>	Insensitive Munitions <u>Topic 4</u> <i>Co-Chairs:</i> <i>Dr. E.L. Baker & Dr. R. Bouma</i>	Thermobarics and Thermites <u>Topic 13</u> <i>Co-Chairs:</i> <i>Dr. F. Mostert & Prof. A. Gany</i>
11:20 11:40	Analysis of Thermoplastic Propellants Based on Novel Binder System (Log #159) <i>V. Bozic and I. Krakovsky</i>	Explosive Venting Technology for Cook-Off Response Mitigation (Log #111) <i>E.L. Baker, T. Madsen, S. DeFisher, D. Suarez, N. Al-Shehab, A. Wilson and B. Fuchs</i>	Probing Reaction Dynamics in Nanothermites (Log #125) <i>L. Zhou, N. Piekiet, S. Chowdhury, and M.R. Zachariah</i>
11:40 12:00	A New Class of Bonding Agents for High Energy Propellants (Log #190) <i>B.M. Kosowski, J. Consaga, and A. Condo</i>	Formulation & Development of an Explosive that Allows Conventional 155mm Projectiles to Achieve IM Status (Log 108) <i>S. Singh, P. Samuels, A. Di Stasio, B. Fishburn, & P. Vinh</i>	Formation of Nanothermite Structures Using Various Support Substrates and Binder Materials (Log #187) <i>J.A. Puszynski, C.J. Bulian, and J.J. Swiatkiewicz</i>
12:00 12:20	Control of Main Characteristics of Composite Propellants Based on Ammonium Nitrate by Nano-sized Metal Powders (Log #134) <i>A. Zharkov, G. Sakovich, A. Vorozhtsov, B. Pevchenko, V. Popok, and N. Popok</i>	Booster Candidates for IM Application at Rheinmetall Denel Munition (RDM) (Log #189) <i>C.E. du Toit</i>	Thermoelectric Pulse Power Generation Using Self-Sustaining Gasless Nanoreactant Systems (Log #192) <i>J.A. Puszynski, R. Shende, and M.M. Bichay</i>
12:20 12:40		Mitigation Techniques for Reduced Rocket Motor Vulnerability against External Thermal Stimuli (Log #210) <i>Benjamin T. Smit</i>	High-Reactivity Aluminum Powders (Log #141) <i>V. Rosenband and A. Gany</i>
12:40	Clivia Conservatory & Jasminium Restaurant LUNCH		

Thursday Afternoon, November 5, 2009			
14:00 14:45	8-ISICP Invited Plenary Lecture Roof Terrace Room		<i>Session Chair: Prof. Richard A. Yetter</i> Prof. Priya Vashishta of the University of Southern California “Fast Reaction Mechanism of an Al/Al₂O₃ Nanoparticle in Oxygen” (Log #221)
	Roof Terrace Room (Session 23) Advanced Propulsion Systems & Thermites Topic 18 & 13 <i>Co-Chairs:</i> <i>Prof. K. Hori & Dr. F. Mostert</i>	Room 2.61-2.63 (Session 24) Rocket Nozzles Topic 15 <i>Co-Chairs:</i> <i>Profs. R.A. Yetter & M.C. Lin</i>	Room 265-266
14:45 15:05	Experimental Investigation of Metallized Solid Fuel Ramjet Combustor (Log #144) <i>S. Saraf and A. Gany</i>	Phase Transformation of Graphite at High Surface Temperatures (Log #138) <i>J. Essel, R. Acharya, J. Sabourin, B. Zhang, K.K. Kuo, and R.A. Yetter</i>	
15:05 15:25	Thermal Reactivity of Al/Fe Core-Shell Composite (Log #177) <i>W. Jiang, F. Li, Y. Wang, X. Guo, Z. Cheng, and X. Zhang</i>	Characterization of Nozzle Erosion Behavior under Rocket Motor Operating Conditions (Log #133) <i>B. Evans, K.K. Kuo, E. Boyd, and A. Cortopassi</i>	
15:25 15:45	Roof Terrace Foyer COFFEE BREAK		
15:45 16:45	Room 261-263 Chairman’s Meeting		
16:45 17:25	Roof Terrace Room Future Symposium Site Selection & Best Paper Awards		
18h15	Buses depart from CTICC for Symposium Dinner		
19:00 22:00	Symposium Dinner at African Themed Restaurant Moyo at Spier		

Poster Presentations [November 4, 2009]
Snapshot presentations in Roof Terrace Room: 14:45-15:45
Poster Presentation in Room 2.65-2.66: 16:05 – 17:00
Co-Chairs: Dr. Deon van Zyl & Prof. Hansie Knoetze

1. *A.V. Vorontsov, A.S. Besov, N.A. Krivova, V.N. Parmon, A.B. Vorozhtsov, and V. Komarov*, **“Fast Adsorptive-Photocatalytic Air Decontamination from Chemical Agents with Nanosize Aerosols Generated by Combustion or Explosion,”** (Log #103) – Area 1
2. *Deon Steyn*, **“Extruded Thermoplastic Elastomer Composite Propellant for IR Decoy Flare Applications,”** (Log #193) – Area 3
3. *Bernard C. Halls*, **“Munitions Safety Information Analysis Center,”** (Log #104) – Area 4
4. *Anthony Ralph Di Stasio, Sanjeev Singh, Philip Samuels, and Victor Stepanov*, **“Nano-energetics for Insensitive Booster Explosives,”** (Log #107) – Area 4
5. *Sanjeev Singh, Philip Samuels, Anthony Di Stasio, Barry Fishburn, and Paul Vinh*, **“Formulation and Development of an Explosive that Allows Conventional 155mm Projectiles to Achieve IM Status,”** (Log #108) – Area 4
6. *Omar Abbassi, Sanjeev Singh, Philip Samuels, and Anthony Di Stasio*, **“IM Comp A5 Replacement,”** (Log #116) – Area 4
7. *Amy Chau, Sanjeev Singh, Philip Samuels, and Anthony Di Stasio*, **“IM H6 Replacement,”** (Log #117) – Area 4
8. *Melinda Diedericks*, **“STANAG 4170 Qualification of Insensitive PBX Formulations,”** (Log #185) – Area 4
9. *Deon van Zyl*, **“Insensitive Composite Propellants Based on a HTPE Binder System,”** (Log #191) – Area 4
10. *Khalifa Al-Kaabi and Albert J. van Reenen*, **“Control Radical Polymerization Techniques for Synthesis of Energetic Thermoplastic Elastomers,”** (Log #197) – Area 4
11. *Rodrigo R. Rapozo*, **“Semi-Analytical Model for Subsonic Tailpipe flow: Considerations on SRM Performance”,** (Log #206) Area 6
12. *Izak M. Snyman*, **“The Scaling of Peak Over-Pressure of Small Spherical Charges,”** (Log #202) – Area 7

13. *Gregory Young, Grant A. Risha, and Richard A. Yetter*, “**Combustion of ALANE-Based Solid Fuels,**” (Log #217) – Area 7
14. *Alexander V. Ananin, Sergey A. Koldunov, Victor V. Garanin, Vasily A. Sosikov and Sergey I. Torunov*, “**Shock Wave Sensitivity of Nitromethane Mixtures With Non-Explosives Liquids,**” (Log #218) – Area 7
15. *Vladimir A. Arkhipov, Sergey S. Bondarchuk, Alexander G. Korotkikh, Gennadiy V. Sakovich, and Alexander B. Vorozhtsov*, “**The Comparative Analysis of Nonstationary Burning Rate of Solid Propellants,**” (Log #124) – Area 10
16. *Katsuya Hasegawa and Keiichi Hori*, “**An Infrared and X-ray Diagnostic Study on the Combustion of Solid Propellants,**” (Log #139) – Area 10
17. *Sergey A. Koldunov and Alexander V. Ananin*, “**Detonation Characteristics of Nitromethane Diluted with Non-Explosive Liquids,**” (Log #199) – Area 12
18. *Saburo Yuasa, Takashi Sakurai, Koki Kitgawa, and Toshiaki Sakurzawa* “**LOX Vaporization Techniques for Swirling-Oxidizers-Flow-Type Hybrid Rocket Engines,**” (Log#153) –Area 14
19. *Luiz Eduardo Nunes de Almeida and Koshun Iha*, “**Characterization of Carbon Fiber Reinforced Composites Used in Rocket Motors,**” (Log #212) - Area 15

Technical Tour & Social Excursion

Friday, November 6, 2009	
7:30	Bus Departure from Conference Center
7:30	Tour of Cape Peninsula & Cape of Good Hope Nature Reserve (including Cape Point)
13:00	
13:00	Wine & Food Pairing Lunch
15:00	Neethlingshof Wine Estate
15:00	Visit to Cheetah Outreach & Eagle Encounters
17:00	Spier Wine Estate