

# 2013 INSENSITIVE MUNITIONS & ENERGETIC MATERIALS TECHNOLOGY SYMPOSIUM

**"Delivering Mission Critical, Innovative Inensitive Munitions and Energetic Materials Solutions to the Warfighter in a Challenging Budget Environment."**



CONFERENCE AGENDA

LOEWS CORONADO BAY ► SAN DIEGO, CA

OCTOBER 7-10, 2013  
[WWW.NDIA.ORG/MEETINGS/4550](http://WWW.NDIA.ORG/MEETINGS/4550)

EVENT #4550

## MONDAY ▷ OCTOBER 7, 2013

**3:00 pm - 6:00 pm**

**REGISTRATION**

**6:00 pm - 7:00 pm**

**OPENING NETWORKING RECEPTION**

## TUESDAY ▷ OCTOBER 8, 2013

**7:00 am - 6:00 pm**

**CONFERENCE REGISTRATION**

**7:00 am - 8:00 am**

**CONTINENTAL BREAKFAST**

**8:00 am - 8:10 am**

**WELCOME ADDRESS**

**8:10 am - 8:40 am**

**KEYNOTE ADDRESS**

► TBA

**8:40 am - 9:00 am**

**MSIAC AWARDS PRESENTATION**

**9:00 am - 10:00 am**

**PLENARY PAPER PRESENTATIONS**

### **PLENARY SESSION: GLOBAL IMEM PERSPECTIVES AND TRENDS**

SESSION CHAIR: Dr. Chris Michienzi

9:00 AM	16180	MSIAC – SUPPORTING THE MUNITIONS SAFETY COMMUNITY	<i>Michael Michael Sharp</i>
9:20 AM	16173	FRENCH MURAT (IM) POLICY - A NEW IMPETUS	<i>Dr. Pierre-Francois Peron</i>
9:40 AM	16117	IM STATE OF THE ART	<i>Mr. Manfred R Becker</i>

**10:00 am - 10:30 am**

**NETWORKING BREAK**

10:30 am - 11:50 am

**PLENARY PAPER PRESENTATIONS (CONTINUED)**

<b>PLENARY SESSION: GLOBAL IMEM PERSPECTIVES AND TRENDS</b>			
SESSION CHAIR: Mr. Pierre-Olivier Vignaud			
10:30 AM	16067	THE HISTORICAL ASPECTS OF SENSITIVITY AND STABILITY TESTS FOR PROPELLANT QUALIFICATION	<i>Mr. Ken Tomasello</i>
10:50 AM	16150	OVERVIEW OF US MANUFACTURING CAPABILITIES FOR CRITICAL IM / EM INGREDIENTS AND PRODUCTS	<i>Mr. Mike Ervin</i>
11:10 AM	16144	ENERGETIC MATERIALS STANDARDS – FUNDAMENTAL DATA SUPPORTING THE MUNITION LIFE-CYCLE SAFETY ASSESSMENT	<i>Dr. Irmeli Tuukkanen</i>
11:30 AM	16207	STANAG 4439 MANDATORY REACTIONS & AOP39 RESPONSE DESCRIPTORS: FEED-BACK AND CONSIDERATIONS FROM IM INDUSTRY	<i>M Yves Guengant</i>

11:50 am - 1:20 pm

**LUNCH**

Marina Terrace

1:20 pm - 3:00 pm

**BREAKOUT PRESENTATIONS**

<b>SESSION 3A - SYNTHESIS OF ENERGETIC MATERIALS</b>			
SESSION CHAIR: Mr. Michael Ervin			
1:20 PM	16199	ENERGETIC INGREDIENTS RESEARCH FOR FREEDM PROGRAM	<i>Dr. David Price</i>
1:40 PM	15978	DEVELOPMENT OF INSENSITIVE ENERGETIC PLASTICIZER	<i>Dr. Jin Seuk Kim</i>
2:00 PM	16092	LARGE SCALE PRODUCTION OF IMPROVED CRYSTAL QUALITY RDX	<i>Dr. Sarah A Headrick</i>
2:20 PM	16100	SYNTHESIS OF ENERGETIC MATERIALS	<i>Professor Chang-Ha Lee</i>
2:40 PM	TBA	TBA	<i>TBA</i>

<b>SESSION 3B - TESTING: THERMAL EMPHASIS</b>			
SESSION CHAIR: Mr. Kenneth Graham			
1:20 PM	16116	FUEL FIRE EXPERTS WORK ON PROPANE AS AN ALTERNATE HEATING SOURCE FOR THE FAST HEATING TEST	<i>Mr. Manfred R. Becker</i>
1:40 PM	16204	THE DEVELOPMENT OF A CLEAN FAST COOK-OFF TEST IN THE NETHERLANDS	<i>Mr. Gert H Scholtes</i>
2:00 PM	16003	EXPERIMENTAL DEVELOPMENT OF A PROPANE BURNER FOR FAST COOK OFF TESTING	<i>Dr. Jon J. Yagla</i>
2:20 PM	16154	LOW COST HEAT FLUX AND FLAME TEMPERATURE CHARACTERIZATION OF NATO STANDARD KEROSENE POOL FIRES	<i>Dr. Fabien Chassagne</i>
2:40 PM	16213	THE SAND BED BURNER AND THE ADIABATIC SURFACE TEMPERATURE PROBE – THE FUTURE EQUIPMENT FOR FAST COOK OFF TESTING	<i>Mr. Jon Toreheim</i>

**3:00 pm - 3:20 pm****NETWORKING BREAK****3:20 pm - 5:00 pm****BREAKOUT PRESENTATIONS**

<b>SESSION 4A - ENERGETIC FORMULATIONS</b>			
SESSION CHAIR: Mr. Paul Braithwaite			
3:20 PM	16297	A COMPARISON OF DIFFERENT APPROACHES TO IMPROVE INSENSITIVE MUNITIONS IN HIGH PERFORMANCE CASTABLE EXPLOSIVES	<i>Dr. Robert Hatch</i>
3:40 PM	16109	RECLAMATION AND REFORMULATION OF TATB FROM PBX-9502 AND LX-17	<i>Dr. Jacob Morris</i>
4:00 PM	16152	FORMULATION AND CHARACTERIZATIONS OF NANOENERGETIC COMPOSITIONS WITH IMPROVED SAFETY	<i>Mrs. Anne Wuillaume</i>
4:20 PM	16208	TOWARDS A GREENER LESS SENSITIVE MUNITION: GUNTOL AN INITIAL STUDY	<i>Ms. Helen Stenmark</i>
4:40 PM	TBAP	TBA	<i>TBA</i>

<b>SESSION 4B - SYSTEMS: IM EMPHASIS</b>			
SESSION CHAIR: Mr. Matthew Beyard			
3:20 PM	16157	AIMS: ADVANCED INSENSITIVE MUNITIONS SEARCH	<i>M. Emmanuel Schultz</i>
3:40 PM	16168	DEVELOPMENT AND VERIFICATION OF THE ANTI-FRATRICIDE FEATURE FOR THE DDG-1000 MUNITIONS CONTAINER 155MM LRLAP AMMUNITION	<i>Dr. James A. Luoma</i>
4:00 PM	TBA	TBA	<i>TBA</i>
4:20 PM	16115	MSIAC IM HC WORKSHOP	<i>Mr Manfred R Becker</i>
4:40 PM	TBA	TBA	<i>TBA</i>

**5:00 pm****SESSIONS ADJOURN****5:30 pm - 6:30 pm****SYMPOSIUM RECEPTION**

Marina Terrace

## WEDNESDAY ▸ OCTOBER 9, 2013

**7:00 am - 4:40 pm**

**CONFERENCE REGISTRATION**

**7:00 am - 8:00 am**

**CONTINENTAL BREAKFAST**

**8:00 am - 9:40 am**

**BREAKOUT PRESENTATIONS**

### **SESSION 5A - GUN PROPELLANTS**

SESSION CHAIR: Ms. Kelly Moran

8:00 AM	15931	NEW PROPELLANT TECHNOLOGIES FOR SMALL CALIBRE AMMUNITION	<i>Mr. Beat Vogelsanger</i>
8:20 AM	16141	CLP – A NEW NITRAMINE GUN PROPELLANT FAMILY FOR LOVA	<i>Mr. Eli Shachar</i>
8:40 AM	16203	DEVELOPMENT OF NEW STABILIZERS FOR NITROCELLULOSE BASED PROPELLANT	<i>Mr. Martin Johansson</i>
9:00 AM	16209	ANALYSIS OF PRESURE WAVES GENERATION IN THE INITIATION PROCESS OF LOW VULNERABILITY PROPELLANTS	<i>Mr. Guillermo Jenaro</i>
9:20 AM	TBA	TBA	<i>TBA</i>

### **SESSION 5B - TESTING: SHOCK EMPHASIS**

SESSION CHAIR:

8:00 AM	16162	AN ASSESSMENT OF THE RESPONSE OF EXPLOSIVE COMPONENTS TO SHOCK INITIATION	<i>Dr. Trevor T. Griffiths</i>
8:20 AM	16206	SHAPED CHARGE JET STANAG: PROPOSITIONS FOR UPDATED EDITION	<i>M YVES GUENGANT</i>
8:40 AM	16260	SMALL SHAPED CHARGE THREAT TEST CONFIGURATIONS FOR IM THREAT TESTING	<i>Dr. Ernest L. Baker</i>
9:00 AM	16142	SIGNIFICANT CHARGE PARAMETERS INFLUENCING THE SHAPED CHARGE JET INITIATION	<i>Mr. Werner Arnold</i>
9:20 AM	16247	SLOW COOK-OFF HEATING RATE EVALUATION	<i>Dr. Brian E. Fuchs</i>

**9:40 am - 10:00 am**

**NETWORKING BREAK**

10:00 am - 11:40 am

**BREAKOUT PRESENTATIONS**

<b>SESSION 6A - ENERGETIC MATERIALS PROCESSING</b>			
SESSION CHAIR: Mr. Steve Dart			
10:00 AM	16244	IM MELT-CAST EXPLOSIVE PRODUCTION FACILITY	<i>Ms. Ling Zhao</i>
10:20 AM	16218	NANOCOMPOSITE MANUFACTURING FOR ENERGETIC MATERIALS	<i>Mr. Michael J Fisher</i>
10:40 AM	16155	LARGE SCALE MANUFACTURE OF GRANULAR IMX-104 MELT POUR EXPLOSIVE	<i>Mr. Alberto Carrillo</i>
11:00 AM	16198	ESTABLISHMENT OF TATB MANUFACTURING PROCESS AT HOLSTON ARMY AMMUNITION PLANT	<i>Mr. Mike Ervin</i>
11:20 AM	TBA	TBA	<i>TBA</i>

<b>SESSION 6B - SYSTEMS 2: AMMUNITION</b>			
SESSION CHAIR: Mr. Brian Adams			
10:00 AM	16174	120 MM HE MORTAR ROUND PROCUREMENT - AN APPLICATION EXAMPLE OF THE FRENCH MURAT POLICY	<i>Dr. Pierre-Francois Peron</i>
10:20 AM	TBA	TBA	<i>TBA</i>
10:40 AM	16172	TOWARD NEW FRENCH IM GENERAL PURPOSE BOMBS	<i>Mr. Luc Chaffois</i>
11:00 AM	16194	PRESSURE RELIEF SYSTEMS FOR HIGH PRESSURE MEDIUM CALIBER AMMUNITION	<i>Mr. Nicolas Bruno</i>
11:20 AM	16255	DEVELOPMENT OF 155MM M95 IM PRECISION GUIDANCE KIT COMPATIBLE PROJECTILE	<i>Mr. Philip J Samuels</i>

11:40 am - 1:00 pm

**LUNCH**

Marina Terrace

1:00 pm - 2:40 pm

**BREAKOUT PRESENTATIONS**

<b>SESSION 7A - IMPROVED ENERGETIC MATERIALS</b>			
SESSION CHAIR: Mr. Andrew Wilson			
1:00 PM	16188	MANUFACTURE OF WET-AMINATED 1,3,5-TRIAMINO-2,4,6-TRINITOBENZENE AT THE HOLSTON ARMY AMMUNITION PLANT	<i>Dr. Neil Tucker</i>
1:20 PM	16122	VI-RDX : FROM LAB TO PILOT SCALE	<i>Ms. Genevieve Eck</i>
1:40 PM	16200	DEVELOPMENT AND PRODUCTION OF A NEW CLASS OF NTO	<i>Dr. David Price</i>
2:00 PM	16187	COMPARISON OF DOTC AND LEGACY BENZIGER DRY AMINATED TATBS AND PBX-9502†	<i>Dr. D. Mark Hoffman</i>
2:20 PM	16171	SYNTHESIS, CHARACTERIZATION AND FORMULATION OF DIAMMONIUM ETHYLENE BIS(5-NITROIMINOTETRAZOLATE) (AM-EBNIT)	<i>Ms. Eun Mee Goh</i>

1:00 pm - 2:40 pm

**BREAKOUT PRESENTATIONS (CONTINUED)**

<b>SESSION 7B - MODELLING</b>			
SESSION CHAIR: Mr. Pierre Francois Peron			
1:00 PM	16081	MULTIPHYSICS MODELLING OF VARIABLE CONFINEMENT COOK-OFF TEST (VCCT)	<i>Mr. Pierre Pelletier</i>
1:20 PM	16145	A COMPUTATIONAL SCREENING METHOD IN DERIVING NEW PROMISING EXPLOSIVE MOLECULES: ADD METHOD-1 AND MS-HEMS	<i>Dr. Soo Gyeong Cho</i>
1:40 PM	16311	THERMAL MODELLING THE SCO RESPONSE OF A TOW2B WARHEAD	<i>David Hunter</i>
2:00 PM	16073	INSENSITIVE MUNITIONS (IM): MODELING THE REACTION TYPE	<i>Mr. Julien Moriceau</i>
2:20 PM	TBA	TBA	<i>TBA</i>

2:40 pm - 3:00 pm

**NETWORKING BREAK**

3:00 pm - 4:40 pm

**BREAKOUT PRESENTATIONS**

<b>SESSION 8A - ROCKET PROPELLANTS</b>			
SESSION CHAIR: Mr. Emmanuel Schultz			
3:00 PM	16313	A REALISTIC THERMAL MITIGATION STRATEGY FOR SOLID ROCKET MOTORS	<i>Peter Cahill</i>
3:20 PM	15940	SOLID PROPELLANT ROCKET MOTORS, RESULTS OF INSENSITIVE MUNITIONS TESTING	<i>Dr. Alexander C. Weigand</i>
3:40 PM	16163	ADN IS MORE THAN PARTICLES AND FORMULATIONS – IT IS PART OF FUTURE ROCKET PROPELLANTS	<i>Mr. Martin Johansson</i>
4:00 PM	16164	BORON NITRIDE ADDITIVE FOR ADVANCED PROPELLANTS	<i>Dr. Paul Matter</i>
4:20 PM	16165	EVALUATION OF A LOW TOXICITY RDX REPLACEMENT FOR MINIMUM SMOKE ROCKET PROPELLANT FORMULATIONS	<i>Dr. Bradley Sleadd</i>

**SESSION 8B - SYSTEMS 3: LIFE-CYCLE EMPHASIS**

SESSION CHAIR: Dr. Roy Kelly			
3:00 PM	16181	THE EFFECTS OF ENERGETIC MATERIALS AGEING ON SYSTEM IM RESPONSE	<i>Dr. Paul Deacon</i>
3:20 PM	16169	ENHANCED PERFORMANCE FROM INSENSITIVE EXPLOSIVES	<i>Dr. Ronald E. Brown</i>
3:40 PM	TBA	TBA	<i>TBA</i>
4:00 PM	TBA	TBA	<i>TBA</i>
4:20 PM	16298	ULTRA-HIGH PRESSURE WATERJETS IN DEMILITARIZATION	<i>Dr. Steve Schmit</i>

4:40 pm

**SESSIONS ADJOURN**

**THURSDAY > OCTOBER 10, 2013****7:30 am - 12:00 pm****CONFERENCE REGISTRATION****7:30 am - 8:30 am****CONTINENTAL BREAKFAST****8:30 am - 10:10 am****BREAKOUT PRESENTATIONS**

<b>SESSION 9A - AGING OF ENERGETIC MATERIALS</b>			
SESSION CHAIR: Mr. Bruno Noguez			
8:30 AM	16304	MECHANISTIC AGING AND SURVEILLANCE OF WARHEAD ENERGETIC MATERIALS	<i>Dr. I. Lee Davis</i>
8:50 AM	16147	INVESTIGATION OF THE CHANGE IN THERMAL AND SHOCK SENSITIVITY BY AGE-ING OF RDX CHARGES BONDED BY HTPB-IPDI AND GAP-N100	<i>Dr. Manfred A. Bohn</i>
9:10 AM	16269	ANALYSIS OF DOUBLE BASE PROPELLANTS SERVICE LIFE RELATING TO MECHANICAL PROPERTIES IN EXTREME CLIMATIC CONDITIONS	<i>Mr. František Krejčí</i>
9:30 AM	16119	REACTIVITY OF ADN WITH POLYBUTADIENE IN AIR	<i>Dr. Simon Torry</i>
9:50 AM	16106	AGEING OF RDX CRYSTALS INVESTIGATED BY X-RAY DIFFRACTION	<i>Dr. Michael Herrmann</i>

<b>SESSION 9B - TESTING (CONTINUED)</b>			
SESSION CHAIR: Ms. Melissa Hobbs			
8:30 AM	16080	MODIFIED VERSION OF THE OF VARIABLE CONFINEMENT COOK-OFF TEST (VCCT)	<i>Mr Pierre Pelletier</i>
8:50 AM	16285	DECREASING A SHOCK SENSITIVITY OF THE HMX-BASED PBXS THROUGH THE MORPHOLOGY MODIFICATION OF THE HMX-CONSTITUENTS	<i>Dr. Igor Ye. Plaksin</i>
9:10 AM	16158	AN INTERNATIONAL REVIEW OF THE STANAG 4241, BULLET IMPACT TEST	<i>M. Emmanuel Schultz</i>
9:30 AM	16202	MSIAC L-150, A STAIRWAY TO KNOWLEDGE	<i>Mr. Jon Toreheim</i>
9:50 AM	16293	ELECTROMAGNETIC EXPLOSIVE WARHEAD (EMEW)	<i>Dr. James (Y.B.) Kim</i>

**10:10 am - 10:30 am****NETWORKING BREAK**



10:30 am - 11:50 am

**BREAKOUT PRESENTATIONS**

<b>SESSION 10A - EXPLOSIVE FORMULATIONS</b>			
SESSION CHAIR: Mr. Stephen Struck			
10:30 AM	15937	MELT CAST PROCESS APPLIED TO DEVELOP TNT BASED IM AMMUNITIONS.	<i>Mr. Christophe Coulouarn</i>
10:50 AM	16156	EVALUATION OF THE EFFECT OF SURFACE AREA ON DNAN BASED EXPLOSIVES	<i>Mr. Alberto Carrillo</i>
11:10 AM	16295	AN INITIAL EVALUATION OF SEVERAL NEW HIGH BLAST EXPLOSIVES	<i>Mr. Paul Braithwaite</i>
11:30 AM	16243	MELTABLE NITROGUANIDINE: DEVELOPMENT OF DGX-AL FORMULATIONS	<i>Dr. Kimberly Y Spangler</i>

<b>SESSION 10B - ENERGETIC MATERIALS PROCESSING (CONTINUED)</b>			
SESSION CHAIR: Mr. Pierre Pelletier			
10:30 AM	16151	PROCESS OPTIMIZATION TO IMPROVE PRODUCT QUALITY AND CONSISTENCY OF ENERGETIC MATERIALS AT HSAAP	<i>Mr. Virgil Fung</i>
10:50 AM	16190	EXPLOSIVES COATING VIA ADVANCED CLUSTER ENERGETICS (ACETM) FLUID ENERGY MILL (FEM) TECHNOLOGY	<i>Mr. Brian Alexander</i>
11:10 AM	16264	IMX-104 MANUFACTURING PROCESS OPTIMIZATION	<i>Ms. Ling Zhao</i>
11:30 AM	TBA	TBA	<i>TBA</i>

11:50 am

**CLOSING REMARKS/ SYMPOSIUM ADJOURNS**