

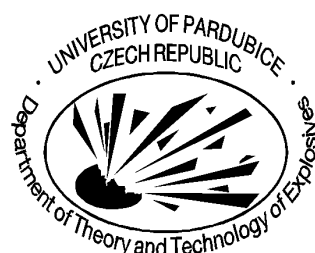


UNIVERSITY OF PARDUBICE
Faculty of Chemical Technology
Department of Theory & Technology of Explosives
CZ-532 10 Pardubice
<http://www.upce.cz/~kttv>



FINAL PROGRAM
of the seventh Seminar

**NEW TRENDS IN RESEARCH
OF ENERGETIC MATERIALS**



held at University of Pardubice

Pardubice, the Czech Republic

April 20 - 22, 2004

*intended as a meeting of students, postgraduate students, university teachers and
young research and development workers concerned from the whole world*



AUSTIN DETONATOR



Indet Safety Systems



OZM Research Ltd.

Seminar is supported by:

*European Office of Aerospace Research and Development of the USAF,
Austin Detonator, Inc., Vsetín,
Indet Safety Systems, Inc., Vsetín, a member of Nippon Kayaku group,
Faculty of Chemical Technology, University of Pardubice,
Dr. Oldrich Machacek, president of UTeC Corp., LLC, Dallas,
OZM Reasearch, Ltd., Hrochův Týnec*

Chairman of the Seminar:

Prof. Svatopluk Zeman, D.Sc.

Scientific Committee:

Prof. Ang How-Ghee	<i>(National Univ. of Singapore)</i>
Dr. Anthony J. Bellamy	<i>(Cranfield Univ, UK)</i>
Prof. Anatolii N. Dremin	<i>(RAS Chernogolovka, Russia)</i>
Dr. Stanislaw Cudzilo	<i>(Military Univ. Technol., Warsaw, Poland)</i>
Prof. Thomas Klapoetke	<i>(Ludwig-Maximilians-Universität München)</i>
Prof. Michel Lefevre	<i>(Royal Military Academy, Belgium)</i>
Prof. František Ludvík	<i>(Military Academy Brno, Czech Rep.)</i>
Prof. Andrzej Maranda	<i>(Military Univ. Technol., Warsaw, Poland)</i>
Prof. Hans J. Pasman	<i>(Delft Univ., The Netherland)</i>
Dr. Muhamed Sućeska	<i>(Brodarski Inst., Zagreb, Croatia)</i>
Prof. Waldemar A. Trzciński	<i>(Military Univ. Technol., Warsaw, Poland)</i>
Assoc. Prof. Pavel Vávra	<i>(Univ. of Pardubice, Czech Rep.)</i>
Dr. Fred Volk	<i>(ICT Pfinztal, Germany)</i>
Dr. Woodward Waesche	<i>(Office of Naval Res. Int. Field Office, USA)</i>

Organizing Committee:

Chairman:	Jiří Vágenknecht, Ph.D.	<i>(University of Pardubice)</i>
Members:	Gabriela Hurtosová, M.Sc.	<i>(University of Pardubice)</i>
	Zdeněk Jalový, Ph.D.	<i>(University of Pardubice)</i>
	Assoc. Prof. Břetislav Janovský	<i>(University of Pardubice)</i>
	Marcela Jungová, M.Sc.	<i>(University of Pardubice)</i>
	Miloslav Krupka, Ph.D.	<i>(University of Pardubice)</i>
	Richard Kuracina, M.Sc.	<i>(University of Pardubice)</i>
	Robert Matyáš, M.Sc.	<i>(University of Pardubice)</i>
	Jiří Pachmáň, M.Sc.	<i>(University of Pardubice)</i>
	Vojtěch Pelikán, M.Sc.	<i>(University of Pardubice)</i>
	Radovan Skácel, Mgr.	<i>(University of Pardubice)</i>
	Jakub Šelešovský, M.Sc.	<i>(University of Pardubice)</i>
	Jaroslav Švihovský, M.Sc.	<i>(University of Pardubice)</i>
	Róbert Varga, M.Sc.	<i>(University of Pardubice)</i>
	Pavel Valenta, MSc.	<i>(Austin Detonator)</i>
	Dr. Jan Jakubko	<i>(Indet Safety Systems)</i>

GENERAL INFORMATION

Seminar Venue:

Seminar will take place at a **University Hall**, which is a part of University Library (*see enclosed map*).

Lunches:

There is a possibility to bespeak lunches in University cafeteria one day before the lunch. Price (*approximate*) of the lunch ~ 70,- CZK (with autoservice and without drinkables)

There are also restaurants within the walking distance from meeting hall.

Official Language:

The official working language will be **English**.

Registration fees:

No fees will be charged.

Proceedings:

The Proceedings will be provided to the members of scientific committee and main authors free of charge.

Other participants can buy corresponding Proceedings at the beginning of the Seminar.

Price of the Proceedings (two volumes) of 7th seminar will be 800,- CZK (i.e. ~ € 25.-, or \$30.60) printed version and 350,- CZK (i. e. € ~11.-, or \$13.40) for electronic version (CD) – all these only for Seminar time. Limited amount of printed version of Proceedings from the 4th, 5th and 6th seminars is also available for 750,- CZK (i. e. € 23.-, or \$28.70).

Presentation of papers:

Data, slide and sheet projectors, overhead projector and devices for Power Point presentation will be available for oral presentation.

Tables (*1980 or 850 mm high and 1000 mm wide*) will be available for poster presentation.

Registration of participants:

Registration of participants will take place at the University Hall:

April 19th 4:00PM - 7:00 PM

April 20th 7:30AM - 10:00 AM

Service for foreign participants:

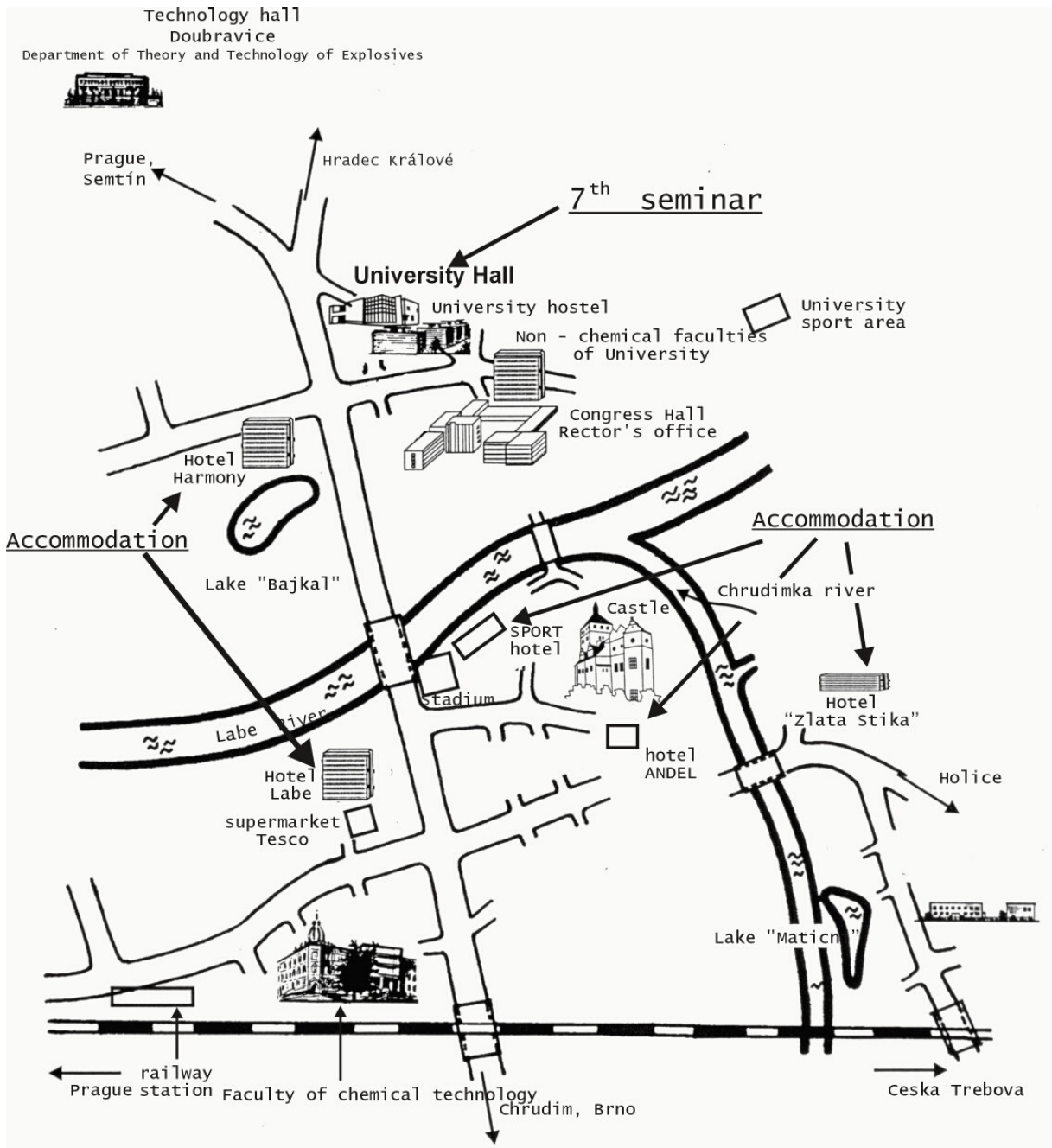
One personal computer with the Internet will be reserved in the University Library.

Special Program:

A friendly get-together for foreign participants and for workers and co-workers of Dept. of Theory & Technology of Explosives will be arranged at **Pardubice's Castle** on April 21st (*see on page 16*).

In the case of participants interest it is possible to organize a visit of the Department of Theory and Technology of Explosives.

7th SEMINAR - orientation map – town PARDUBICE



LECTURE PROGRAM – Tuesday April 20th

08:40 **Opening of Seminar** – speech of Prof. Ladislav Tichý, D.Sc.,
vice-dean of the Faculty OF Chemical Technology

1. Session

Chairman: Prof. Svatopluk Zeman
University of Pardubice

09:00 Dremin Anatolii, Prof.
Institute of Problems of Chemical Physics, Russian Acedemy of Sience, Chernogolovka
ON MATERIAL'S CAPABILITY TO DETONATE.

09:35 Pasman Hans, Prof., and Zevenbergen John F.
Faculty of Applied Sciences, Technical University, Delft, The Netherlands
NEW SAFETY THINKING APPLICATION TO EM SYNTHESIS AND MANUFACTURE.

10:10 Klapötke Thomas, Prof., Holl G., Geith J., Hammerl A. and Weigandathieu J.
Ludwig-Maximilians-Universität, München, Germany
NEW HIGH EXPLOSIVES AND PROPELLANTS BASED ON BIURET AND TETRAZOLE COMPOUNDS.

10:45 Beaucamp Sylvian, Mathieu Didier and Agafonov Vaitcheslav
CEA-Le Ripault, F-37260 Monts, France
DEVELOPMENT OF NEW ENERGETIC SALTS FOR PROPELLANTS

11:05 - 11:30 Coffee break

11:30 Bellamy Anthony J., Goede Patrick and Latypov Nikolay
Dept. of Environmental & Ordnance Systems, Cranfield University, Shrivenham, U.K.
STUDIES ON THE NITRATION OF NEW POTENTIAL PRECURSORS FOR FOX-7

11:50 Gramasheva Natalia V., Chemagina I. V., Filin V. P., Kozakova M. B. and Loboiko B. G.
Zababakhin Russian Federal Nuclear Centre, Snezhinsk, Russia
INVESTIGATION OF DIAMINODINITROETHYLENE (DADNE).

12:10 Bellamy Anthony J., and Price Terence P.
Dept. of Environmental & Ordnance Systems, Cranfield University, Shrivenham, U.K.
A1:1 HNS-DIOXAN COMPLEX.

12:30 Nepovím Aleš, Podlipná R., Zeman S., Jalový Z., Gerth A. and Vaněk T.
Institute of Organic Chemistry & Biochemistry, Czech Academy of Sciences.
STUDY OF TNT METABOLISM IN PLANT AND ITS PRACTICAL APPLICATION FOR ENVIRONMENT DECONTAMINATION.

12:50-14:10 LUNCH BREAK

LECTURE PROGRAM – Tuesday April 20th

2. Session

Chairman: Prof. Michel Lefevre
Royal Military Academy, Belgium

- 14:10 Bladek Jan, Prof. Pietrasiak Sylwia and Cudzilo S.
Military University of Technology, Warsaw, Poland
DETERMINATION OF RESIDUE OF EXPLOSIVES IN ENVIRONMENTAL SAMPLES
- 14:30 Hamid Javid
QINETIQ Ltd., Energetic Materials Dept., DSTL, Fort Halstead, U.K.
APPLICATION OF NOVEL ENERGETIC MATERIALS FOR INITIATION AND EXPLOSIVE TRAINS.
- 14:50 Cudzilo Stanislaw, Kiciński Wojciech, Bładek Jan, Arciszewska A. and Huczko A.
Military University of Technology, Warsaw, Poland.
CHARACTERIZATION OF THE CARBONACEOUS PRODUCTS OF HALOGENOCARBONS REDUCTION IN COMBUSTION WAVE.
- 15:10 Prentice Helen and Proud W. G.
PCS Group, Cavendish Laboratory, Cambridge, U.K.
EXPERIMENTAL INVESTIGATION OF IGNITION MECHANISM IN CONFINED ENERGETICS.
- 15:30 – 15:50 Coffee break**
- 15:50 Siviour Clive R., Grantham S.G., Williamson D.M., Proud W.G., Walley S.M. and Field J.E.
PCS Group, Cavendish Laboratory, Cambridge, U.K.
HIGH RESOLUTION OPTICAL ANALYSIS OF DYNAMIC EXPERIMENTS ON PBXs.
- 16:10 Ježová Věra, M.Sc., Eisner Aleš, Ph.D., Gollová L., Ventura Karel, Assoc.Prof
Dept. of Analytical Chemistry, University of Pardubice, 532 10 Pardubice, Czech Republic
Skládal Jan, Ph.D
Research Institute of Industrial Chemistry, Explosia a.s., Pardubice – Semtín 532 17, CZ
DETERMINATION OF LOW CONCENTRATION TNT CONTENT IN WATER SAMPLES.
- 16:30 Akštein Zbyněk, M.Sc.
Explosia, Ltd. - Institute of Industrial Chemistry, Pardubice, Czech Rep.
INFLUENCE OF TAMPING ON PERFORMANCE OF LINEAR SHAPED CHARGES.
- 16:50 Muthurajan Harris, Sivabalan.R, Talawar M. B. and Asthana S. N.
Armement Res. & Development Estabilishment, Pashan, Pune, India
DEVELOPMENT OF NOVEL COMPUTER CODE FOR PREDICTION OF HEAT OF FORMATION OF HIGH ENERGETIC MATERIALS.

LECTURE PROGRAM – Wednesday April 21st

3. Session

Chairman: Dr. Fred Folk
ICT Pfinztal

- 09:00 Williamson David
PCS Group, Cavendish Laboratory, Cambridge, U.K.
DEFORMATION AND FRACTURE OF ENERGETIC MATERIALS AND THEIR SIMULANTS
- 09:20 Lefebvre Michael, Prof.
Royal Military Academy, Laboratory for Energetic Materials, Brussels, Belgium
PERFORMANCE OF NON-REGULAR EXPLOSIVES.
- 09:40 Gheorghian Sorin, PhD.
Military Technical Academy, Bucharest, Romania
ESTIMATION OF THE THERMODYNAMIC PROPERTIES OF SOLID PROPELLANTS
- 10:00 Shiskov P., Tzvetkoff Tz., Glavchev Ivan, Prof. D.Sc., and Ganev Radi
University of Chemical Technology and Metallurgy, Sofia, Bulgaria,
THERMAL AND THERMO-MECHANICAL INVESTIGATIONS OF LONG TIME STORED PROPELLANTS.
- 10:20 Wild Richard, MSc.
Diehl Munitionssysteme GmbH & Co KG, Nonnweiler, Germany
EFFECT OF THE COATING PROCESS OF HE MOULDING POWDERS ON SAFETY AND IM CHARACTERISTICS.
- 10:40-11:00 Coffee break**
- 11:00 Sućeska Muhamed, DSc., Matečić-Mušanić Sanja, MSc., Rajić-Linarić Maša, MSc.
Brodarski Institut, Zagreb, Croatia
INFLUENCE OF NC PROPELLANT SAMPLE SELF-HEATING ON ARRHENIUS KINETIC CONSTANTS DERIVED FROM NON-ISOTHERMAL DSC MEASUREMENTS.
- 11:20 Wilker Stephan, Dr., Heeb G., Frank S., Guillaume P., Jeunieu L. and Lefebvre M. H.,
WIWEB ASt Heimerzheim, Swisttal, Germany,
STABILITY ANALYSES OF ROLLED BALL PROPELLANTS.
- 11:50 Bahulayan Damodaran, Joshua C. P. and Ang How-Ghee, Prof.
HEDM Research Lab., Faculty of Science, National University of Singapore.
LIQUID PHASE AND SOLID PHASE NITRATION OF AROMATIC COMPOUNDS: GREEN SYNTHETIC ROUTES
- 12:10 Lipińska Katarzyna, Lipiński Marek, Maranda Andrzej and Sobala Jacek
Institute of Organic Industrial Chemistry, Warsaw, Poland.
RESEARCH ON THE INFLUENCE OF AMMONIUM NITRATE PRILL PROPERTIES ON DETONATION PARAMETERS OF ANFO AND THEIR MIXTURES WITH DEMILITARIZED DOUBLE BASE PROPELLANTS.

12:30 - 14:00 Lunch break.

POSTER PROGRAM – Wednesday April 21st

14:00 – 17:00 **POSTER SESSION** (*see on page 10*)

18:00 - 22:00 **SPECIAL PROGRAM** (*at Pardubice's Castle - see on page 16*)

LECTURE PROGRAM – Thursday April 22nd

4. Session

Chairman: Dr. Stanislaw Cudzilo
Military Univ. Technol., Warsaw, Poland

- 09:00 Egorshchov Viacheslav. Y., Dr., Sinditskii V. P., Prof., and Berezin M. V.
Mendeleev University of Chemical Technology, Moscow, Russia
STUDY ON COMBUSTION OF GLYCIDYL AZIDE OLIGOMERS AND THEIR COMPOSITIONS WITH POLYMERS
- 09:20 Vasile Titica, Prof.
Military Technical Academy, Bucharest, Romania
STUDIES AND RESEARCHES REGARDING THE UTILIZATION OF RESULTS OBTAINED AT THE BURNING OF POWDER IN CLOSED BOMB FOR SOLVING OF FUNDAMENTAL PROBLEM OF INTERIOR BALLISTICS
- 09:40 Šimáček Martin, M.Sc. and Kuttelwischer Vít, M.Sc.
Military Academy, CZ-612 00 Brno, Czech Republic
Stojan Petr, M.Sc.
Explosia, Ltd. – Inst. of Industrial Chemistry, CZ-532 17 Pardubice, Czech Rep.
INFLUENCE OF VELOCITY OF GAS FLUX TO THE BURNING SURFACE.
- 10:00 Milyokhin Yu. M., Klyuchnikov A. N., Fedorychev A. V. and Gunin S. V.,
Federal Center of Dual-Use Technologies “Soyuz”, Dzerzhinskii, Moscow Region, 140 090
Serushkin Valerii V., Assoc. Prof., Sinditskii Valerii P., Prof., and Filatov S. A.
Mendeleev University of Chemical Technology, Miusskaya Sq. 9, 125 047 Moscow, Russia
IDENTIFICATION OF SOLID PROPELLANT COMBUSTION DYNAMIC CHARACTERISTICS FROM THE RESULTS OF EXPERIMENTS WITH REGISTRATION OF THE CURRENT BURNING FRONT POSITION
- 10:20-10:50 Coffee break**
- 10:50 Piotrowski Tadeusz, Dr. Sałaciński Tomasz, Frączak Michał and Buczowski Daniel
Institute of Organic Industry, Warsaw, Poland
TEMCLEV-EX. ADAPTION OF TEMCLEV SYSTEM TO FIRE AND EXPLOSION HAZARD ASSESMENT IN MANUFACTURING EXPLOSIVES
- 11:10 Tiepel Ulrich, Dr., Förster-Barth Ulrich and Krause Hans
Fraunhofer Inst. für Technologie (ICT), Pfinztal, Germany
MECHANICAL PROPERTIES OF GEL-PROPELLANTS WITH NANOPARTICLES
- 11:30 van Rooyen Fritz
National Institute for Explosives technology (NIXT), P. O. Box 5503, Arcadia, Pretoria, 0007, Rep. South Africa
THE ETHICS OF ANALYSIS AND MEASUREMENTS – IS YOUR ANSWER THE TRUE ANSWER?
- 11:50 CLOSING REMARKS including PRIZES AWARDING**

POSTER PROGRAM

Posters should be hanged out on Tuesday, *April 20th*, before 12:00. A special poster sessions will take place on Wednesday (*April 21st*) from 15:00 up to 17:00 h. During this time authors should be present for discussion at the posters.

- P 1** Aduiev B. P., Prof., Aluker E. D., Prof, Belokurov G. M., Filin V. P. Krechetov A. G., Mitrofanov A. Yu., and Pashpekin A. S.
Kemerovo State University, Krasnaya 6, 650 043 Kemerovo, Russia
KINEICS FEATURES OF INITIAL STAGES OF HEAVY METAL AZIDE EXPLOSIVE DECOMPOSITION
- P 2** Aduiev B. P., Prof., Aluker E. D. Prof., Loboiko V. A. and Tupitsin E. V.
Kemerovo State University, Krasnaya 6, 650 043 Kemerovo, Russia
ORIGIN TOPOGRAPHY OF A CHAIN REACTION OF HEAVY METAL AZIDE EXPLOSIVE DECOMPOSITION INITIATED BY AN ELECTRON PULSE
- P 3** Aduiev B. P., Prof., Aluker E. D. Prof., Tupitsin E. V. and Krechetov A.G.
Kemerovo State University, Krasnaya 6, 650 043 Kemerovo, Russia
THE INFLUENCE OF TEMPERATURE ON A RATE OF A CHAIN REACTION OF HEAVY METAL AZIDE
- P 4** Eisner, Aleš, Ph.D., Adam M., Ventura K., Ježová V.
Department of Analytical Chemistry, Faculty of Chemical – Technology, University of Pardubice, Nám. Čs. Legií 565, Pardubice 532 10, CZ
Skládal Jan, Ph.D
Research Institute of Industrial Chemistry, Explosia a.s., Pardubice – Semtín 532 17, CZ
ANALYSIS AFTER COMBUSTION OF PROPELLANTS
- P 5** Raikova Vlada M., Dr., and Likholatov Evgenii A.
Mendeleev University of Chemical Technology, Miusskaya Sq. 9, 125 047 Moscow, Russia
THE CHEMICAL KINETIC AT DETONATION OF AROMATIC NITROCOMPOUNDS – NITRIC ACID MIXTURES
- P 6** Sinditskii Valery P., Prof., Levshenkov Anton I., Egorshv Viacheslav Yu., Assoc. Prof., and Serushkin Valerii V., Assoc. Prof.
Mendeleev University of Chemical Technology, Miusskaya Sq. 9, 125 047 Moscow, Russia
COMBUSTION OF DINITRAMIDE SALTS
- P 7** Bladek Jan, Prof., Arciszewska A., Cudzilo S., Kicinski W.
Military University of Technology, Kaliskiego 2, PL-00-908 Warszawa, Poland
APPLICATION OF CARBONACEOUS PRODUCTS OF HALOGENOCARBONS REDUCTION FOR SOLID PHASE EXTRACTION
- P 8** Bladek Jan, Prof., Kowalczyk R. and Cudzilo S.
Military University of Technology, Kaliskiego 2, PL-00-908 Warszawa, Poland
APPLICATION OF TLC FOR ANALYSIS OF INITIATING EXPLOSIVES
- P 9** Varga Róbert, M.Sc.
Dept. o Theory & Technology of Explosives, University of Pardubice, 532 10 Pardubice,
Ulbrich Pavol, M.Sc., Koložvári Marek, and Funková Mária,
Inst. of Forensic Science of the Slovak Police Corps, SK-812 72 Bratislava, Slovak Rep.
TRACE ANALYSIS OF EXPLOSIVES BY LC-MSD TECHNIQUE
- P 10** Očko Peter, M.Sc., Chovancová Martina, M.Sc., Pechová Alžbeta and Lazar Miloš
Military Technical & Testing Inst., Zahorie, Slovak Rep.
AGEING INFLUENCE ON STABILITY, SENSITIVITY AND FUNCTION PROPERTIES OF PETN EXPLOSIVES

- P 11** Matečić-Mušanić Sanja, M.Sc., Sućeska Muhamed, D.Sc., Rajić-Linarić Maša, M.Sc., Bakija Sanko, M.Sc., Čuljak R.
Brodarski Institut, ul. V. Holjevca 20, HR-10020 Zagreb, Croatia
THE CHANGES OF DYNAMIC MECHANIC PROPERTIES OF DOUBLE BASED ROCKET PROPELLANTS DURING ACCELERATED AGEING
- P 12** Rajić-Linarić Maša, M.Sc., Sućeska Muhamed, D.Sc., Matečić-Mušanić Sanja, M.Sc., Čuljak R.,
Brodarski Institut, ul. V. Holjevca, HR-10020 Zagreb, Croatia
THE CHANGES OF THERMOCHEMICAL PROPERTIES OF NC PROPELLANTS DURING ACCELERATED AGING
- P 13** Smileski Rose, Prof., Popovski O. and Naumoski J.
Military Academy "General Mihailo Apostolski" Skopje, the Republic of Macedonia
DETERMINATION OF CHEMICAL STABILITY OF GUNPOWDERS BY QUALITATIVE AND QUANTITATIVE METHODS
- P 14** M. Cieślukowska, M. Moskalewicz and T. Wolszakiewicz
Institute of Organic Industrial Chemistry, Annopol 6, 03 – 236 Warsaw, Poland
THE EXAMINATION OF CHOSEN BALLISTIC PARAMETERS OF IGNITER CHARGE BKNO₃ FOR IGNITERS OF SOLID PROPELLANT ROCKET MOTORS
- P 15** M. Lipiński, K. Lipińska, B. Florczak and W. Witkowski
Institute of Industrial Organic Chemistry, Annopol St., 03-236 Warszawa, Poland
UNSATURATED POLYESTER INHIBITION SYSTEM FOR DOUBLE BASE PROPELLANTS
- P 16** Kuracina Richard, M.Sc., Ferjenčík Miloš, Ph.D. and Janovský Břetislav, Assoc. Prof.
Dept. of Theory & Technology of Explosives, University of Pardubice, CZ-532 10 Pardubice
PROCESS SAFETY INCIDENT INVESTIGATION IN CHEMICAL INDUSTRY
- P 17** Adamík Vladislav, Dr. and Janovský Břetislav, Assoc. Prof.
Dept. of Theory & Technology of Explosives, University of Pardubice, CZ-532 10 Pardubice
Tkáč Andrej, M.Sc.
Nuclear Power Plants Research Institute, Trnava, Slovak Republic
DETERMINATION OF THE CONSEQUENCES OF THE POSSIBLE INDUSTRIAL ACCIDENTS
- P 18** Adamík Vladislav, Dr. and Vágenknecht Jiří, Dr. Vávra Pavel, Assoc. Prof.
Dept. of Theory & Technology of Explosives, University of Pardubice, CZ-532 10 Pardubice
Trzciński Waldemar A., Prof.
Military University of Technology, Warsaw, Poland
EFFECT OF TNT CHARGES ORIENTATION ON GENERATED AIR BLAST WAVES: NUMERICAL SIMULATION USING LS-DYNA
- P 19** Janovský Břetislav, Assoc. Prof., Bauer Ivo, Zigmund Jan and Černín Milan
Dept. of Theory & Technology of Explosives, University of Pardubice, CZ-532 10 Pardubice
DISSLOVER VER. 1.1 HELPS CENTRAL MINING RESCUE STATION
- P 20** Walenta Z.A.
Institute of Fundamental Technological Research, Polish Academy of Sciences Swietokrzyska 21, 00-049 Warszawa, Poland
Teodorczyk Andrzej
Institute of Heat Engineering, Warsaw University of Technology Nowowiejska 25, 00-665 Warszawa, Poland
Witkowski Waldemar
Institute of Industrial Organic Chemistry, Annopol 6, 03-236 Warszawa, Poland
DIRECT MONTE – CARLO SIMULATION OF DETONATION PROCESS IN A GAS
- P 21** van Rooyen Fritz
National Institute for Explosives technology (NIXT), Arcadia, Pretoria, 0007, Rep. South Africa
ACCURATE DETERMINATION OF THE RELATIVE DENSITY OF OBJECTS BY MEANS OF THE ARCHIMEDES PRINCIPLE

- P 22** Pospíšil Miroslav, Ph.D.
Dept. of Chemical Physics, Faculty of Mathematics & Physics, Charles University, Prague
Vávra Pavel, Assoc. Prof.
Dept. of Theory & Technolo. of Explos., University of Pardubice, CZ
STUDY OF ELECTRON DENSITY OF MOLECULES, INTERMOLECULAR FORCES AND IMPACT SENSITIVITY OF EXPLOSIVES
- P 23** Zeman Svatopluk and Zemanová Eva
Dept. of Theory & Technology of Explosives, University of Pardubice, CZ-532 10 Pardubice,
APPLICATION POSSIBILITIES OF POLAROGRAPHY IN STUDIES OF CHEMICAL MICRO-MECHANISM OF INITIATION OF POLYNITRO ARENES
- P 24** Mathieu Didier, Dr., Becker Jean-Paul and Theerlynck Eric
CEA-Le Ripault, BP 16, F-37260 Monts, France
BEYOND THE GROUP CONTRIBUTION APPROACH TO FLUIDS PROPERTIES: NEW MODELS FOR THE DENSITY AND THERMAL STABILITY OF ENERGETIC COMPOUNDS
- P 25** Dudek Kamil, Ph.D., Mareček Pavel, M.Sc., Skládal Jan, Ph.D.
Explosia, Ltd. - Institute of Industrial Chemistry, CZ-532 17 Pardubice, Czech Rep.
Jalový Zdeněk, Ph.D.,
Dept. of Theory & Technology of Explosives, University of Pardubice, CZ-532 10 Pardubice,
SYNTHESIS AND SOME PROPERTIES OF BUNENA
- P 26** Mareček Pavel, M.Sc., and Dudek Kamil, Ph.D.
Explosia, Ltd. - Inst. of Industrial Chemistry, CZ-532 17 Pardubice, Czech Rep.
Liška František, Prof.,
Prague's Institute of Chemical Technology, Prague, Czech Rep.
SYNTHESIS OF BIS(1H-TETRAZOL-5-YL)AMINE (BTA)
- P 27** Jadhav H. S. and Dhavale D. D.
Department of Chemistry, Garware Research Centre, University of Pune, Pune 411 007, India
Krishnamurthy V. N.
DRDO/ISRO Cell, University of Pune, Pune 411 007, India
Talawar M. B. and Asthana S. N.
High Energy Material Research Laboratory, Sutarwadi Pashan, Pune 411 021, India
SYNTHESIS AND CHARACTERISATION OF NITROQUANIDINE BASED NITRATE AND PERCHLORATE SALTS OF -5-NITRO-2-NITROIMINOHEXAHYDRO-1,3,5-TRIAZINE
- P 28** Geith Janna, Karaghiosoff K., Klapötke T.M., Mayer P. and Weigandathieu J.
Department of Chemistry and Biochemistry, University of Munich, Butenandtstr. 5-13 (D), D-81377 Munich (Germany)
DINITROBIURET AND ITS SALTS
- P 29** Astachov Alexandr M., Assoc. Prof., Revenko Vitalii A., and Buka Eduard S.
Siberian State Technological University of, prosp. Mira 82, Krasnoyarsk, 660 049 Russia
COMPARATIVE CHARACTERISTICS TWO ISOMERIC EXPLOSIVES: 4-NITRO-5-NITRIMINO-1H-1,2,4-TRIAZOLE AND 3-NITRO-5-NITRIMINO1,4H-1,2,4-TRIAZOLE
- P 30** Stepanov Rudolf S., Prof., Kruglyakova Ludmila A., and Astachov Alexandr M.
Siberian State Technological University of, prosp. Mira 82, Krasnoyarsk, 660 049 Russia
GEMINAL DINITROCOMPOUNDS THERMAL DECOMPOSITION UNDER NON-ISOTHERMAL CONDITIONS
- P 31** Grozev Valentin, Assoc. Prof., Ganev Radi, Grozeva Z. and Glavchev I.
Konstantin Preslavskii University, Universitetska Str. 115, 9712 Shumen, Bulgaria
EFFECTS ON ENERGETIC MATERIALS PROCESSED WITH POWER ULTRASOUND
- P 32** Janković Branimir, Vrkljan Darko, Ester Zvonimir, Prof.
Faculty of Mining, Geology and Petroleum Engineering, Pierottijeva 6, 10-000 Zagreb, Croatia
EXPLOSIVE TYPE SELECTION WITH RESPECT TO THE VENTILATION CYCLE DURATION

- P 33** Ester Zvonimir, Prof., Dobrilović Mario, Vrkljan Darko
Dept. of Mining & Geotechnical Engineering, Faculty of Mining, Geology & Petroleum Engineering, Zagreb, Croatia
COMPARISON OF VOD MEASUREMENT RESULTS WITH CONTINUOUS AND DISCONTINUOUS METHOD
- P 34** Žganec Stjepan, MSc.
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Ester Zvonimir, Prof. and Dobrilović Mario, MSc.
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IN SITU MEASUREMENT OF VELOCITY OF DETONATION AND COMPARISON OF HEAVY ANFO PRODUCED IN THE FIELD OF USAGE AND CARTRIDGE EXPLOSIVES
- P 35** Nesvadba Petr, M.Sc.
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APPLICATION OF SHEET EXPLOSIVE FOR METAL HARDENING.
- P 36** Kovalenko Igor L., Ph.D.
Ukrainian State University, Faculty of Inorganic Chemistry, Dnepropetrovsk, Ukraine
Kuprin Alexander V.
EKKOM Ltd., Dnepropetrovsk, Ukraine
NONAERATIONS SENSIBILIZATION OF EMULSIVE EXPLOSIVES
- P 37** Powala Dorota, Dr., Orzechowski Andrzej, Dr.
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Maranda Andrzej, Nowaczewski Jerzy
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SPHERICAL NITROGUANIDINE AS COMPONENT OF HIGH EXPLOSIVES
- P 38** Orzechowski Andrzej, Dr., Powala Dorota,
Institute of Industrial Organic Chemistry, Annopol 6, PL-03-236 Wrasaw, Poland
Maranda Andrzej, Nowaczewski Jerzy
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INFLUENCE OF INSENSITIVE ADDITIVES ON DETONATION PARAMETERS OF PBX
- P 39** Trześciński Waldemar A., Prof. Dr., and Szymańczyk Leszek
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DETONATION PERFORMANCES OF LOW-SENSITIVITY NTO/HMX EXPLOSIVES
- P 40** Špásová Renata, M.Sc.
Explosia, Ltd. – Inst. of Industrial Chemistry, CZ-532 17 Pardubice, Czech Rep
DETERMINATION OF EXPLOSIVE PROPERTIES
- P 41** Paszula Józef, Dr., Maranda Andrzej, Prof. and Golabek Barbara
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Kasperski Johann, M.Sc.
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AN UNDERWATER TEST FOR LVC EMULSION EXPLOSIVES
- P 42** Velehradský Ladislav, M.Sc., Petržílek Jan, Ph.D. and Puš Václav, M.Sc.
Explosia, Ltd. – Inst. of Industrial Chemistry, CZ-532 17 Pardubice, Czech Rep.
PROPELLANTS FOR 30 MM AMMUNITION
- P 43** Leinweber Karel, M.Sc.
Explosia, Ltd. - Inst. of Industrial Chemistry, CZ-532 17 Pardubice, Czech Rep.
INTERNAL BALLISTICS ANALYSIS OF THE 20x120 CARTRIDGE
- P 44** Vávra Jan, M.Sc. and Vávra Pavel, Assoc. Prof.,
DE&MChI and DTTX, University of Pardubice, CZ-532 10 Pardubice
LIFE-COST ANALYSIS AND „GREEN“ ENERGETIC MATERIALS

P 45 Chen Jun and Sun Chengwei
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EXPANSION OF METALLIC TUBES DRIVEN BY HEAD-ON GRAZING DETONATION

P 46 Tan Duowang, Sun Chengwei, Wang Yanping
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ACCELERATION AND VISCO-PLASTIC DEFORMATION OF SPHERICAL AND CYLINDRICAL CASINGS UNDER EXPLOSIVE LOADING

PRESENTATIONS ONLY IN PROCEEDINGS

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MECHANISTICS STUDIES OF DESTRUCTIVE NITRATION OF 2-ALKYL SUBSTITUTED 4,6-DIHYDROXYPYRIMIDINES

Zhou Renbin , Xie Tiebang and Xiang Weixiang
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SIMULATION STUDY ON ARMOUR-PIERCING EFFECT OF ARMOUR-PIERCING BOMB

Shu Yuanjie
Institute of Chemical Materials, Chinese Academy of Engineering Physics, Mian Yang
ON THE REACTIONS OF 2-(DINITROMETHYLENE)-4,5-IMIDAZOLIDINEDIONE WITH ALKALINE AGENTS.

Chen Peng-wan, Dr., Huang Feng-lei and Ding Yan-sheng
National Key Lab. of Explosion & Safety Science, Beijing Institute of Technology, Beijing
MICROSTRUCTURE, MECHANICAL PROPERTIES AND MECHANICAL FAILURE OF POLYMER BONDED EXPLOSIVES.

Akinin Nikolai I., Assoc. Prof. DSc., Apinina Svetlana V., and Kozak Georgii D.
Mendeleev University of Chemical Technology, Moscow, Russia
Ponomarev Igor N.,
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THE EXPLOSION PARAMETERS OF BENZOYL AND CYCLOHEXANONE PEROXIDES

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PULSATING DETONATION PHENOMENON OF CONDENSED EXPLOSIVES

Pleshakov Dimitrii V. and Lotmentsev Yurii M.
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PREDICTION OF THERMODYNAMIC CONDITIONS FOR NITROESTER VAPOR CONDENSATION ON THE SURFACES OF PROCESS APPARATUS DURING THE PRODUCTION OF ENERGETIC MATERIALS

Zbarsky Vitold L., Prof, Stepashkov D. M and Yudin N.V.
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SYNTHESIS OF 4,6-DINITROBENZOFUROXAN

PROGRAM on Wednesday April 21st

at Pardubice's Castle

18:00-19:00 Visit of expositions of the Eastern Czech Museum on the Castle

19:00-22:00 A friendly get-together in the Knight Hall;
Exhibition of the Historical fencing group (after dark);

