UNIVERSITY OF PARDUBICE
Faculty of Chemical Technology
Institute of Energetic Materials
CZ-532 10 Pardubice
http://www.ntrem.com

PROGRAM

*(the **second** version)*
of the activities associated with

the tenth Seminar

"NEW TRENDS IN RESEARCH OF ENERGETIC MATERIALS"

NTREM 2007

held at the University of Pardubice

Pardubice, the Czech Republic

April 25-27, 2007

intended as a meeting of students, postgraduate students, university teachers and young research and development workers, with interest in energetic materials

10TH INTERNATIONAL SEMINAR
"NEW TRENDS IN RESEARCH OF ENERGETIC MATERIALS"

is supported by:

Austin Detonator, Inc., Vsetín,

Indet Safety Systems, Inc., Vsetín, a member of Nippon Kayaku group,

Explosia, Ltd., Pardubice,

Poličské strojírny, Ltd., Polička

BORGATA, Ltd., Praha 5

Faculty of Chemical Technology, University of Pardubice,

OZM Research, Hrochův Týnec

The tenth consecutive Seminar on new trends in research of energetic materials (EMs) is intended to be an international meeting of *young* people and university teachers working in the field of teaching, research, development, processing, analysing and application of all kinds of energetic materials. This meeting will be systematically focused on the topics of **Performance & Decomposition** but attention will also be devoted to other problems related to energetic materials including problems of education in this area. It will not only be aimed at the exchange of professional information but also to create a pleasant meeting where young specialists from different countries will have the opportunity to meet and gain personal contacts.

The organization arrangement of the Seminar is provided by the Institute of Energetic Materials University of Pardubice in the University Hall.

The official language of the Seminar **is English** and all contributions shall be presented and written exclusively in the English language.

Registration fee: ***Students and young researchers*** free of charge, ***other*** free of charge, voluntary donation of $100 to help co-sponsor the seminar would be greatly appreciated. The expenses, related with participation at the Seminar, are fully covered by the participants

Passports and visas: the visitors from most countries need valid passport when entering Czech Republic. Citizens of some countries (Russia, China, Canada, Turkey, India, and Ukraine) require entry visas. Please contact the Czech Embassy or consulate in your country for more information.

Chairman of the Seminar:

Prof. Svatopluk Zeman, D.Sc. (*University of Pardubice, Czech Republic*)

Scientific Committee:

Chairman of the Committee:

Dr. Adam Cumming (*DSTL, Sevenoaks, U.K.*)

Members of the Committee:

Prof. Alexandr Astachov (*Siberian State Technological University, Russia*)
Prof. Karol Balog (*FMT, Slovak Technical University, Trnava*)
Dr. Anthony J. Bellamy (*Cranfield Univ, UK*)
Prof. Stanislaw Cudzilo (*Military Univ. Technol., Warsaw, Poland*)
Prof. Anatolii Dremin (*Inst. of Problems Chem. Phys., Chernogolovka*)
Prof. Zdeněk Friedl (*Chem. Faculty, Brno Univ. of Technology, CR*)
Dr. Alexandr Gromov (*Tomsk Polytech. University, Tomsk Russia*)
Prof. Manfred Held (*EADS/TDW, Schrobenhausen, Germany*)
Prof. Mikhail Ilyushin (*St. Petersburg State Inst. of Technol., Russia*)
Prof. Thomas Klapoetke (*Ludwig-Maximilians-Universität Műnchen*)
Prof. Michel Lefebvre (*Royal Military Academy, Belgium*)
Dr. Carl-Otto Leiber (*Rheinbach, Germany*)
Prof. František Ludvík (*Univ. of Defence, Brno, Czech Rep.*)
Prof. Andrzej Maranda (*Military Univ. Technol., Warsaw, Poland*)
Prof. Tatiyana S. Pivina (*Zelinskii Inst. of Organic Chemistry, Moscow)*
Prof. Peter Politzer (*Univ. of New Orleans, USA*)
Dr. Scott A. Shackelford (*AFRL/PRSP, Edwards AFB, USA*)
Prof. Valerii P. Sinditskii (*Mendeleev Univ. of Chem. Technol., Moscow)*
Prof. Ulrich Teipel (*University Nürnberg and ICT Pfinztal, Germany*)
Prof. Igor Tselinskii (*St. Petersburg State Inst. of Technol., Russia*)
Dr. Allen Tulis (*Energetic Materials Pioneers, Inc., USA*)
Prof. Yuanjie SHU (*Inst. of Chem. Materials, CAEP, Sichuan, China*)
Assoc. Prof. Muhamed Sućeska (*Brodarski Inst., Zagreb, Croatia*)
Prof. Waldemar A. Trzciński (*Military Univ. Technol., Warsaw, Poland*)
Assoc. Prof. Pavel Vávra (*Univ. of Pardubice, Czech Rep.*)
Dr. Woodward Waesche (*SAIC, Gainesville, USA*)

Organizing Committee

Chairman of the Committee:

Assoc. Prof. Břetislav Janovský (*IEM, Univ. of Pardubice, Czech Rep.*)

Members of the Committee:

Assoc. Prof. Ladislav Lehký (*Explosia, Ltd., Pardubice*)
Dr. Jan Jakubko (*Indet Safety Systems, Vsetín*)
Dr. Marcela Jungová (*IEM, Univ. of Pardubice, Czech Rep.*)
Dr. Pavel Valenta (*Austin Detonator, Vsetín*)
Dr. Iva Ulbrichová (*Dean Office, University of Pardubice*)

Affiliated activities:

The first meeting of the Steering Committee of the EU project "***EU Excert***" (*Education & Training in Explosives - www.euexcert.org*) will be begun on **April 24, 2007** at 9 a. m. in a boardroom of the building „Dům techniky", Square of Republic, in Pardubice.

The third meeting of the Editorial Board of the journal ***CENTRAL EUROPEAN JOURNAL OF ENERGETIC MATERIALS* (*CEJEM,* *ISSN 1733-7178*)** will be realized on **April 24, 2007**, together with the first meeting of Scientific Committee of the 10th NTREM, **at 6 p.m.** in Pardubice.

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 3400.-CZK, i. e. €120.- or $160.-).

Price of the Proceedings of the 9th Seminar will be 3300,- CZK (i. e. €120.-, or $160.-), of the 8th seminar will be 2500,- CZK (i.e. €90.-, or $120.-) printed version and 400,- CZK (i. e. €15.-, or $20.-) for electronic version (CD). Limited amount of printed version of Proceedings from the 4th, 5th and 6th seminars is also available for 1000,- CZK per issue (i. e. €35.-, or $50.-) and from 7th Seminar for 1600.-CZK (i. e. €60.-, or $80.-).

Presentation of papers:

Data, slide and sheet projectors, overhead projector and devices for Power Point presentation will be available during oral presentation.
Tables (*two kinds:1470 mm high and 950 mm wide; and 1340 mm high and 950 mm wide*) will be available for poster presentation.

Registration of participants:

Registration of participants will take place at the University Hall:
April 24th 4:00PM - 7:00 PM
April 25th 7:30AM - 10:00 AM

Boarding:

There is a possibility to book lunches in University cafeteria one day before the lunch – prices about CZK100.- (i. e. €4.00). There are also restaurants within walking distance from the meeting hall, for example in the HARMONY Hotel.

Refreshment:

In contrast to previous Seminars, coffee, tea, cakes and mineral water will be provided for the participants paying with vouchers which will be available during registration. The prices of vouchers will be as follows:

mineral water 0.50 liter	10.-CZK	(€0.40)
coffee	15.-CZK	(€0.60)
tea	10.-CZK	(€0.40)
cakes	5.-CZK	(€0.20)

Special Program:

A friendly "get-together" for foreign participants and for workers and co-workers of Institute of Energetic Materials will be arranged at **Pardubice's Castle** on Thursday, April 26th (page 14).

In the case of participants interest it is possible to organize a visit of the Institute of Energetic Materials.

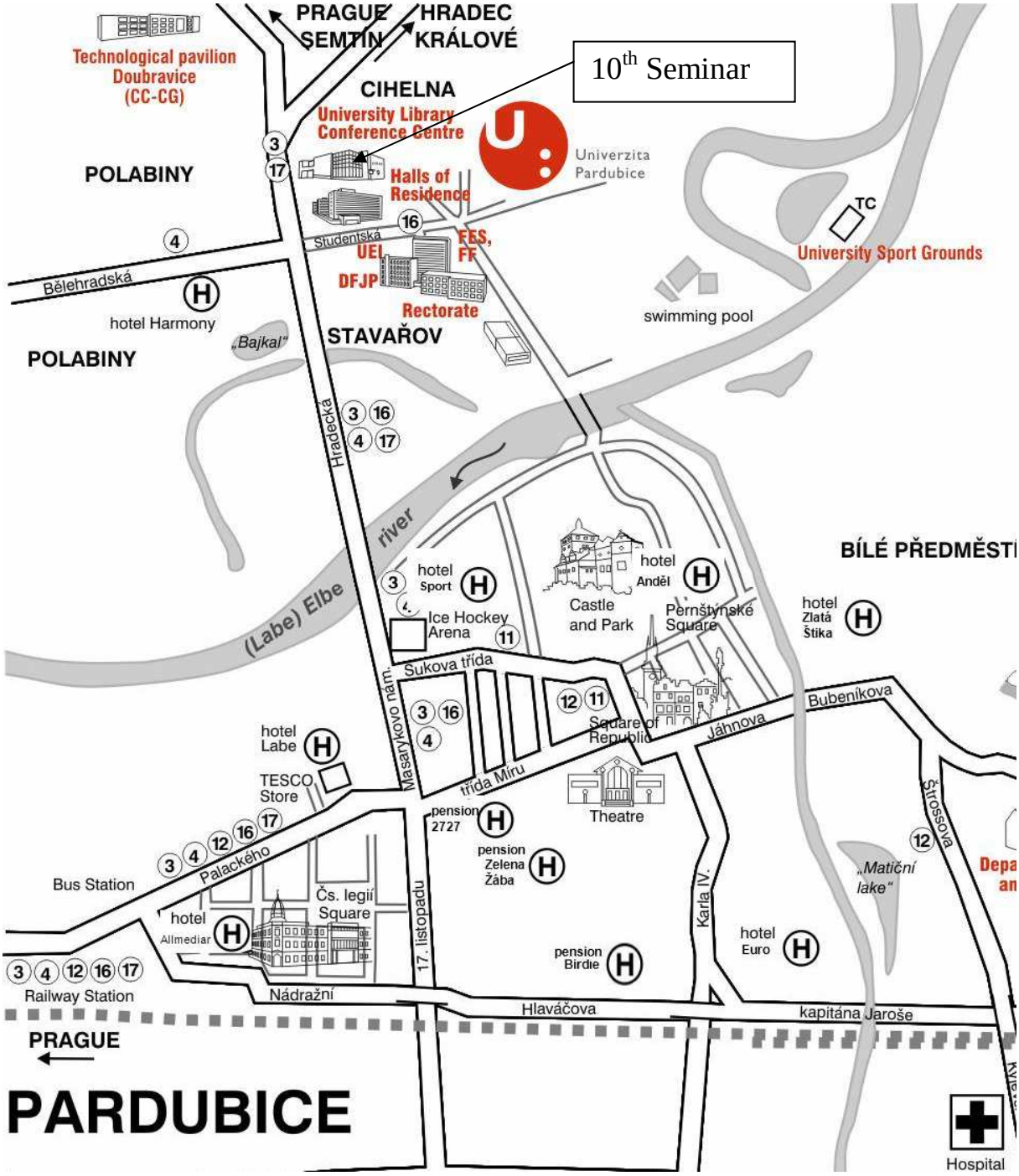
Please, monitor the Web sites http:// www.ntrem.com

THE CONTACT ADDRESS for registration and further information:

Prof. Svatopluk Zeman, D.Sc.
Institute of Energetic Materials
University of Pardubice
CZ-532 10 Pardubice
CZECH REPUBLIC, European Union

Phone: (00420) 46 603 8023
Fax: (00420) 46 603 8024
E-mail: seminar@ntrem.com
svatopluk.zeman@upce.cz

10th SEMINAR - orientation map – town PARDUBICE



LECTURE PROGRAM OF THE 10TH NTREM – Wednesday April 25th

08:40 **Opening of Seminar** – speech of Prof. Tomáš Wágner, PhD.,
vice-dean of the Faculty of Chemical Technology

1. Session

Chairman: Dr. Woodward Waesche
SAIC, Gainesville, USA

09:00 Adam Cumming (*invited lecture)*
DSTL, Fort Halstead, Sevenoaks, Kent TN14 7BP, U. K.
EDA and Energetics Collaboration in Europe

09:30 Erik Nilsson, Hans Wallin
KCEM, Karlskoga, Sweden
EUExcert – Certifying Expertise in the European Explosives Sector.

09:50 Eugenia Bakhmatova, Vyacheslav Korolev, Aleksey Porollo, Tatyana Pivina
Zelinskii Inst. of Organic Chemistry, RAS, Moscow, Russia
C-Nitrocompounds Differentiation through Difference in Thremodestruction Mechanism and Computer Simulation of their Thermodestruction.

10:10 Miroslav Pospíšil, Pavel Vávra
Dept. of Chemical Physics, Faculty of Mathematics & Physics, Charles Univ., Prague
Crystal Structures of Energetic Materials Calculated by Molecular Simulation.

10:30 – 10:50 Coffee break

10:50 Erdogan Aydemir, Dr. Abdullah Ulas and Dr. Nadir Serin
Terminal Ballistic Division, The Scientific & Technol. Res. Council of Turkey, Defense Industries Res. & Development Inst., Ankara, Turkey
REACON-1D: Thermal Analysis Code for Energetic Materials Using Finite Element Method.

11:10 Gui-yu ZENG, Wei-fei YU, Hui HUANG, Chunxu LÜ
Inst. of Chemical Materials, CAEP, Mianyang. Sichuan, China
Preparation of TATB Based Nanocomposite Energetic Materials.

11:30 Alexander Gromov
Chemical Technology Faculty, Tomsk Polytechnic University, Tomsk, Russia
The Mechanism of Aluminium Nanoparticles Burning in Oxidizing Media.

11:50 V. P. Solovyev, Alexander. A. Selezenev, A. Yu. Aleinikov, Valeriy N. Lashkov, A. Yu. Postnikov
Russian Federal Nuclear Center – VNIIEF, Sarov, Russia
Calculation and Experimental Measurements of the HE Specific Heat versus Temperature.

12:10 Zvonko Trontelj
IMFM, University of Ljubljana, Ljubljana
New Achievements in NQR Studies of Energetic Materials.

12:30 - 14:00 LUNCH BREAK

2. Session

Chairman: Prof. Stanislaw Cudziło
Military University of Technology, Warsaw

14:00 Scott A. Shackelford (*invited lecture)*
Air Force Research Lab., AFRL/PRSP, Edwards AFB, CA, USA
Role of Thermochemical Decomposition in Energetic Material Initiation Sensitivity and Explosive Performance.

14:30 Stephan Wilker,
WIWEB ASt Heimerzheim, Großes Cent., Swisttal, Germany
Stability of Mixtures of Stabilized and Unstabilized Propellants – is a "Hot Spot" Theory Realistic?

14:50 Jan M. Welch, Jürgen Evers, Thomas M. Klapötke, Petert Mayer , Gilbert Ochlinger
Ludwig-Maximilian University of Munich, Munich, Germany
The Three Ambient Pressure Polymorphs of FOX-7.

15:10 Michael Göbel, Prof. Thomas M. Klapötke
Ludwig-Maximilian University of Munich, Munich, Germany
Synthesis and Charakterization of N-trinitroethyl Derivatives of Nitrogen Containing Compounds

15:30 Bernhard Hidding, M. Pfitzner, C. Simone, C. Bruno
Heinrich-Heine-Universität, Düsseldorf, Germany
High-Energy-Density Silicon Hydrides.

15:50 – 16:10 Coffee break

16:10 Martin Johansson, Nikolaj V. Latypov, Erik Holmgren, Anthony Bellamy, Ekaterina Sizova, Vladimir Sizov
Swedish Defence Res. Agency (FOI), Tumba, Sweden
On the Synthesis of 1,1-Diamino-2,2-dinitroethane (FOX-7) by Nitration of 4,6-Dihydroxy-2-methylpyrimidine.

16:30 Ekaterina Sizova, Vladimir V. Sizov, Igor V. Tselinskii
Saint-Petersburg State Institute of Technology, Russia
Synthesis of Acyclic and Cyclic 1,1,2,2-Tetraaminoethane Derivatives.

16:50 Sergey D. Shaposhnikov, Svetlana F. Melnikova, Igor V. Tselinskii
Saint-Petersburg State Institute of Technology, Russia
Synthesis of Novel Energetic Compounds in the Series of 3-[Azol-*N*-yl(methyl)]-4-R-furazans.

17:10 Thomas M. Klapötke, Carles Miró Sabaté
Ludwig-Maximilian University of Munich, Munich, Germany
Primary Explosives: Metal Salts of 5-Nitrotetrazole

17:30 Alexander Lukin
Dept. of Mechanics & Physics-Chemistry of Heterogenous Mediums, Inst. of Applied Mechanics, Ural Branch of the RAS, Izhevsk, Udmurtia Rep., Russian Federation
The Problem of Existential Fluctuation of the Physical Fields in the Liquid-Viscous at Burning of the Melting Energetic Materials

LECTURE PROGRAM OF THE 10TH NTREM – Thursday April 26th

3. Session

Chairman: Dr. Scott A. Shackelford
Air Force Research Lab., AFRL/PRSP, Edwards AFB, CA, USA

08:40 Manfred Held (*invited lecture)*
TDW, Schrobenhausen, Germany
Diagnostic of Shaped Charge Jets.

09:10 Andrey Smirnov, Anatolii N. Dremin
Institute of the Problems of Chemical Physics, RAS, Chernogolovka, Moscow Region.
Molecular Dynamics Study of Vibrational Nonequilibrium in Detonation of Polyatomic Liquids.

09:30 Sergey Rybanin, Yurii Mikhailov
Institute of the Problems of Chemical Physics, RAS, Chernogolovka, Moscow Region.
The Number Defining the Realization of the Hot Spots Mechanism at Detonation of Heterogeneous Explosives.

09:50 Joseph E. Backhofen,
BRIGS Co., Oak Hill, VA, USA
The Two-Stage Detonation Propulsion Model: Issues to Ponder - Possibilities for Research.

10:10 Fatih Cengiz , Bekir Narin, Abdulah Ulas
Terminal Ballistic Division, The Scientific & Technol. Res. Council of Turkey, Defense Industries Res. & Development Inst., Ankara, Turkey
BARUT-X: A Computer Code for Computing the Steady-State Detonation Properties of Condensed Phase.

10:30 – 11:00 Coffee break

11:00 Fatih Cengiz, Dr. Bekir Narin and Abdulah Ulas
Terminal Ballistic Division, The Scientific & Technol. Res. Council of Turkey, Defense Industries Res. & Development Inst., Ankara, Turkey
GasPX: A Computer Code for the Determination of the Detonation Properties of Energetic Premixed Gaseous Mixtures.

11:20 Dominik Clément, Karl Rudolf, Ernst-Christian Koch, Bernd Eigenmann
Energetic Materials, Diehl BGT Defence GmbH & Co. KG, Röthenbach a. d. Pegnitz, Germany
Comparison of the Sensitivity of Explosives Produced either by the Slurry or by the Paste Process.

11:40 Mohamed Alouaamari, Michael M. Lefebvre
Dept. of Chemistry, Royal Military Academy, Brussels, Belgium
Comparison of Statistical Assessment Methods for Impact Sensitivity of Energetic Materials.

12:00 Seied Jamaladin Mousavi
Mechanical Engineering Dept., Faculty of Engineering, Bu-Ali Sina University, Hamedan, Iran
Numerical Study of Explosion Effect on Reinforced Concrete Structures.

12:20 – 14:00 LUNCH BREAK

4. Session – Poster program – see on page 10

LECTURE PROGRAM OF THE 10TH NTREM – Friday April 27th

5. Session

Chairman: Dr. Adam Cumming
DSTL Sevenoaks, U.K.

08:40 Ulrich Teipel, Irma Mikonsaari
University of Applied Sciences Nürnberg, Particle Technology, Nürnberg, Germany
Size Reduction of Particulate Energetic Materials.

09:00 Mikhail A. Ilyushin, Igor V. Tselinskii, Irina V. Bachurina, Anatolii V. Chernay
Saint-Petersburg State Institute of Technology, Russia
Laser Initiation of Energetic Metal Complexes with 3-Hydrazino-4-amino-5-R-1,2,4-triazoles as Ligands.

09:20 Jan Páca
Dept. of Fermentation Chemistry & Bioengineering, Prague's Inst. of Chemical Technology, Prague, Czech Rep.
Aerobic Biodegradation of Dinitrotoluenes by Free Cells in Batch Systems.

09:40 Allen Tulis, C. James Dahn
Energetic Materials Pioneers, Inc., USA
Experimental Observations on the Non-Detonative Autocatalytic Dissociation/Decomposition of TNT in the Total Absence of Oxygen.

10:00 C. James Dahn
Safety Consulting Engineers, Inc., Svchaumburg, Illinois, USA
Evaluation and Test Equipment to Measure Propellant and Explosive Powder Ignitron Hazard.

10:20 – 10:40 Coffee break

10:40 Andrzej Paplinski
Military University of Technology, Warsaw, Poland
The use of BKW parameterizations in evaluation of detonation characteristics of condensed explosives.

11:00 Michael Cartwright, Paul Delany, Ian Wallace
Environ. & Ordnance Systems, Cranfield Univ. at the Defence Acad. of the UK
High Mass-Low Velocity Impacts on Explosive Samples and the Effect of Velocity on the Explosive Response.

11:20 Ricardo A. Lopes Mendes
Lab. Energetics and Detonics, University of Coimbra, Portugal
Features of the Detonation Behaviour of the Emulsion Explosives.

11:40 - 12:15 CLOSING REMARKS including AWARDING OF PRIZES

POSTER PROGRAM OF THE 10TH NTREM **– Thursday April 26th**

4. Session

Chairman: Prof. Svatopluk Zeman
University of Pardubice, Czech Rep.

Posters should be hung on Thursday, ***April 26th***, before 10:30. Special poster sessions will take place on Thursday (***April 26th***) from 14:00 up to17:00 h. During this time authors should be present for discussion at the posters.

P.1 Marcela Jungová, Vladislav Adamík, Pavel Vávra
Inst. of Energetic Materials, University of Pardubice, Pardubice
Initiation Strength of Detonators – Experiment and Simulation.

P.2 Pavel Prchal, Ladislav Velehradský
Res. Institute of Industrial Chemistry, Explosia, Ltd., Pardubice, Czech Republic
Influence of Preparation Technology of Propellant on Ignition in Closed Ballistic Bomb.

P.3 Doru Goga, Traian Rotariu, Viorel Tiganescu, Teodora Zecheru
Military Technical Academy, Bucharest, Romania
Ballistic Performance of Primers: A New Experimental Method for Evaluation.

P.4 Józef Paszula, Waldemar A. Trzciński
Military University of Technology, Warsaw, Poland
Detonation Performance of Aluminium Enriched Ammonium Nitrate Explosive.

P.5 David Lempert, Georgii Manelis
Institute of the Problems of Chemical Physics, RAS,Chernogolovka, Moscow Region.
Development of Smokeless Non-Toxic Gas Generating Compositions for Automobile Airbag Inflators.

P.6 Geliy N. Nechiporenko, David Lempert, Georgii B. Manelis
Institute of the Problems of Chemical Physics, RAS,Chernogolovka, Russia.
Some Phenomena of the Specific Impulse of CHNOF Propellants Dependence on the O/F Ratio.

P.7 Milan Klusáček, Vladislav Adamík, Jiří Majzlík, Pavel Vávra
Inst. of Energetic Materials, University of Pardubice, Pardubice
Shock Waves in Piezo Ceramics – Simulation and Experiment.

P.8 José Góis, José Campos, Flávio Chaves, Pedro Simões, Luísa Durães, Paulo Araújo
Mech. Eng. Dept., Fac. Sci. Technol., Univ. Coimbra, Coimbra 3030–788, Portugal
Study of Thermal Decomposition, Flash Pyrolisis and Explosion Ability of Nitrophenols in Aqueous Solution.

P.9 Tatyana Petukhova, Victor Ivshin, Vyacheslav Korolev, Tatyana Pivina
Zelinskii Inst. of Organic Chemistry, RAS, Moscow, Russia
Simulation of Decahydro-1,4,5,8-tetranitropyrazino-[2,3-b]-pyrazine Decomposition Mechanism.

P.10 Muhamed Sućeska , Zhi-Yue Liu, Sanja Matečić Mušanić
Lab. for thermal analysis, Brodarski institut - Marine Research & Special Technologies, Zagreb, Croatia
Numerical Modelling of Effect of Heating Rate on Results of Dynamic Mechanical Analysis of a Rocket Propellant.

P.11 Jan Ottis, Miloslav Krupka and Jan Horkel
Institute of Energetic Materials, University of Pardubice, Czech Rep.
FTIR Analysis of Gaseous Products of Explosives Initiated by Electric Spark - Method Development.

P.12 Maciej Miszczak, Eugeniusz Milewski, Ryszard Kostrow, Wojciech Goryca, Henryk Terenowski
Military Institute of Armament Technology, Zielonka, Poland
An Analysis of Test Methods on Physicochemical Stability of Primary Explosives

P.13 Vlada M. Raikova, Olga A. Ivanova and Galina A. Shraiber
Mendeleev University of Chemical Technology, Moscow, Russia
Runway Exothermal Reactions and Thermal Explosion in Production of Organic Nitrocompounds.

P.14 Ekaterina I. Aleshkina, Alexander V. Dubovik, Georgii D. Kozak
Mendeleev University of Chemical Technology, Moscow, Russia
Theoretical Estimation of Explosion Hazard of NTO, FOX-7, TNAZ and CL-20.

P.15 Olga B. Litovka, Dr. Alexander V. Starshinov, Georgii D. Kozak
Mendeleev University of Chemical Technology, Moscow, Russia
Design-Experiment Investigation of ANFO Mixtures on a Base of Different Brand Marks of Porous Grill Ammonium Nitrate.

P.16 Alexei V. Apolenis, Laritsa S. Goncharova,Vladimir E. Annikov
Mendeleev University of Chemical Technology, Moscow, Russia
Detonability of Water Gel-Like Systems on a Base Conversion High Explosives, Extracted from Ammunition.

P.17 Irina V. Egorova, Vlada M. Raikova, Anna A. Veprikova
Mendeleev University of Chemical Technology, Moscow, Russia
Calculation of Energy Parameters of Burning and Detonation Process in Fuel-Air Systems.

P.18 Yurii Burov, Boris Fedorov, Vladimir Charskii
Institute of the Problems of Chemical Physics, RAS, Chernogolovka, Russia
High pressure affection on rates of monomolecular thermal decomposition of o-nitroarylazides in solutions.

P.19 Stanislaw Cudzilo, Mateusz Szala
Military Univ. of Technology, Warsaw, Poland
Application of Iron and Copper Compounds as Catalysts in Combustion Synthesis.

P.20 Wei-fei YU, Gui-yu ZENG, Hui HUANG, Fu-de NIE
Inst. of Chemical Materials, CAEP, Mianyang. Sichuan, China
Convenient Method to Observe the Interior Structure of Explosive Particles.

P.21 Wojciech Kiciński, Stanislaw Cudzilo
Inst. of Chemistry, Military Univ. of Technology, Warsaw, Poland
Preparation and Characterization of Nanocomposites of Organic Gels with Inorganic Oxidizers.

P.22 PENG Ru-fang, JIN Bo, SHU Yuan-jie, CHU Shi-jin
Southwest University of Science and Technology, Mianyang 621010, China;
Microwave-Assisted Synthesis of Stereoisomeric N-Nitrophenyl-pyrrolidino[60]fullerenes.

P.23 Tatiana Šimorová
Faculty of Material Sci. & Technol., Slovak Univ. of Techno., Bratislava, Slovakia
The Chosen Methods of Determination of Ignition Temperature of the Wood Dusts

P.24 Paolo Zanirato
Dip. di Chimica Organica "A. Mangini", Facoltà di Chimica Industriale, Università degli Studi di Bologna, Bologna, Italy
Thermochemical Evaluation of the Molecular Intrinsic Reactivity of the Tosyl Azide and *bis*(4-Azidophenyl)-ether and –sulfide.

P.25 Yuriy N. Matyushin, Tatiyana S. Konkova, Aleksei B. Vorobev, Yuriy A. Lebedev
Semenov Institute of Chemical Physics, RAS, Moscow, Russia
Enthalpy of Formation of Dinitramide Anion.

P.26 Vladimir K. Golubev
Russian Federal Nuclear Center – VNIIEF, Sarov, Russia
Influence of Quantity and Position of Nitrogroups in Benzene Nitroderivatives Molecules on Dissociation Energy of C-NO_2 Bonds.

P.27 Vladimir K. Golubev
Russian Federal Nuclear Center – VNIIEF, Sarov, Russia
Influence of Conditions of Shock Wave Testing on Spall Fracture of Samples of Four HE Explosives.

P.28 Valerii P. Siditskii, Manh Cuong Vu, Vera P. Shelaputina, Viacheslav Y. Egorshev, Alexey B. Sheremetev, N. S. Alexandrova
Mendeleev University of Chemical Technology, Moscow, Russia
Study of Thermal Decomposition and Combustion of Insensitive Explosive 3,3'-Diamino-4,4'-azofurazan (DAAzF).

P.29 Timur Shamsutdinov, Denis Chachkov, Alexander Shamav, Grigorii Khrapkovskii
Center of New Informational technologies, Kazan State Technological University, Kazan, Russia
A Theoretical Study of the Reaction Gas-Phase Monomolecular Elimination of HNO_2 from the Nitroalkanes.

P.30 G. Unkelbach, Dr. Dirk Roeseling, Th. Keicher, Horst Krause
Fraunhofer-Instutut für Chemische Technologie (ICT), Pfinztal, Germany
Synthesis, Characterization and first Formulations of New Triazidoplasticizers

P.31 Lemi Türker, Selçuk Gümüs, Taner Atalar, Sencer Atlanel
Middle East Technical Univ., Dept. of Chem., Ankara, Turkey
A Theoretical Study on Nitrourea and its Tautomers.

P.32 Alexander A. Gidaspov
Samara State Technical University, Samara, Russia
Reaction of Dialkoxy-mono-trinitromethylation of 2,4,6-trichloro-1,3,5-triazine.

P.33 Alexander A. Gidaspov
Samara State Technical University, Samara, Russia
Reactions of Amino- and Oxy-*bis*-Trinitromethylation of 2,4,6-Trichloro-1,3,5-triazine.

P.34 Vladimir V. Bakharev and Alexander A. Gidaspov
Samara State Technical University, Samara, Russia
Interaction of 2-R-4,6-*bis*(Trinitromethyl)-1,3,5-triazines with Sodium Nitrite.

P.35 Thomas M. Klapötke, Jörg Stierstorfer
Ludwig-Maximilian University of Munich, Munich, Germany
Investigation of Nitrated Aminotetrazoles as Promising Energetic Materials – Synthesis, Structure and Properties.

P.36 Veronika Ernst, Thomas M. Klapötke, Jörg Stierstorfer
Ludwig-Maximilian University of Munich, Munich, Germany
Nitriminotetrazolates as Energetic Ingredients in innovative Pyrotechnical Compositions – a Comprehensive Characterization.

P.37 Chaza Darwich, Thomas M. Klapötke, Jan M. Welch
Ludwig-Maximilian University of Munich, Munich, Germany
Synthesis and Characterization of 3,4,5-Triamino-1,2,4-triazolium 5'-Nitrotetrazolate.

P.38 Thomas M. Klapötke, Norbert T. Mayr
Ludwig-Maximilian University of Munich, Munich, Germany
Green Explosives of Urea Derivatives: Comparison of Explosive Performance and Sensitivity of *N, N'-bis*(*tris*-(Nitratomethyl)-methyl)-oxamide and of *N, N'-bis*(*tris*-(Nitratomethyl)-methyl)-urea.

P.39 Margaret-J. Crawford, Thomas M. Klapötke, Hendrik Radies
Ludwig-Maximilian University of Munich, Munich, Germany
Energetic Tetrazolate Salts Containing Prefluorinated Groups.

P.40 Stefan Sproll, Thomas M. Klapötke
Ludwig-Maximilian University of Munich, Munich, Germany
A Nitrogen Rich, Tetrazole Containing Polymeric Precursor.

P.41 Thomas M. Klapötke, Burkhard Krumm, Frany X. Steemann
Ludwig-Maximilian University of Munich, Munich, Germany
Novel Energetic Compounds Combining Nitramines and Tetrazoles.

P.42 Roland Friedeman, Michael Göbel, Thomas Klapötke, Susanne Scheutzow
Ludwig-Maximilian University of Munich, Munich, Germany
Synthesis and Characterization of the Oxygen-rich Energetic Material Melaminium Dinitrate (MDN).

P.43 Georgiy Malkov, Alexey Shastin, Yakov Estrin, Elimira Badamshina, Yuriy Mikhailov
Inst. of Problems of Chemical Physics, RAS, Chernogolovka, Russia
Novel Hyperbranched Poly([1,2,3]-triazole-[1,3,5]-triazines).

P.44 Vitold Zbarskii, Nikolay Yudin
Mendeleev University of Chemical Technology, Moscow, Russia
The Kinetic of Nitration of 1,2,4-Triazol-3-on and 4-Phenyl-1,2,4-triazol-3-on in the Sulfuric Acid Medium.

P.45 Vitold Zbarskii, Nikolay Yudin
Mendeleev University of Chemical Technology, Moscow, Russia
Synthesis of the Nitro-derivatives of Biuret and their Salts.

P.46 Andrzej Orzechowski, Dorota Powała, Andrzej Maranda, Bogdan Florczak
Institute of Industrial Organic Chemistry, PL-03-236 Warsaw, Poland
1,1-diamino-2,2-dinitroethylene as a Component of Plastic bonded explosives

P.47 Alexander M. Astachov, Vitaliy A. Revenko, Ludmila A. Kruglyakova, Eduard S. Buka
Siberian State Technological University, Krasnoyarsk, Russia
Some Properties of *bis*(5-Nitrimino-1,4H-1,2,4-tetrazol-3-yl).

P.48 Alexander M. Astachov, Alexander D. Vasiliev, Vladimir E. Zadov, Natalia V. Kuratieva, Rudolf S. Stepanov
Siberian State Technological University, Krasnoyarsk, Russia
The Crystal and Molecular Structure of 4,6,8-Trinitro-2,4,6,8-tetraazabicyclo-[3.3.0]octanone-3.

P.49 Sylwia Pietrzyk, Jan Bladek
Inst. of Chemistry, Military Univ. of Technology, Warsaw, Poland
Analysis of Novel High Energetic Explosives: HNIW, TEX, TNAZ, DADNE.

P.50 Zbigniew Chylek
Military Univ. of Technology, Warsaw, Poland
Influence of Water Concentration on Nitration of 2-Methyl-pyrimidine-4,6-dione.

P.51 Ottis Jan, Beňová Blanka
University of Pardubice, Pardubice, Czech Rep.
Determination of FOX-7 purity by UV spectroscopy.

P.52 Joanna Krzysztopa, Andrzej Antczak, Paweł Maksimowski, Wincenty Skupiński
Faculty of Chemistry, Warsaw University of Technology, PL-00 664 Warszawa, Poland
Thin-Layer Chromatography to Determine the Slowest Steps in Hexabenzylisowurtzitane Syntheses Conducted in Various Conditions.

P.53 Stefan Ek, Erik Holmgren, Denis Menning, Patrick Goede
Swedish Defence Res. Agency (FOI), Tumba, Sweden
Characterisation of Triacetontriperoxide (TATP).

P.54 Martina Mudruňková, Jan Skládal, Martin Kouba
Res. Institute for Industrial Chemistry, Explosia, Ltd., Pardubice, Czech Rep.
Monitoring of Water Solubility of VN2 TNT Cartridge for the Purpose of Assessment of Potential Underground and Drinking Waters Contamination.

P.55 Valé Miliukiené, Ašura Nemeikaité-Čénienė, Jonas Šarlauskas, Žilvinas Anusevičius, Henrikas Nivinskas, Narimantas Čénas
Institute of Biochemistry, Vilnius, Lithuania
Immunotoxicity of Nitroaromatic Explosives *in vitro:* Quantitative Structure-Activity Relationships.

P.56 Žilvinas Anusevičius, Marta Martinez-Julvez, Milagros Medina, Carlos Gomez-Moreno, Jonas Šarlauskas and Narimantas Čénas
Institute of Biochemistry, Vilnius, Lithuania
Reduction of TNT by Ferredoxin: $NADP^+$ Reductase and Flavodoxin – a Stopped-Flow Study.

P.57 Monika Škorpíková, M.Sc. , Karel Ventura, Ladislav Lehký
Research Inst. of Industrial Chemistry, Explosia, Ltd., Pardubice
The design of Elemental Configuration of the Spectrophotometric Detector for Explosives.

P.58 Anatoliy Grigorenko, Evgeny Shkolnikov, E.V.Sidorova, Shaitura N.S., A.A.Sidorov
Science and engineering center for energy-efficient processes and equipment RAS, Moscow
New Device for Analysis Porous Structure of Energetic Materials.

P.59 Mikhail Laritchev, Olga Laricheva, Ilia Leipunsky, Pavel Pshechenkov, Evgeny Shkolnikov
Institute for Energy Problems of Chemical Physics RAS, 119334, Moscow, Russia,
Reaction of Aluminum Powders with Liquid Water as a Source of Hydrogen for Hydrogen Power Engineering.

P.60 Mikhail Larichev, Olga Laricheva, Nataliya Shyatura, Ilia Leipunski, Pavel Pshechenkov, Evgenyi Shkolnikov
Institute for Energy Problems of Chemical Physics RAS, 119334, Moscow, Russia
Study of Oxidation Mechanism of Aluminium Particles in Liquid Water.

P.61 Zvonimir Ester, Mario Dobrilović, Vječeslav Bohanek, Dalibor Kuhinek
Faculty of Mining, Geology and Petroleum Engineering, University of Zagreb, Croatia
New method of initiation of the detonator fuse head, energy disposability

P.62 Lukáš Vejs, Břetislav Janovský
Institute of Energetic Materials, University of Pardubice, Czech Republic
Measuring of Flame Temperatures Generated by Gas-Air Mixture Explosions.

P.63 Zenon Wilk, Justyna Stas, Piotr Koslik, Adam Zakrewski
Institute of Industrial Organic Chemistry, Krupski Mlyn, Poland
Research of High Explosives Based on RDX, MHX and CL-20 in Small Scale Underwater Test Examination.

16:00-17:00 The second meeting of Scientific Committee (University Hall)

18:00 - 22:00 EVENING PROGRAM (*at Pardubice's Castle)*

18:00-18:40 Visit of the exposition "Bohemian glass";
Visit of the exposition "Historical weapons";

18:50-22:00 A friendly get-together in the Knight Hall;
Exhibition of the Historical fencing group (after dark);

PAPERS PUBLISHED ONLY IN PROCEEDINGS

PPP.1 Jacqueline Akhavan, Gim Kuay Tan, Anthony J Bellamy
Department of Environmental and Ordnance Systems, Cranfield University, UK
Recovery of Energetic Materials using Super Critical CO_2.

PPP.2 Zdeněk Friedl, Svatopluk Zeman
Faculty of Chemistry, Brno University of Technology, Brno, Czech Republic
Isodesmic interaction energies as a measure of N-NO2 bond strength in nitramines.

PPP.3 František Ludvík
University of Defence, Brno, Czech Republic
Application of Energetic Materials in Civilian Spere.

PPP.4 Anatolii N. Dremin
Institute of the Problems of Chemical Physics, RAS, Chernogolovka, Russia
On the Mechanism of Molecular Condensed EMs Transformation under the Effect of Shock and Detonation Waves.

PPP.5 Alexander Shamov, Ekaterina Nikolaeva, Grigorii Khrapkovskii
Centre of New information technological, Kazan State Technological University, Kazan, Russia
The Primary Act of the Mechanism of Gas-phase Monomolecular Decomposition of α-nitroolefines.

PPP.6 Guzel Garifzianova, Ekaterina Nikolaeva, Roman Tsyshevskiy, Alexander Shamov, Grigorii Khrapkovskii
Center of New Informational technologies, Kazan State Technological University, Kazan, Russia
Study of the Mechanism of Gas-phase Decomposition of Nitroalkane Radical Cations and Alkane Radical Cations.

PPP.7 Fu-de Nie, Guang-cheng Yang, Gui-yu Zheng, Zhi-jiang xiao,Huang Hui
Institute of Chemical Materials, China Academy of Engineering Physics, Mianyang, China
Preparation and Properties of Ultrafine TATB Particles.

PPP.8 Yuanjie Shu
Inst. of Chemical Materials, China Academy of Engineering Physics, Mianyang. Sichuan, China
Theoretical Study on the Effect of Substitutional Groups on Properties of Tetrazines.

ACCOMMODATION: on the basis of experience from previous Seminars, the participants will have to make reservation themselves. The accommodation is possible in hotels in the center of Pardubice:

Hotel LABE:

phone: 00420 466 535 359
fax: 00420 466 535 358
E-mail: rezervace@hotellabe.cz
approximate prices/night:
1400.- CZK ($65) single room
1900.- CZK ($88)one person) apartments
approx. 10 min. walk from the University Hall

Hotel HARMONY:

phone/fax: 00420 466 435 020
00420 466 435 025
E-mail: hotel@harmony-pce.cz
recepce@ harmony-pce.cz
approximate prices/night:
840.- CZK ($39) single room
990.- CZK ($46) double room
1160.-CZK ($55) apartments for two person
approx. 3 min. walk from the University Hall

Hotel ZLATA STIKA:

phone: 00420 46 6613478
fax: 00420 46 6052130
E-mail: zlata@stika.cz
approximate prices/night:
2500-3500 CZK ($116-$162) apartments
1800-2000 CZK ($84-$93) single room
2000-2200 CZK ($93-$102) double room
approx. 25 min. walk from the University Hall

Hotel U ZLATEHO ANDELA:

phone: 00420 466 535 6 56
fax: 00420 466 511 5 75
E-mail: hotelzlandel@seznam.cz
approximate prices/night:
1000.- CZK ($47) single room
1700.- CZK ($79) apartments
approx. 25 min. walk from the University Hall

Hotel SPORT:

phone: 00420 46 651 22 21
fax: 00420 46 651 20 62
approximate prices/night:
830.- CZK ($39) single room
970.- CZK ($45) double room
approx. 10 min. walk from the University Hall

Pension BIRDIE

phone: 00420 466 053 255
fax: 00420 466 053 256
E-mail: info@birdie.cz
approximate prices/night:
1000.-CZK ($47) single room
1100.-CZK ($51) apartments for one person
approx. 30 min. walk from the University Hall

Pension 2727:

phone: 00420 466 615 400
fax: 00420 466 612 451
E-mail: penzion2727@seznam.cz
approximate prices/night:
1050.- CZK ($49) single room
1260.- CZK ($59) double room
1260.-CZK ($59) apartments for one person
approx. 20 min. walk from the University Hall

Hotel EURO:

phone: 00420 466 414 255
fax: 00420 466 414 259
E-mail: info@hoteleuro.cz
approximate prices/night:
2100.- CZK ($97) single room
2500.- CZK ($116) double room
approx. 30 min. walk from the University Hall

Hotel ALLMEDIAR:

phone: 00420 466 536 063
fax: 00420 466 536 070
E-mail: info@allmediar.cz
approximate prices/night:
1160.- CZK ($54) single room
1260.- CZK ($59) double room
1995.-CZK ($82) apartments for one person
approx. 25 min. walk from the University Hall

Pension ZELENA ZABA (*Green Frog*):

phone: 00420 466 616 016
fax: 00420 466 616 016
E-mail: info@zelenazaba.cz
approximate prices/night:
890.- CZK ($41) single room
1390.- CZK ($65) double room
1390.-CZK ($65) apartments for one person
approx. 25 min. walk from the University Hall

Notes: price of one meal in the town is about 200.-CZK (i. e. ~$9.50)