

**THE INTERNATIONAL PYROTECHNICS SOCIETY**

**THE TWENTY-EIGHTH INTERNATIONAL**



**PYROTECHNICS SEMINAR**

*THE MAJOR INTERNATIONAL FORUM FOR PYROTECHNICS*

**November 4 - 9, 2001  
Stamford Plaza Hotel  
Adelaide, South Australia, Australia**

Hosted by  
Weapons Systems Division, DSTO, Australia

**FINAL ANNOUNCEMENT**

Conference Proudly Supported by:  
ADI Ltd  
Pains Wessex Australia Pty Ltd  
Wallop Defence Systems



**The 28<sup>th</sup> International Pyrotechnics Seminar will be held at the Stamford Plaza Hotel in Adelaide, South Australia, Australia, commencing on Sunday 4<sup>th</sup> November 2001 through until Friday 9<sup>th</sup> November 2001.**

### **SEMINAR PROGRAM**

The conference program is expected to consist of 90 oral and poster presentations accepted for the conference. A list of these papers is included with this announcement. A full program schedule will be distributed when it is finalised.

The program comprises the following:

28 papers on high explosives including:

The influence of ultrafine aluminium upon detonation parameters, by Patrick Brousseau, Mathew Cliff and Helen Dorsett.

Viscous energetic liquid explosive formulations sensitized with glass microballoons IV. Revised analysis of the detonation data, by James L. Austing.

Nanomaterials and nanostructures as components for high energy condensed systems, by Yu Frolov, A. Pivkina, S. Zavyalov and P. Ulyanova

34 papers on pyrotechnic compositions, devices and applications including:

Chemical and physical aspects of a pyrotechnic torch in penetrating and non-detonatively neutralizing all UXO, by Allen Tulis.

The development of an underwater flare for the Olympic torch relay, Sydney 2000, by Mike Wilson.

Pyrotechnic heater compositions for use in thermal batteries, by James Calloway, Nigel Davies and Michael Stringer.

Variables affecting the output of low brisance percussion primers, by Frank J. Valenta.

Some novel formulations and their application in film industry special effects, by C. Murray, A. Payne and S. Courtley.

20 papers on combustion and propellants including:

Gas generating propellants for ducted rockets, by I. Komai and N. Kubota.

Understanding the true driving force in the auto-ignition of single and doublebase propellants using microcalorimetry, by Daniel Ellison and Anton Chin.

Propellant grains with similar material coatings – The effect of their low temperature sensitivity and the laboratory prediction method, by Fuming Xu, Zeshan Wang and Weidong He.

8 papers on obscurant smokes and red phosphorus including:

Overview of the United Kingdom's low toxicity obscurants research program, by Peter Collins, Grahame Poulson and W. Fletcher.

Thermal and sensitivity behaviour of phosphorus based smoke compositions, by M.R. Somayajulu, G.K. Gautam, S. Jayaraman and J.P. Agrawal.

Investigation of the combustion of red phosphorus and the effect of sample morphology, by Victoria Norris.

The proceedings of the Seminar will be published in two formats – in book form and on CD – and these will be distributed at the Seminar. To be published, papers must be presented at the seminar, ideally by the author.

### **FRANK CARVER BURSARY AWARDS**

From six applications for the Frank Carver Bursary Award, two young scientists will be awarded cash prizes of £1000 each to undertake travel to the 28<sup>th</sup> IPS, plus free registration, to present their papers. The first winner, Ms Queenie Kwok will present her paper Characterization of Passivated Aluminium Nanopowders. The second winner, Ms Tracy Vine will present her paper Application of Physical Vapour Deposition to the Manufacture of Pyrotechnics.

## ACTIVITIES

Formal delegate registration will begin on Sunday afternoon 4<sup>th</sup> November from 4 pm to 8 pm in the Stamford Plaza Hotel. Registration will begin again on Monday morning at 8 am and close at 6 pm. Following the first day of conference presentations, a cocktail reception will be held from 6 pm to 8 pm on Monday evening in the Crystal Room of the Stamford Plaza Hotel. On Tuesday there will be a late lunch for the running of the Melbourne Cup, and in the evening a picnic dinner will be held in the ground of the Adelaide Botanic Garden.

Wednesday conference proceedings will be limited to the morning period as an excursion to the Barossa Valley is planned for the afternoon to visit one of Australia's premier wine growing districts. The conference banquet will be held at Ayers House on Thursday evening from 7 pm. All lunches from Monday to Friday and all morning and afternoon teas are paid for within the registration fee, as are the cocktail reception, Botanic Gardens picnic, excursion to the Barossa Valley and the conference banquet.

## COMPANION ACTIVITIES

All companions are invited to join in the above Activities. Please note your plans to participate on the Registration form and specify companion tickets as needed. The companion tickets for the above activities are subsidised by the conference. Companions planning to go on the Barossa Valley excursion on Wednesday may wish to have a light lunch in the hotel with conference delegates immediately prior to departure.

In addition, there are also specific accompanying persons programs for Monday, Tuesday, Thursday and Friday. These programs will include touring of the Flerieu Peninsula, and the Adelaide Hills. Further information will be provided to accompanying persons on these activities.

## VENUE – ADELAIDE, SOUTH AUSTRALIA

Fine food, great wine, a sense of history and the good life can all be found in the elegant City of Adelaide, the capital of South Australia and home to more than a million people. Adelaide was especially planned and laid out for easy living by its designer, Colonel William Light, in 1836. It retains its rich sense of a planned charming city with a reputation for friendliness, hospitality and a relaxed easy-going lifestyle. Visitors can taste splendid world cuisine amongst gracious heritage architecture in an elegant city, yet be just half an hour away from a walk

among kangaroos, koalas and other unique Australian wildlife in their natural habitat, or from a walk along the superb beaches Adelaide can offer. Just one hour from Adelaide is one of Australia's premier wine growing districts – The Barossa Valley – with German and English stone villages, churches, fine arts, restaurants and of course world renowned wineries. Please contact the Seminar Coordinator if you would like information on pre/post conference tours, or refer to the website [www.visit-southaustralia.com.au](http://www.visit-southaustralia.com.au)

## STAMFORD PLAZA HOTEL

Centrally located in the city, opposite Parliament House, the Adelaide Casino and the Festival Theatre, the Stamford Plaza Adelaide is just a short stroll to city shopping, the parklands and cultural precincts. This beautiful five star hotel offers 336 guest rooms, roof-top gymnasium, heated pool, spa and sauna. The Stamford Plaza is only a short drive (approximately 15 minutes) from Adelaide airport. The discounted conference room rate is A\$170 per night (approx. US\$86 inclusive of tax) for single, twin or double occupancy, or A\$187 with a full breakfast for one person. The Seminar itself will be held in the hotel's principal conference facilities. These occupy Level 2 of the hotel, and will be exclusively devoted to our meeting's needs. Further information is located at the following website:

[www.oztravel.com.au/travel\\_mall/hotels/Stamford Plaza Adelaide.html](http://www.oztravel.com.au/travel_mall/hotels/Stamford_Plaza_Adelaide.html)

Address: 150 North Terrace, Adelaide, SA 5000

Ph: +61-8-8461-1111; Fax: +61-8-8461-0319

email: [reservations@spa.stamford.com.au](mailto:reservations@spa.stamford.com.au)

## ALTERNATIVE ACCOMMODATION OPTIONS

### *The Barron Townhouse Hotel*

A four and a half star hotel, five minutes walk from the seminar venue. Single, twin or double occupancy rooms (business/executive class) at the discounted conference rate of A\$139 per night (approx. US\$71, inclusive of tax). Further information can be obtained at [www.barrontownhouse.com.au](http://www.barrontownhouse.com.au)

Address: 164 Hindley Street, Adelaide, SA 5000

Ph: +61-8-8211-8255; Fax: +61-8-8231-1179

### *The Grosvenor Hotel*

A three and a half star hotel, three doors from the seminar venue. Discounted room rates (tax included): Main building – standard room A\$105, business room A\$135, exec. dbl A\$165; South Wing (not renovated) – single A\$80, twin/double A\$90. For further info. see [www.grosvenorvistahotel.com.au](http://www.grosvenorvistahotel.com.au)

Address: 125 North Terrace, Adelaide, SA 5000.

Ph: +61-8-8407-8888; Fax: +61-8-8407-8866

## WHAT YOU NEED TO DO!

**All Participants** need to fill out the Registration Form and make hotel reservations. Be sure to also register your companion for the activities they are interested in. Authors of papers will need to prepare full papers for the Proceedings. International delegates will need to obtain travel visas for Australia. Although obtaining a visa is not difficult this should be arranged a reasonable time in advance of departure. Travel agents or the nearest Australian Embassy or Consulate will assist delegates to obtain a visa. If required, written invitations will be sent to delegates by the 28<sup>th</sup> IPS Coordinator.

## REGISTRATION

Registration should be done at this time, using the Registration form included in this announcement. The Registration Form, or a response with the required information, can be sent by fax or airmail, or emailed to the 28<sup>th</sup> IPS Coordinator at [adelaide.ips@dsto.defence.gov.au](mailto:adelaide.ips@dsto.defence.gov.au)

If you register and pay before **7<sup>th</sup> October** you will pay a lower registration fee than if you register and pay afterwards. Later registrants will pay the higher fee as indicated in the fee schedule on the Registration Form. Payment may be made via VISA or MasterCard credit cards and payable in Australian dollars, other credit cards such as American Express and Diners Club cannot be accepted. International money orders, or Australian bank cheques, with payment in Australian dollars payable to “28<sup>th</sup> International Pyrotechnics Seminar – c/- RPM” may also be made as payment. Payment should ideally be made at the time of registration, but may also be made at the conference venue.

## CANCELLATIONS

Cancellations by letter or fax received by the 28<sup>th</sup> IPS Coordinator by 21<sup>st</sup> Sept. will be refunded in full. Cancellations received between 21<sup>st</sup> Sept. and 20<sup>th</sup> Oct. will receive a 50% refund. No refund after 20<sup>th</sup> Oct., but a substitute may attend.

## HOTEL RESERVATION

It is necessary for delegates to make their own hotel reservations using the contact details in this announcement. Block hotel bookings have been made at the Stamford Plaza Hotel, however availability cannot be guaranteed if

reservations are left late. It is therefore recommended that the hotel rooms be booked before **4<sup>th</sup> September**.

When making reservations, delegates should make the hotel aware that they are attending the 28<sup>th</sup> International Pyrotechnics Seminar. This will ensure delegates are given the discounted room rate for the conference. If there are any difficulties with room bookings please contact the 28<sup>th</sup> IPS Coordinator.

## MANUSCRIPT PREPARATION

Authors of papers accepted for publication will need to prepare full conference papers and send these to the 28<sup>th</sup> IPS Coordinator before **31<sup>st</sup> August**. Conference papers will be published in the Proceedings as received i.e. camera ready. The Proceedings will be printed in A4 size prior to the conference as a book, and also as a CD ROM. It is preferable to have the papers sent electronically (MS Word compatible) to the 28<sup>th</sup> IPS Coordinator. Hard copies will however be scanned to incorporate in the CD ROM.

Papers should generally be in basic scientific format: abstract, introduction, experimental, results and discussion, conclusion, acknowledgements and references. Figures may be either within or after the text pages. The title of the paper should be in capitals, centred and bold, followed by a blank line. Author names may be in lower case, centred and separated by commas. Affiliation centred on the next line with city, state, postcode, and nation centred on the following line, followed by a blank line and the text of the abstract. Authors may also wish to include a contact email address. All pages must have a 2.5 cm (1 inch) margin. There is no minimum page limit, but the maximum number of pages is 16. The official language of the Seminar is English and all papers must be presented and written in the English language.

## PRESENTATIONS

Oral presentations will be assisted using an overhead projector, slide projector, and MS PowerPoint projection facilities. Presentations can be made by delegates using their 3.5 inch (9 cm) diskettes or CD ROMs. The standard presentation length will be 15 minutes with 5 minutes for discussion and questions.

Poster presentations should fit within a space of 1.2 m wide and 1.2 m high. The posters will be provided with push-pins or Velcro strips to affix to the boards. Further information relating to the poster session will be given to delegates presenting posters prior to the conference.

## 28<sup>TH</sup> IPS ORGANISING COMMITTEE

### Chair:

Dr Norbert Burman  
Research Leader for Energetic Materials, WSD, DSTO,  
PO Box 1500, Salisbury, SA 5108, Australia

### Seminar Coordinator:

Dr. Ken Smit  
WSD, 307 EOP, DSTO,  
PO Box 1500, Salisbury, SA 5108, Australia  
Ph: +61-8-8259-6737, Fax: +61-8-8259-6585  
E-mail: [adelaide.ips@dsto.defence.gov.au](mailto:adelaide.ips@dsto.defence.gov.au)

### Other Members:

Mrs Louise Barrington  
Weapons Systems Division, DSTO

Mr Peter Berry  
Weapons Systems Division, DSTO

Mr Greg Brown  
ADI Limited

Mr. Leo de Yong  
Maritime Platforms Division, DSTO

Mr. Ron Hancox  
Pains Wessex Australia Pty. Ltd.

## SCHEDULE OF EVENTS

September 8, 2000

1<sup>st</sup> Announcement and Call for Abstracts

February 15, 2001

2<sup>nd</sup> Announcement and Call for Abstracts

April 21, 2001

**Abstracts Due to the Seminar Coordinator**

June 8, 2001

- Authors notified of paper acceptance

July 4, 2001

- Registration information sent out
- Final announcement with a list of papers for presentation
- Early registration starts

August 31, 2001

**Manuscripts due to Seminar Coordinator**

September 4, 2001

Recommended date by which bookings at the Stamford Plaza Hotel should be made, after this date room availability may be more difficult.

October 7, 2001

Final date for receiving early registration discount for conference registration.

November 4-9, 2001

Seminar

Further information on the 28<sup>th</sup> IPS may be found at [www.intlpyro.org/IPS28/](http://www.intlpyro.org/IPS28/)

## RELATED AUSTRALIAN CONFERENCES

**PARARI 2001** – 5<sup>th</sup> Australian Explosives Ordnance Symposium.  
Canberra ACT, Oct. 31 – Nov. 2; email: [aoc-parari01@cbr.defence.gov.au](mailto:aoc-parari01@cbr.defence.gov.au)  
website: [www.defence.gov.au/aoc\\_web](http://www.defence.gov.au/aoc_web)

**Land Warfare Conference 2001**, Sydney NSW, Nov. 12 – Nov. 14;  
email: [LWCC@dsto.defence.gov.au](mailto:LWCC@dsto.defence.gov.au)  
website: [www.dsto.defence.gov.au/corporate/conferences/landwarfare](http://www.dsto.defence.gov.au/corporate/conferences/landwarfare)

## Papers Accepted for Presentation

ALESHIN, V; FROLOV, Yu; PIVKINA, A - MODELING OF COMBUSTION WAVE DYNAMICS IN HETEROGENEOUS CONDENSED SYSTEMS

AOKI, Ichiro; KUBOTA, Naminosuke - HEAT OF FORMATION AND ADIABATIC FLAME TEMPERATURE OF ENERGETIC MATERIALS

ARAI, Mitsuru; NAKAZATO, Naoto; WADA, Yuji; HARADA, Tadamasu; TAMURA, Masamitsu - A STUDY OF THE APPLICATION OF AMMONIUM NITRATE AS AN OXIDIZER FOR GAS GENERATING COMPOSITION

AUSTING, James L - VISCOUS ENERGETIC LIQUID EXPLOSIVE FORMULATIONS SENSITIZED WITH GLASS MICROBALLOONS IV. REVISED ANALYSIS OF THE DETONATION DATA

AUSTING, James L - THE PERFORMANCE OF COMMERCIAL No. 6 ELECTRIC DETONATORS II. CONSTANT CURRENT INITIATION OF MULTIPLE DETONATORS

BAR, Christophe; MALBO, Patrick - HIGH ENERGY ELECTRONIC SAFE AND ARM DEVICE (ESAD) USING SLAPPER INITIATOR: AN INTERESTING WAY FOR MISSILE INITIATION (WARHEAD AND MOTOR)

BAUER, Pascal - A REVIEW OF FLAME ARRESTERS

BHINGAKAR, Varsha; SINGH, Hariwar - SENSITIVITY AND COMBUSTION BEHAVIOUR OF B-KNO<sub>3</sub> IGNITER COMPOSITIONS WITH DIFFERENT BINDERS

BISHOP, M; DAVIES, N - THE PERFORMANCE OF FLASH POWDERS

BLACHOWSKI, Thomas J - STATUS OF LASER INITIATION SYSTEMS FOR VARIOUS AIRCREW ESCAPE SYSTEM APPLICATIONS

BOHN, Manfred A - AGEING AND SERVICE TIME PERIOD ASSESSMENT OF NOVEL SOLID ROCKET PROPELLANT FORMULATIONS CONTAINING CL20, AP AND ENERGETIC PLASTICIZERS

BORKOWSKI, Y; CHESKIS, S; KALANTOROV, L; LOZOVSKY, V, - ENERGY OUTPUT AND COMBUSTION DIAGNOSTICS OF DIFFERENT PYROTECHNIC IGNITION CHARGES

BRANKA, Ruddy - INFLUENCE OF THE EXPLOSIVE MASS ON THE HAZARD ZONE LIMITS FOR PRODUCTS IN RISK DIVISION 1.1: THE CASE OF LOW MASSES

BROUSSEAU, Patrick; CLIFF, Matthew D; DORSETT, Helen E - THE INFLUENCE OF ULTRAFINE ALUMINIUM UPON DETONATION PARAMETERS

BROXTON, Amy E; CHIN, Anton - DETERMINATION OF SHOCK SENSITIVITY OF HIGH EXPLOSIVES USING FIBER OPTIC TECHNOLOGY

BURCH, D; GRIGGS, J; JOHNSON, M; POEHLEIN, S; SIMS, K - DEMILITARIZATION TECHNOLOGY DEVELOPMENT

BURN Andrew O - APPLICATION OF TAGUCHI DESIGN METHODS TO THE DEVELOPMENT OF A PYROTECHNIC BASE BLEED IGNITER ASSEMBLY FOR USE IN EXTENDED RANGE AMMUNITION

CALLAWAY, J D; DAVIES, N; STRINGER, M - PYROTECHNIC HEATER COMPOSITIONS FOR USE IN THERMAL BATTERIES

CHEN, Tianyun; LU, Chunxu; LIU Zuliang - STUDY ON COAL-MINING EXPANDED AMMONIUM NITRATE

CHIN, Anton; ELLISON, Daniel S - MECHANISTIC APPROACH TO STUDY THE MOISTURE AND ACIDITY EFFECT ON THE STABILITY OF SINGLE AND DOUBLE BASED PROPELLANT

CLIFF, Matthew D; SMITH, Matthew W - NTO/TNT AS A GENERAL PURPOSE MELT-CASTABLE EXPLOSIVE

COLLINS, Peter J D; POULSON, Grahame W; FLETCHER, W - OVERVIEW OF THE UNITED KINGDOM'S LOW TOXICITY OBSCURANTS RESEARCH PROGRAMME

COLLINS, Peter J D; SIMPSON, James; HOLLEY, David; APPLEYARD, Paul  
- TOXICITY ASSESSMENT OF PYROTECHNIC OBSCURANT  
MUNITIONS

DALLY, B B; ALWAHABI, Z T; KRISHNAMOORTHY, L V; REDMAN, L D;  
CHRISTO, F C - MEASUREMENTS OF PARTICLES EVOLUTION IN THE  
NEAR COMBUSTION FIELD OF MTV FORMULATION USING MIE  
SCATTERING TECHNIQUE

DAMSE, R S; REDKAR, Haridwar; PATGAONKAR, S S; SINGH, Amarjit -  
GUN PROPELLANTS CONTAINING INORGANIC ADDITIVES

DE KLERK, Wim; VAN DRIEL, Chris - EXTENDED LIFETIME  
PREDICTIONS OF 155 MM TEXTILE BAG CHARGES

DE YONG, L - SURFACE ANALYSIS OF PYROTECHNIC MAGNESIUM  
POWDER

DUNPHY, Simon - ENVIRONMENTAL STRESS SCREENING OF  
PYROTECHNIC STORES - VISEM SURFACE POSITION MARKER

ELLISON, Daniel S; CHIN, Anton - UNDERSTANDING THE TRUE  
DRIVING FORCE IN THE AUTO-IGNITION OF SINGLE AND  
DOUBLEBASE PROPELLANTS USING MICROCALORIMETRY

ENGELEN, K; VANNESTE, I; LEFEBVRE, M H - INFLUENCE OF  
PARTICLE SIZE ON THE COMBUSTION PROPERTIES OF A  
PYROTECHNIC MIXTURE

ERMOLAEV, B S; MALININ, S E; SULIMOV, A A; FOTEENKOV, V A -  
NEW APPROACH TO DETERMINING HAZARD OF DEFLAGRATION  
TRANSITION TO EXPLOSION

FARKASHAZY, Richard - DESIGN REQUIREMENTS AND PYROTECHNIC  
DESIGN SOLUTIONS FOR SURFACE POSITION MARKER FOR VISEM

FISHER, Kevin; MONTGOMERY, Frank; PHIPPS, Alan; NUGENT, Tina;  
HUBBLE, Bill R - AN EVALUATION OF USING MICROENCAPSULATED  
RED PHOSPHORUS IN MARINE LOCATION MARKER PYROTECHNIC  
COMPOSITIONS

FRIIS, Eva K; MOXNES, John F - AN EFFECTIVE METHOD TO  
ESTABLISH MATERIAL DATA FOR MATHEMATICAL MODELING OF  
PYROTECHNIC POWDER MATERIALS

FROLOV, Yu; PIVKINA, A; NEKRASOV, Yu - COMBUSTION FRONT  
CHARACTERISTICS FOR GASLESS SYSTEMS

FROLOV, Yu; PIVKINA, A; ZAVYALOV, S; ULYANOVA, P -  
NANOMATERIALS AND NANOSTRUCTURES AS COMPONENTS FOR  
HIGH-ENERGY CONDENSED SYSTEMS

FROTA, Octavia; BAILY, Alan - EFFECT OF SCALE ON COOK-OFF  
STUDIES OF EXPLOSIVES

GHEE, Ang How; OOMMEN, Charlie; VITTAL, J.J. - EFFECT OF  
ULTRASOUND ON THE PHASE TRANSITION BEHAVIOUR OF  
AMMONIUM NITRATE

GORELSKI, V A; SMOLIN, A Yu; SHTEINBERG, A S - MODELING OF Ti-  
B and Ti-C SYSTEMS UNDER IMPACT AND OF THE ELECTOTHERMAL  
EXPLOSION IN THE LAYERED Ni-Al SYSTEM

HANCOX, R J - A RE-EXAMINATION OF THE ROLE OF POTASSIUM  
PERCHLORATE IN RED HAND FLARE FORMULATIONS

HU, Shoaming - WAVE CONFIGURATION IN CONJUGATE DETONATION  
THEORY

IVANOV, O N; KABANOV, A G; KRETOV, V P; MALININ, S E -  
VIBRATION EFFECTS ON SOLID EXPLOSIVE MATERIALS'  
SENSITIVITY

KENNEDY, David L - AN ANALYSIS OF BULLET IMPACT ONTO AN  
EMULSION EXPLOSIVE

KESHAVARZ, Mohammad H; OFTADEH, Mohsein - PERFORMANCE OF  
2,4-DINTROIMDAZOLE AS A INSENSITIVE ENERGETIC MATERIAL

KESHAVARZ, Mohammad H; OFTADEH, Mohsein - A NEW  
CORRELATION FOR PREDICTING DETONATION PROPERTIES OF  
EXPLOSIVES

KLEVKOV, V I - SOME PECULIARITIES IN COMBUSTION OF DILUTED NITROCELLULOSE

KOMAI, Iwao; KUBOTA, Naminosuke - GAS GENERATING PROPELLANTS FOR DUCTED ROCKETS

KUBOZUKA, Satoshi; HIRATA, Norimasa; KUBOTA, Naminosuke - COMBUSTION PERFORMANCE OF ALUMINIZED RDX-AP COMPOSITE PROPELLANTS

KUMASAKI, Meiko; MIYASAKA, Rei; KIUCHI, Hirokazu; WADA, Yuji; ARAI, Mitsuru; TAMURA, Masamitsu - THE SYNTHESIS AND PROPERTIES OF AZOLE-COPPER COMPLEXES

KWOK, Q S M; LIGHTFOOT, P D; FOUCHARD, R C; TURCOTTE, A M; RIDLEY, W; JONES, D E G - CHARACTERIZATION OF PASSIVATED ALUMINIUM NANOPOWDERS

LIGHTFOOT, P D; KWOK, Q; FOUCHARD, R C; ABDUL-QADER, Z; JONES, D E G - THERMAL ANALYSIS OF SMOKE COMPOSITIONS

LIU, Zuliang; Lu, Chunxu - STUDY ON BLASTING RELIABILITY AND SAFETY IN MANUFACTURING PROCESS OF EXPANDED AMMONIUM NITRATE AND ITS EXPLOSIVES

LOCHERT, Ian - DSTO ADVANCES IN THE EVALUATION OF FOX-7

LU, Chunxu - RESEARCH ON THE APPLICATION TECHNOLOGY OF EXPANDED AMMONIUM NITRATE

LU, Jing Ping - MODELLING OF PBXN-109 EXPLOSIVE WITH CHEETAH

LU, Ming; LU, Chunxu; LIU Zuliang - STUDY OF A NEW TYPE OF ANFO EXPLOSIVE

LUKIN, Alexander N - NUMERICAL MODELING AND METHOD OF PREVENTION OF THE ANOMALOUS COMBUSTION REGIMES DEVELOPMENT IN THE LARGE-SIZED SOLID PROPELLANT ROCKET MOTOR

MARCHAND, Alain - OPTICAL INITIATION OF HNS BY LASER DRIVEN FLYER PLATE

MIYAKE, Atsumi - MOISTURE EFFECT ON THE RATE OF CORROSION OF BRIDGE WIRE AND ITS LIFETIME PREDICTION

MIYASAKA, Rei; KUMASAKI, Meiko; WADA, Yuji; TADAMASA, Harada; ARAI, Mitsuru; TAMURA, Masamitsu - A STUDY OF THE AMMONIUM NITRATE-AZOLE COMPLEX GAS GENERATING AGENTS

MURRAY, C; PAYNE, A; COURTLEY, S - SOME NOVEL FORMULATIONS AND THEIR APPLICATION IN FILM INDUSTRY SPECIAL EFFECTS

NIEHAUS, M; GREEB, O - MECHANICAL PROPERTIES OF PROPELLANTS BINDERS CONSISTING OF COPOLYMERISATES OF GLYCIDYL AZIDEPOLYMER AND CELLULOSE NITRATE

NORRIS, Victoria - INVESTIGATION OF THE OXIDATION OF RED PHOSPHORUS AND THE EFFECT OF SAMPLE MORPHOLOGY

O'LOUGHLIN, David O - BERDAN PERCUSSION CAPS: A STATISTICAL ASSESSMENT BY PROBIT ANALYSIS TO DETERMINE THE EFFECT OF ANVIL PENETRATION AND COMPOSITION DEPTH ON CAP SENSITIVITY

O'LOUGHLIN, David O - FACTORS AFFECTING THE UNDERWATER CUTTING PERFORMANCE OF BLADE, A FLEXIBLE LIGHTWEIGHT LINEAR CUTTING CHARGE

OOMMEN, Charlie; RAGHUNANDAN, B.N.; SANDHYA, P.P.; SASHIKUMAR, T.N. - HYGROSCOPICITY AND PHASE STABILIZATION IN AMMONIUM NITRATE

RASHKOVSKY, S S - NONSTEADY COMBUSTION OF FUEL-OXIDIZER SANDWICHES

RATCLIFF, Andrew; EISENTRAEGER, Frank - RED PHOSPHORUS FOR SMOKE & OBSCURANTS SYSTEMS

SADWIN, Lippe D; BROCHIER, Michel - COMPARATIVE EVALUATION OF DETONATORS BY AIRBLAST MEASUREMENTS

SARAWADEKAR, R G; ATHAWALE, B K; JAYARAMAN, S - USE OF BISMUTH CHROMATE WITH ANTIMONY SULPHIDE IN DELAY COMPOSITIONS

SARAWADEKAR, R G; KAMBLE, D D; ATHAWALE, B K; JAYARAMAN, S - A PYROTECNIC DELAY COMPOSITION BASED ON TITANIUM

SCHNEIDER, Roger L; HANSON, Michelle J - THE CHEMISRPITION OF TNT ON CHRYSOTILE ASBESTOS

SHANGAVI, R R; PILLAI, A G S; DAYANANDAN, C R; SINGH, Amarjit; KARIR, J S - STUDIES ON IMPROVING THE MECHANICAL PROPERTIES OF TRIPLE BASE GUN PROPELLANTS

SHARP, Michael W - THE NIMIC ENERGETIC MATERIALS COMPENDIUM (EMC)

SHIBAMOTO, Hidefumi; KUBOTA, Naminosuke - COMBUSTION CHARACTERISTICS OF HMX BASED GAS GENERATORS

SMIT, K J; BERRY, P; LEE, A; POTTICARY, N; REDMAN, L - PYROTECHNIC COMPOSITION EFFECTS ON CINNAMIC ACID SMOKE OBSCURATION IN THE INFRARED AND VISIBLE REGIONS

SMITH, David H - SOLID RIOCKET MOTOR SERVICE LIFE ANALYSIS FROM MEASURED STRESS AND TEMPERATURE RESPONSE DATA

SOMAYAJULU, M R; GAUTAM, G K; JAYARAMAN, S; AGRAWAL, J P - THERMAL AND SENSITIVITY BEHAVIOUR OF PHOSPHORUS BASED SMOKE COMPOSITIONS

SON, Steve; ASAY, Blaine; BOCKMON, Bryan; PANTOYA, Michelle - REACTION PROPAGATION PHYSICS OF Al/MoO<sub>3</sub> NANOCOMPOSITE THERMITES

STEVENSON, Bradley; CAMPBELL, Jeffrey - CONTINUOUS PROCESSING OF MTV BASED IR DECOY COMPOSITIONS

TULIS, Allen - CHEMICAL AND PHYSICAL ASPECTS OF A PYROTECHNIC TORCH IN PENETRATING AND NON-DETONATIVELY NEUTRALIZING ALL UXO

TURCOTTE, R; UNDERWOOD, B - COMPRESSION-IGNITION HAZARDS IN EXPLOSIVES PUMPING OPERATIONS

VALENTA, Frank J - VARIABLES AFFECTING THE OUTPUT OF LOW BRISANCE PERCUSSION PRIMERS

VARYONYKH, N M; KASHPOROV, L Yu; OBEZIYAEV, N V; SHELUDYAK, Yu E - FUNCTIONAL DEPENDENCE OF THE BURNING RATE OF MAGNESIUM/POTASSIUM NITRATE MIXTURES ON DIFFERENT PARAMETERS

VINE, T A - APPLICATION OF PHYSICAL VAPOUR DEPOSITION TO THE MANUFACTURE OF PYROTECHNICS

WADA, Yuji; TOTSU, Yosuke; ITOH, Mamoru; ARAI, Mitsuru; TAMURA, Masamitsu - A STUDY ON THE AGEING OF GAS GENERATING AGENTS FOR AIRBAGS

WEBB, Rutger - FLASH POWDER: SURVEY OF DETONATION EXPERIMENTS

WILSON, M A - THE DEVELOPMENT OF AN UNDERWATER FLARE FOR THE OLYMPIC TORCH RELAY, SYDNEY 2000

XU, Fuming; WANG, Zeshan; HE, Weidong - PROPELLANT GRAINS WITH SIMILAR MATERIAL COATINGS - THE EFFECT OF THEIR LOW TEMPERATURE SENSITIVITY AND THE LABORATORY PREDICTION METHOD

YE, Zhiwen; LU, Chunxu; LIU Zuliang; Du, Yang - RESEARCH ON PHYSICAL PROPERTIES OF EXPANDED AMMONIUM NITRATE

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## REGISTRATION FORM

NAME\* \_\_\_\_\_

COMPANION NAME\* \_\_\_\_\_

ORGANISATION\* \_\_\_\_\_

CONTACT ADDRESS \_\_\_\_\_

\_\_\_\_\_ State \_\_\_\_\_

Country \_\_\_\_\_ Postcode \_\_\_\_\_

PHONE: \_\_\_\_\_ (BH)

FAX NUMBER: \_\_\_\_\_

E-MAIL ADDRESS: \_\_\_\_\_

\*show names and organisation as you want badges to read

To assist us with planning, please complete the following.

*I and my companion plan to participate in the following activities:*

	Self	Companion
Monday, 5 <sup>th</sup> Nov., Cocktail Evening	( )	( )
Tuesday, 6 <sup>th</sup> Nov., Evening Picnic, Botanic Garden	( )	( )
Wednesday, 7 <sup>th</sup> Nov., Barossa Valley Excursion	( )	( )
Thursday, 8 <sup>th</sup> Nov., Evening Banquet, Ayers House	( )	( )

**Return Address:**

Dr Ken Smit, 28<sup>th</sup> IPS Conference Coordinator  
WSD, Building 307 EOP, DSTO  
PO Box 1500, Salisbury, SA 5108  
Australia,  
Ph: +61-8-8259-6737; Fax: +61-8-8259-6585  
E-mail: adelaide.ips@dsto.defence.gov.au

**Fill in amount for applicable fees in Australian dollars<sup>#</sup> and then total**

Member Registration\*\* ..... before 7<sup>th</sup> October, A\$ 935 \_\_\_\_\_

Member Registration ..... after 7<sup>th</sup> October, A\$ 990 \_\_\_\_\_

Non-Member Registration ..... before 7<sup>th</sup> October, A\$ 990 \_\_\_\_\_

Non-Member Registration ..... after 7<sup>th</sup> October, A\$1045 \_\_\_\_\_

Retired or Full Time Student Registration, ..... A\$ 660 \_\_\_\_\_

Companion Monday Cocktail Evening<sup>@</sup>, ..... A\$ 22 \_\_\_\_\_

Companion Tuesday Evening Picnic Dinner<sup>@</sup>, ..... A\$ 22 \_\_\_\_\_

Companion Wed. Barossa Valley Excursion<sup>##</sup>, ..... A\$ 58 \_\_\_\_\_

Companion Thursday Evening Banquet<sup>@</sup>, ..... A\$ 40 \_\_\_\_\_

Companion Lunches, ..... Mon. \_\_Tue. \_\_Wed. \_\_Thu. \_\_Fri. \_\_ A\$ 22 ea. \_\_\_\_\_

Total Fees Due A\$ \_\_\_\_\_

Only VISA or Mastercard credit cards can be used to pay fees. Alternatively bank drafts, international money orders or cheques in Australian dollars at Australian Banks payable to "28<sup>th</sup> International Pyrotechnics Seminar c/- RPM".

To pay by credit card, tick VISA ( ) Mastercard ( )

Credit Card Number: \_\_\_\_\_ Expires: \_\_\_\_\_

Signature: \_\_\_\_\_

# At current exchange rates A\$990 is US\$505. Payment is required in Australian dollars.

\*\*Registration includes Proceedings, satchel, morning/afternoon teas, cocktail evening, picnic dinner, Barossa Valley excursion, banquet, 5 lunches. All fees include compulsory 10% GST (Goods and Services Tax). Fee assessment date is date registration form information is received.

@ Conference providing approx. half subsidy of these activities for companions.

## Barossa Valley Excursion by train & bus may be limited; placements are on a first come basis. Numbers exceeding 152 places will have bus transport.