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

PROGRAM

(REDUCED VERSION)

of the thirteenth Seminar

NEW TRENDS IN RESEARCH OF ENERGETIC MATERIALS

NTREM 2010

held at the University of Pardubice

and devoted to **ninety years**

of education in the field of Science & Technology of Explosives
in the former Czechoslovakia

Pardubice, the Czech Republic

April 21st- 23rd, 2010

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

13TH INTERNATIONAL SEMINAR
"NEW TRENDS IN RESEARCH OF ENERGETIC MATERIALS"
http:// **www.ntrem.com**

is supported by:

Office of Naval Research Global, Middlesex, UK (conference grant)
US Army International Technology Center - Atlantic, London, UK (conference grant)
European Office of Aerospace Research and Development of the USAF (conference grant)
Austin Detonator, Vsetin, CR
Indet Safety Systems, Vsetin, CR, a member of Nippon Kayaku group
Faculty of Chemical Technology, University of Pardubice
Explosia, Pardubice, CR
STV Group, Prague, CR
OZM Research, Bliznovice, CR

The thirteenth consecutive seminar on new trends in research of energetic materials (NTREM) is intended to be a world meeting of *young* people and university teachers working in the fields of teaching, research, development, processing, analyzing and application of all kinds of energetic materials. This seminar also covers explosions in gaseous, dispersed and condensed systems. . It is not aimed only at the exchange of professional information but also at creating a pleasant meeting where young specialists from different countries have the opportunity to meet and gain personal contacts.

Papers should not only describe research work itself, but should also demonstrate awareness of the context and background for the research. The papers presented at this meeting will be quoted in the **Chemical Abstracts**.

The seminar is organized by staff members of the Institute of Energetic Materials University of Pardubice and in accordance with the tradition of previous meetings will take place at 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.

Passports and visas: the visitors from most countries outside EU need valid passport and visa when entering Czech Republic. Please contact the Czech Embassy or consulate in your country for more information (Czech Republic is a part of Schengen territory from Jan. 1st, 2008).

Registration: via web form should be done before the end of April 15th, 2010. The registration of participants at the University Hall will take place:

Tuesday, April 20st 15:00 – 19:00
Wednesday, April 21st 7:30 – 10:00

Proceedings of the presented contributions will be prepared by the organizers of the seminar by the date of its opening; price of the proceedings will be 3500.- CZK (i. e. ~ $190) printed version and 500.- CZK (i. e. ~$27) CD version – the prices are valid at the time of the seminar. The Proceedings will be provided to the main authors free of charge.

Please monitor the Web site http://www.ntrem.com **for updates**

Chairman of the Seminar:

Prof. Svatopluk Zeman (*IEM, FCT, University of Pardubice*)

Scientific Committee:

Chairman of the Committee:

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

Members of the Committee:

Prof. Ang How-Ghee	*Nanyang Technological University, Singapore*
Prof. Alexandr Astachov	*Siberian State Technological University, Russia*
Prof. José Campos	*Univ. of Coimbra, Portugal*
Prof. Stanislaw Cudzilo	*Military Univ. Technol., Warsaw, Poland*
Dr. Ruth Doherty	*Dept. of Homeland Security, Washington, USA*
Prof. Zdeněk Friedl	*Chem. Faculty, Brno Univ. of Technology, CR*
Prof. Manfred Held	*EADS/TDW, Schrobenhausen, Germany*
Prof. Xue-Hai Ju	*Nanjing Univ. of Sci. & Technol,. Nanjing, China*
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. Hans Pasman	*Texas A&M University, College Station, TX, USA*
Prof. Tatiana S. Pivina	*Zelinskii Inst. of Organic Chemistry, Moscow*
Prof. Peter Politzer	*Univ. of New Orleans, USA*
Prof. Yuanjie Shu	*Inst. Chem. Materials, CAEP, Mian Yang, China*
Dr. Muhamed Sućeska	*Brodarski Inst., Zagreb, Croatia*
Prof. Waldemar A. Trzciński	*Military Univ. Technol., Warsaw, Poland*
Assoc. Prof. Pavel Vávra	*IEM, FCT, Univ. of Pardubice, Czech Rep.*
Dr. Woodward Waesche	*SAIC, Gainesville, USA*

Organizing Committee

Chairman of the Committee (phone +420 46 603 8099):

Dr. Jiří Pachmáň *IEM, FCT, Univ. of Pardubice, Czech Rep.*

Members of the Committee:

Dr. Jakub Šelešovský	*IEM, FCT, Univ. of Pardubice, Czech Rep.*
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Dr. Marcela Jungová	*IEM, FCT, Univ. of Pardubice, Czech Rep.*
Dr. Iva Ulbrichová	*Dean Office, FCT, University of Pardubice*

Organizing committee of NTREM
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Affiliated activities:

The first meeting of the *SCIENTIFIC COMMITTEE* will be carried out on Tuesday, **April 20th, 2010**, at 18:00 in the **Pension & Restaurant BIRDIE** (see map). The second meeting of scientific committee will take place on Thursday, **April 22nd, 2010** – see page 6.

A friendly get-together for seminar participants will be arranged at **Pardubice's Castle** already on Wednesday, April 21st, 2010 – see page 13.

LECTURE PROGRAM OF THE 13TH NTREM – Wednesday April 21st

08:40 **Opening of Speech** Prof. Miroslav Ludwig
Rector of the University of Pardubice

1. Session

Chairman: Prof. Tatiana Pivina
Zelinskii Inst. of Organic Chemistry, Moscow

09:00 David Lempert, *Gelii Nechiporenko, George Manelis* (*invited lecture)*
Russian Academy of Science, Chernogolovka, Russia
The main tasks in solid composite propellants performances improving.

09:30 Michal Pexa, Zdeněk Friedl
Brno University of Technology, Brno, Czech Republic
Reactivity of C-NO_2 bonds in nitroaromatic compounds: Bond dissociation and disproportionation approach.

09:50 Waldemar Trzciński, Sebastian Grys
Military University of Technology, Warsaw, Poland
Calculation of combustion, explosion and detonation characteristics of energetic materials.

10:10 Ahmed Elbeih, Jiří Pachmáň, Svatopluk Zeman, Wlademar A. Trzciński, Zbyněk Akštein
University of Pardubice, 532 10 Pardubice, Czech Republic
Detonation characteristics of bicyclo-HMX and HNIW with two different binders.

10:30 – 10:50 Coffee break

10:50 Daniel Buczkowski, Bogdan Zygmunt
Institute of Industrial Organic Chemistry, Warsaw, Poland
Detonation properties of mixtures of ammonium nitrate based fertilizers and aluminum.

11:10 Leela Chelikani, Suman Bagchi, Surya P Tewari, Prem Kiran Paturi
Central University Campus P.O., Gachibowli,, Hyderabad, India
Hugoniot of air under kPa and MPa explosive pressures.

11:30 Venugopal Rao Soma, Sreedhar Sunku, Prem Kiran Paturi, Tewari Surya Prakash, Manoj Kumar Gundawar
University of Hyderabad, Hyderabad, India
Laser Induced Breakdown Spectroscopy of high energy materials with nanosecond, picosecond, and femtosecond pulses.

11:50 Zvonko Trontelj, J. Pirnat, J. Lužnik, V. Jazbinšek, V. Žagar, J. Seliger, T. M. Klapoetke
Institute for Mathematics, Physics and Mechamics, Ljubljana, Slovenia
Study of physical and chemical properties in some energetic materials from the tetrazole family by the nitrogen NQR .

12:10 - 14:00 LUNCH BREAK

2. Session

Chairman: Prof. Stanislav Cudzilo
Military University of Technology, Warsaw

14:00 Dr. William G. Proud, David M. Williamson, (*invited lecture through Skype*)
John E. Field, Steve M. Walley
Imperial College, London, United Kingdom
Diagnostic techniques in deflagration and detonation studies.

14:30 Michael Hutchinson (*lecture through Skype)*
Hydrodynamics Department, AWE Aldermaston, Reading, United Kingdom
With-fracture gurney model to estimate both fragment and blast impulses.

14:50 Tatiana Pivina (*invited lecture)*
Zelinskii Inst. of Organic Chemistry, Moscow
In Silico search for structures of novel energetic compounds with a promising set of physicochemical characteristics.

15:20 – 15:40 Coffee break

15:40 Niko Fischer, Jörg Stierstorfer, Thomas M. Klapötke
Ludwig-Maximilian University of Munich, Munich, Germany
Energetic materials based on 1-amino-3-nitroguanidine.

16:00 Stefan Ek, Nikolaj Latypov, Malin Knutsson, Patrick Goede
The Swedish Defence Research Agency, Tumba, Sweden
New syntheses of 4-amino-3,5-dinitropyrazole.

16:20 Dabir Viswanath, Mike Reinig, Tushar K. Ghosh, Veera M. Boddu,
University of Missouri, Columbia, Missouri, USA;
Vapor pressure of energetic compounds.

EVENING PROGRAM - *at Pardubice's Castle* 18:30 – 22:00 – see page 13

3. Session **POSTER PROGRAM Thursday** - April 22nd (**09:00 - 12:00**) – see on page 7

1**2:00 - 14:00 LUNCH BREAK** - The second meeting of Scientific Committee (working lunch)

LECTURE PROGRAM OF THE 13th NTREM – Thursday 22nd

4. Session

Chairman: Prof. Svatopluk Zeman
University of Pardubice

14:00 Tatiana Pivina (*invited lecture)*
Zelinskii Inst. of Organic Chemistry, Moscow
Ab initio methodology of thermal decomposition mechanisms simulation for C-, N-, O-nitrocompounds.

14:30 Tereza Hudcova, Nathalie Rocha, Daisy Cantu, Martin Halecky, Kim Jones, Jan Paca
Institute of Chemical Technology, Prague, Czech Republic
Degradation of dinitrotoluenes by bacterial suspension cultures.

14:50 Valery Trushlyakov, Vladimir Kudentsov, David Lempert
Omsk State Technology University, Omsk, Russia
New combinations of energetic compounds for creation propellants for additional airborne systems.

15:10 – 15:30 Coffee break

15:30 Alexander Lukin
Western-Caucasus Research Center, Tuapse, Russia
Combustion instability of the energetic materials: From microstructures of physical fields to macroscale properties.

15:50 Vladimir Golubev, *Russian Federal Nuclear Center, Sarov, Russia*
Effect of electronic excitation and ionization on decomposition mechanisms of triaminotrinitrobenzene molecules.

16:10 Galina Stankevich, Konstantin Kobrakov, Olga Kovalchukova, Alexandr Alafinov, Alexey Shahnes, Michail Dutov, Sergey Shevelev, Paul Strashnov
Peoples' Friendship University of Russia, Moscow, Russia
Trinitrotoluene as a precursor in synthesis of effective azodyes and azopygments.

16:30 - 16:50 CLOSING REMARKS including AWARDING OF PRIZES

POSTER PROGRAM OF THE 13TH NTREM **– Thursday April 22nd**

3. Session

Chairman: Prof. Waldemar A. Trzcinski
Military University of Technoogy, Warsaw

Posters should be hung on Wednesday, ***April 21st***, before 10:30. Special poster sessions will take place on Thursday (***April 22nd***) from 09:00 up to 12:00 h. During this time authors should be present for discussion at the posters.

P.1 Lemi Türker, Hamza Turhan, Hasan İnce
Middle East Tecnical University, Ankara, Turkey
DFT studies on novel energetic materials: (e)-2,4,6-trinitro-n-(2,4,6-trinitro-benzylidene)benzenamine and its isomers.

P.2 Eunmee Goh
Agency for Defence Development, Daejon, Korea
The scale up process improvement of 1,1-Diamino-2,2-dinitroethane (DADNE).

P.3 Alexander Gidaspov, Vladimir Bakharev, Ivan Kukushkin, Vladimir Zalomlenkov, Pavel Burkov
Samara State Technical University, Samara, Russia
Synthesis of 2-alkoxy-4,6-bis(trinitromethyl)-1,3,5-triazines.

P.4 Vladimir Bakharev, Alexander Gidaspov, Irina Ul'yankina
Samara State Technical University, Samara, Russia
Trinitromethyl bis-triazinyl ethers.

P.5 Thomas Altenburg, Thomas Klapötke, Alexander Penger, Susanne Scheutzow
Ludwig-Maximilian University of Munich, Munich, Germany
Metal salts of N,N'-dinitroguanidine as colorant and IR illuminant systems.

P.6 Thomas Altenburg, Thomas Klapötke, Alexander Penger, Jörg Stierstorfer,
Ludwig-Maximilian University of Munich, Munich, Germany
Nitrogen-rich salts of N,N'-dinitroguanidine - powerful high explosives.

P.7 Joerg Stierstorfer, Der Finch, Thomas Klapötke
Ludwig-Maximilian University of Munich, Munich, Germany
Salts of 2-methyl-5-nitroaminotetrazole – low sensitivity secondary explosives.

P.8 Niko Fischer, Joerg Stierstorfer, Karina Tarantik, Thomas Klapötke
Ludwig-Maximilian University of Munich, Munich, Germany
1-Nitratoethyl-5-nitriminotetrazole derivatives – shaping future high explosives.

P.9 Thomas M. Klapötke, Burkhard Krumm, Richard Moll
Ludwig-Maximilian University of Munich, Munich, Germany
Nitro compounds based on boron esters.

P.10 Camilla Evangelisti, Thomas M. Klapötke, Anian Nieder,
Ludwig-Maximilian University of Munich, Munich, Germany
(Nitratomethyl)trimethylsilane and 2,2-Dimethyl-1-nitratopropane.

P.11 Carles Miró Sabaté, Thomas M. Klapötke,
Ludwig-Maximilian University of Munich, Munich, Germany
Ethylendiamine complexes of the silver and copper salts of 5-nitrotetrazole.

P.12 Carles Miró Sabaté, Thomas M. Klapötke,
Ludwig-Maximilian University of Munich, Munich, Germany
Energetic picrate salts with nitrogen heterocyles.

P.13 Haobin Zhang, Yuanjie Shu, et al.
China Academy of Engineering Physics, Mianyang, China
TATB crystal morphology controlling by recrystallization.

P.14 Stanisław Cudziło, Marcin Nita
Military University of Technology, Warsaw, Poland
New primary explosive – chlorate(VII) m-4-amino-1,2,4-triazol-m-dichlorocopper(II).

P.15 Alexander M. Astachov, Vitaliy A. Revenko, Alexander D. Vasiliev, Eduard S. Buka
Siberian State Technological University, Krasnoyarsk, Russia
Some properties of 3,5-dinitrimino-1,2,4-triazole.

P.16 Sebastian F. Rest, Thomas M. Klapötke
Ludwig-Maximilian University of Munich, Munich, Germany
Investigation of tetrakis(2,2,2-trinitroethyl) orthocarbonate (TNEOC) as high energetic dense oxidizer (HEDO).

P.17 Alexander Kulikov, Alexey Finogenov, Margarita Epishina, Igor Ovchinikov, Nina Makhova
N.D. Zelinsky Institute of Organic Chemistry RAS, Moscow, Russia
Synthesis and nitration of 1,3(1,4)-bis(nitrofuroxanyl)benzenes.

P.18 Carles Miro Sabate, Henri Delalu, Konstantin Karaghiosoff, Thomas M. Klapötke
Ludwig-Maximilian University of Munich, Munich, Germany
Explosive silver nitrate and perchlorate salts with tetrazole-based ligands.

P.19 Franziska Betzler, Stefan Sproll, Thomas M. Klapötke
Ludwig-Maximilian University of Munich, Munich, Germany
New energetic nitrogen rich polymers.

P.20 Valérian Forquet, Chaza Darwich, Carles Miró Sabaté, Henri Delalu
Université Claude Bernard Lyon 1, Lyon, France
Study of energetic materials based on the 2,2-dimethyltriazanium cation.

P.21 Miroslav Pospíšil, Pavel Vávra
Charles University, Prague, Czech Republic
A Molecular mechanic study of some factors causing high density of nitro compounds.

P.22 Vitaliy Pepekin, Yuriy Matyushin, Aleksei Inozemtsev
Semenov Institute of Chemical Physics, Russian Academy of Sciences, Moscow, Russia;
Explosive properties of the furazan derivatives.

P.23 Hannah Davies, Tracy A. Vine, David M. Williamson
The University of Cambridge, Cambridge, United Kingdom
Velocity measurements of exploding foil initiators (EFIs) using high speed photography.

P.24 Katarzyna Barcz, Waldemar Trzcinski
Military University of Technology, Warsaw, Poland
Investigation of thermobaric layered charges.

P.25 Sanja Matečić Mušanić, Ivona Fiamengo Houra, Muhamed Sućeska
Brodarski Institute, Zagreb, Croatia
Applicability of non-isothermal DSC and Ozawa method for studying kinetics of double base propellant decomposition.

P.26 Davin G. Piercey, Thomas M. Klapötke, Norbert T. Mayr, Susanne Scheutzow, Jörg Stierstorfer
Ludwig-Maximilian University of Munich, Munich, Germany
Silver nitriminotetrazolate: A promising primary explosive.

P.27 Jonas Šarlauskas
Institute of Biochemistry, Vilnius, Lithuania
Polynitroderivatives of alkoxy- and alkylendioxy- benzenes: potential HEMs and precursors of new energetic materials.

P.28 Jonas Šarlauskas
Institute of Biochemistry, Vilnius, Lithuania
Synthesis of energetic materials, containing benzimidazole core.

P.29 Jonas Šarlauskas, Kastis Krikštopaitis, Valė Miliukienė, Žilvinas Anusevičius, Algirdas Šaikūnas, Narimantas Čėnas
Institute of Biochemistry, Vilnius, Lithuania
Organic nitrates and nitramines: synthesis, electrochemistry and cytotoxicity studies.

P.30 Lucjan Staszewski, Andrzej Orzechowski, Dorota Powała, Bogdan Florczak, Andrzej Maranda
Institute of Industrial Organic Chemistry, Warsaw, Poland
Crystallization and mechanical stirring of TEX, and HNIW.

P.31 Jae-Kyeong Kim, Jun-Woo Kim, Hyoun-Soo Kim, Kee-Kahb Koo
Sogang University, Seoul, Korea
Cooling crystallization of 1,1-diamino-2,2-dinitroethylene.

P.32 Jae-Kyeong Kim, Chang-Hwa Jo, Jun-Woo Kim, Hyoun-Soo Kim, Kee-Kahb Koo,
Sogang University, Seoul, Korea
Preparation of RDX nanoparticles by ultrasonic atomization.

P.33 Joanna Adamiak, Wincenty Skupiński
Warsaw University of Technology, Warsaw, Poland
Studies on dinitrotoluene synthesis using solid state catalyst - $H_3PO_4/MoO_3/SiO_2$.

P.34 Joanna Szczygielska, Sandra Chlebna, Paweł Maksimowski, Andrzej Orzechowski, Wincenty Skupiński,
Warsaw University of Technology, Warsaw, Poland
The obtaining the crystallites the CL-20 of reduced sensitivity.

P.35 Rudolf S. Stepanov, Ludmila A. Kruglyakova
Siberian State Technological University, Krasnoyarsk, Russia
1-Dinitromethyl-3-nitro-1,2,4-triazoles thermal decomposition under non-isothermal conditions.

P.36 Olga Kovalchukova, Yury Burov, Svetlana Strashnova, Victor Andreev
Russian Academy of Science, Chernogolovka, Russia
Mechanism of thermal decomposition of some nitro- and oxo-derivatives of pyridine.

P.37 Jakub Šelešovský, Roman Mareček
University of Pardubice, Pardubice, Czech Republic
Analysis of heat transfer in explosives.

P.38 Jakub Šelešovský, Jiří Pachmáň
University of Pardubice, Pardubice, Czech Republic
Probit analysis in evaluation of explosive's sensitivity.

P.39 Alessandro E. Contini, Anthony J. Bellamy, Ahad N. Leila
Cranfield University, DCMT, Shrivenham, United Kingdom
Development of a bomb calorimetric technique for sensitive explosives.

P.40 Jiří Majzlík
University of Pardubice, Pardubice, Czech Republic
Sensitivity of energetic materials to effects of electrostatic discharge - effect of distance between test electrodes.

P.41 Dorota Powała, Andrzej Orzechowski, Andrzej Maranda,
Institute of Industrial Organic Chemistry, Warsaw, Poland
The usable parameters of PBX containing FOX-7

P.42 Shi Yan
Nanjing University of Science & Technology, Nanjing, China
Influences of ignition on burning rates and delay precisions of B/$BaCrO_4$ delay composition.

P.43 Robert Zalewski, Tomasz Wolszakiewicz
Warsaw University of Technology, Warsaw, Poland
Viscoplastic behavior of solid propellants.

P.44 Radi Ganev, Svetlozar Ganev
University of Chemical Technology and Metallurgy, Sofia, Bulgaria
Ultrasonic investigation on relaxation processes in propellant aging.

P.45 Guy Jacob, Claire Franson, Amandine Viretto,
SNPE Matériaux Energétiques, Vert le Petit, France
Determination of the curing kinetics by NMR.

P.46 Zoran Bajić, Jovica Bogdanov, Gordana Antić, Vesna Džingalašević
Military Academy, Belgrade, Serbia
Calculation of detonation and shock wave parameters of HTPB-based PBXs.

P.47 Katarzyna Lipińska, Marek Lipiński, Joanna Jefimczyk
ZM Mesko SA, Skarżysko-Kamienna, Poland
Some properties of HTPB composite propellants.

P.48 Berko Zecevic, Jasmin Terzic, Alan Catovic, Sabina Serdarevic-Kadic
Mechanical Engineering Faculty, University of Sarajevo, Sarajevo, Bosnia and Herezgovina
Dispersion of PGU-14 ammunition during air strikes by combat aircrafts A-10 near urban areas.

P.49 Berko Zecevic, Alan Catovic, Jasmin Terzic, Sabina Serdarevic-Kadic
Mechanical Engineering Faculty, University of Sarajevo, Sarajevo, Bosnia and Herezgovina
Analysis of influencing factors of mortar projectile reproduction process on fragment mass distribution.

P.50 Vječislav Bohanek, Zvonimir Ester, Mario Dobrilović, Vinko Škrlec
Univesity of Zagreb, Faculty of Mining, Geology and Petroleum Engeneering, Zagreb, Croatia
Measurement of jet of linear shaped charge.

P.51 Wojciech Pawłowski, Waldemar Tomaszewski, Anna Zalewska
Warsaw University of Technology, Warsaw, Poland
Problems in detection of explosives by field asymmetric ion mobility spectrometry (FAIMS).

P.52 Petra Svachoučková, Václav Svachouček, Ladislav Velehradský
Defence Standardization, Codification and Government Quality Assurance Authority, Prague, Czech Republic
The study of gun shot residues from the cartridge in the dependence on the gun barrel length.

P.53 Ondřej Fryš, Aleš Eisner, Jan Skládal, Karel Ventura
University of Pardubice, Pardubice, Czech Republic
Qualitative and quantitative analysis of propellants containing new nontoxic stabilizers.

P.54 Dafinka Stoevska Gogovska, Rose Smilevski, Orce Popovski, Perica Paunovic, Hadzi Jordanov
Military Academy "General Mihailo Apostolski", Skopje, R. Macedonia
Novel nano-scaled electrocatalysts for hydrogen evolution with reduced loading precious materials.

P.55 Ilya Zhukov, Kozak George, Tsvigunov Alexander, Nataliya Moroz
Mendelejev University of Chemical Technology, Moscow, Russia
Transformation of aluminium at explosion of its mixtures with TATP and HMTD.

P.56 *Alexander Dubovik, Denis Kokovikhin*
Mendelejev University of Chemical Technology, Moscow, Russia
Sensitivity to impact of mixes AP with inorganic components.

P.57 Anna Veprikova, Vladimir Annikov, Vladimir Trunin, Ekaterina Balabaeva, Vlada Raikova
Mendelejev University of Chemical Technology, Moscow, Russia
Detonation parameters of water-impregnated explosives containing various aluminum powders.

P.58 Kuzmin Vyacheslav, Kozak Georgii, Mikheev Denis
Mendelejev University of Chemical Technology, Moscow, Russia
Detonability of mixtures on a base of various dispersion ammonium nitrate.

P.59 Aleksei Vasin, Evgenia Anosova, Georgii Kozak
Mendelejev University of Chemical Technology, Moscow, Russia
Explosion hazard of aromatic mononitrocompounds that used in a pharmaceutical industry.

PUBLISHED ONLY IN PROCEEDINGS:

P.60 Farhad Seif, Mohammad Ali Ghasemi, Mohammad Hossein Keshavarz
Malek Ashtar University of Technology, Isfahan-Shahin Shahr, Islamic Republic of Iran
Introduction DNU as a new energetic compound to improve performance of solid propellants.

P.61 Mohammad Ali Ghasemi, Farhad Seif, Mohammad Hossein Keshavarz
Malek Ashtar University of Technology, Isfahan-Shahin Shahr, Islamic Republic of Iran
Performance study of 1,3,5-tris(5-amino-3-nitro-1,2,4-triazolyl)-2,4,6-trinitrobenzene.

P.62 Ying Xiong, Yuanjie Shu, Xinfeng Wang, Ge Zhou, Hehou Zong, Yang Zhou
China Academy of Engineering Physics, Mianyang, China
Theoretical investigation on the thermal decomposition mechanisms of some high nitrogen s-tetrazines.

P.63 Alexey Fedorov, Anatoly Mikhaylov, Stanislav Finyushin, Dmitry NazarovTatiana Govorunova, Denis Kalashnikov, Evgeny Mikhaylov,
Russian Federal Nuclear Center, Sarov, Russia
Study of over-compressed regimes of detonation of condensed HE with use of laser doppler velocimeter.

P.64 Mahmoud A. Mahmoud
Egyptian Armed Forces, Cairo, Egypt
Preparation and characterization of glycidyl azide polymer (GAP).

P.65 Guixiang Wang, Xuedong Gong, Heming Xiao,
Nanjing University of Science and Technology, Nanjing, China
A theoretical study on pyrolysis mechanism and impact sensitivity of polynitro aromatic compounds.

P.67 Jie Sun, Bin Kang, et al.
China Academy of Engineering Physics, Mianyang, China
Investigation of irreversible expansion of 1,3,5-triamino-2,4,6-trinitrobenzene cylinder.

P.68 Jie Sun, Bin Kang, et al.
China Academy of Engineering Physics, Mianyang, China
Investigation on the thermal expansion of 1,3,5-trinitro-1,3,5-triazacyclohexane.

P.69 Yi Cheng
Nanjing University of Science & Technology, Nanjing, China
Investigation on the characteristic of B/Pb_3O_4 reaction.

P.70 Yuanjie Shu, Yong Liu, Ying Xiong, Xueyong Liu, Yajun Luo, Xiaoli Hu, Fachun Zhong, Yong Zhang, (*invited lecture)*
China Academy of Engineering Physics, Mianyang, China
Preparation and properties of novel fluorescence alkynyl compounds for explosive detection.

EVENING PROGRAM - Wednesday, April 21st

18:30 - 22:00 ***at Pardubice's Castle*** **http://www.vcm.cz/virtual/zamek.html**

18:30-19:30 Visit of the expositions:

"Bohemian glass" http://www.vcm.cz/virtual/ceske-sklo.html

"Collection of Toys" http://www.vcm.cz/virtual/vr/hr/1/flash/index.html

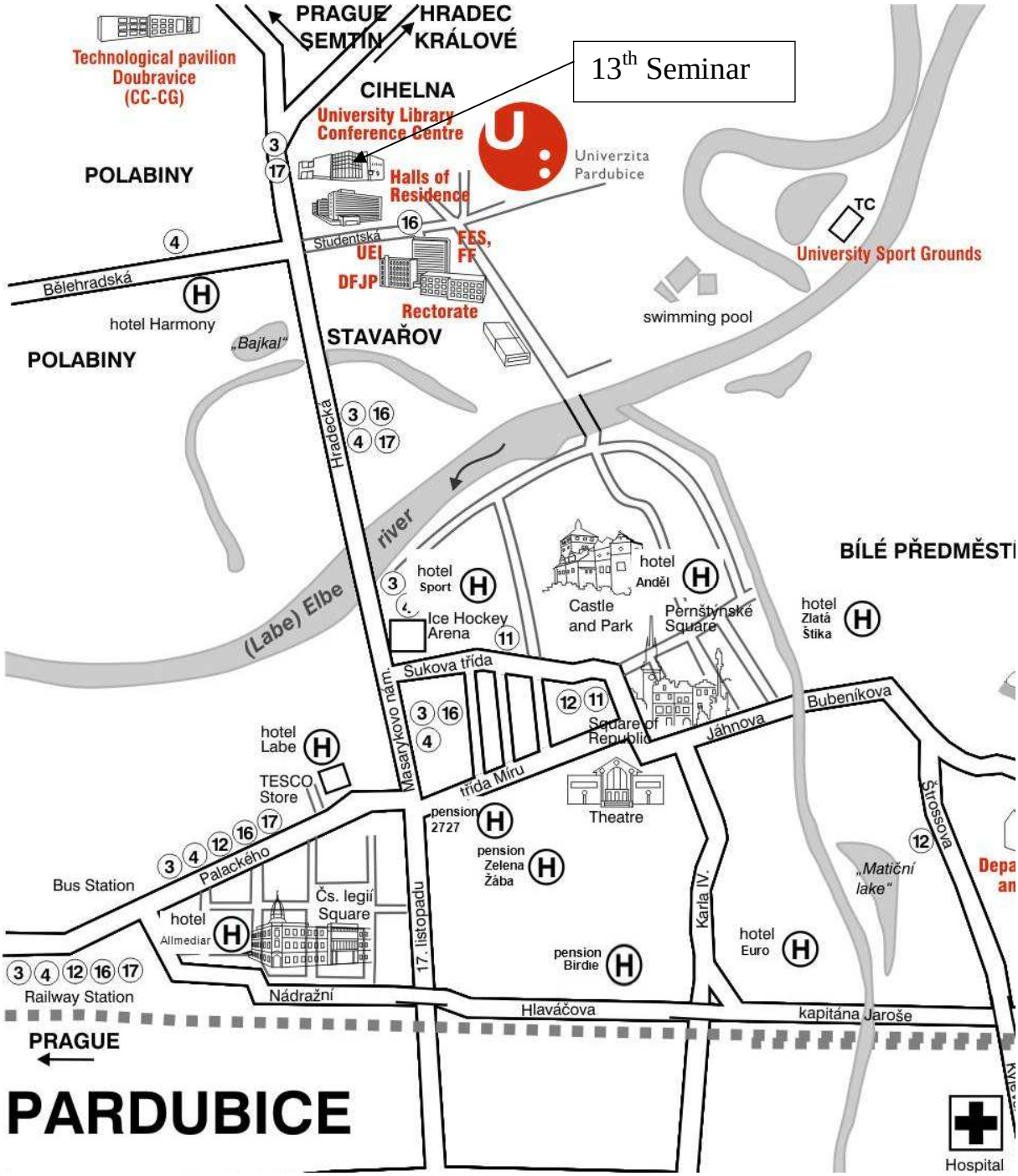
"Numismatics Collection" http://www.vcm.cz/virtual/penize-v-cechach.html

"Picture-Postcards Collection" http://www.vcm.cz/virtual/expozice-sbirky-pohlednic-orbis-pictus-lapidarium.html

19:30-22:00 A friendly get-together in the Knight Hall

http://www.vcm.cz/virtual/vr/ryt/1/flash/index.html
http://www.vcm.cz/virtual/vr/ryt/2/flash/index.html
http://www.vcm.cz/virtual/vr/ryt/3/flash/index.html

13th SEMINAR - orientation map – town PARDUBICE



Accommodation (*orientation prices as of Dec. 31st, 2009*)**:** based on experience from previous Seminars, the participants will have to make reservation themselves. The accommodation is possible in variety of 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 ($75) single room
1900.- CZK ($102)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:
1000.- CZK ($54) single room
1200.- CZK ($66) double room
1300.-CZK ($77) 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:
from $81 to $135
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:
900.- CZK ($49) single room
1300.- 2400 CZK ($77-$129) apartments/person
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:
900.- CZK ($49) single room
1100.- CZK ($59) 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:
1300.-CZK ($77) single room
1600.-CZK ($86) double room
1500.-CZK ($81) apartments for one person
approx. 30 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:
from €65, i. e. from $89.-
approx. 30 min. walk from the University Hall

Hotel 100:

phone: 00420 466 511 179
E-mail: hotel100@email.com
approximate prices/night:
1000.- CZK ($54) single room
1200.- CZK ($66) double room
1200.-CZK ($66) apartments for one person
approx. 25 min. walk from the University Hall

Note: *price of one meal in the town is about 220.-CZK (i. e. ~$12)*