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 eleventh Seminar

"NEW TRENDS IN RESEARCH OF ENERGETIC MATERIALS"

NTREM 2008

held at the University of Pardubice

and devoted to **fifty five years**
of devolution of the Science & Technology of Explosives education
from Prague to Pardubice

Pardubice, the Czech Republic

April 09-11, 2008

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

11TH INTERNATIONAL SEMINAR
"NEW TRENDS IN RESEARCH OF ENERGETIC MATERIALS"

is supported by:

U.S. Army Int. Technology Center (Atlantic) - European Research Office in London

Office of Naval Research Global, Middlesex *(only Session 3, see on page 8)*

Schlumberger, Reservoir Characterization Group, Clamart Cedex, France

Austin Detonator, Inc., Vsetín,

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

Explosia, Ltd., Pardubice,

Faculty of Chemical Technology, University of Pardubice,

STV Group, Praha

OZM Research, Hrochův Týnec

BORGATA, Ltd., Praha 5

Poličské strojírny, Ltd., Polička

The eleventh consecutive Seminar on the new trends in the research of energetic materials (EMs) is intended to be an international meeting of *young* people and scientists working in the field of teaching, research, development, processing, analysing and application of all kinds of energetic materials in academic as well as industrial sector. The main focus of this year's meeting will be aimed towards ***Advances in Energetic Performance and Safety*** but attention will also be devoted to other problems related to energetic materials including problems of safety engineering and education in this area. The intention of this meeting is to provide pleasant and welcoming atmosphere where exchange of professional experiences goes along with building of strong personal relations among young specialists working in the field of EM. 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 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.

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. 01st, 2008).

Chairman of the Seminar:

Prof. Svatopluk Zeman, D.Sc. (*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*)
Dr. Anthony J. Bellamy (*Cranfield Univ, UK*)
Dr. Ruth Doherty (*NSWC, Indian Head Division, USA*)
Prof. Haishan Dong (*Inst. of Chem. Materials, CAEP, Sichuan, China*)
Prof. Anatolii Dremin (*Inst. of Problems Chem. Phys., Chernogolovka*)
Prof. Zdeněk Friedl (*Chem. Faculty, Brno Univ. of Technology, CR*)
Prof. Manfred Held (*EADS/TDW, Schrobenhausen, Germany*)
Prof. Mikhail A. Ilyushin (*St. Petersburg State Inst. of Technol., Russia*)
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 J. Pasman (*Delft University of Technology, The Netherlands*)
Prof. Tatiyana S. Pivina (*Zelinskii Inst. of Organic Chemistry, Moscow)*
Prof. Peter Politzer (*Univ. of New Orleans, USA*)
Prof. Valerii P. Sinditskii (*Mendeleev Univ. of Chem. Technol., Moscow)*
Prof. Igor Tselinskii (*St. Petersburg State Inst. of Technol., Russia*)
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:

Dr. Jiří Pachmáň (*IEM, FCT, 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, FCT, Univ. of Pardubice, Czech Rep.*)
Jan Ottis, M. Sc. (*IEM, FCT, Univ. of Pardubice, Czech Rep.*)
Dr. Pavel Valenta (*Austin Detonator, Vsetín*)
Dr. Iva Ulbrichová (*Dean Office, FCT, University of Pardubice*)

Affiliated activities:

The first meeting of the Scientific Committee will be realized on Tuesday, **April 08th, 2008**, at 6 p.m. in Pardubice in the **Pension & Restaurant BIRDIE** (see on map).

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 3500.-CZK, i. e. €140.- or $205.-).

Price of the Proceedings of the 10th Seminar will be 3400.-CZK (i. e. €135.-, or $200.-) 9th Seminar will be 3300,- CZK (i. e. €130.-, or $192.-), of the 8th seminar will be 2500,- CZK (i.e. €100.-, or $145.-); price of electronic versions of these Proceedings is 500.-CZK per issue (i. e €20.-, or $30.-). Limited amount of printed version of Proceedings from the 4th, 5th and 6th seminars is also available for 1000,- CZK per issue (i. e. €40.-, or $60.-) and from 7th Seminar for 1600.-CZK (i. e. €60.-, or $94.-).

Proceedings of 3rd to 11th Seminar will also be available as a collection on 1 CD for 2500.- CZK (i. e. $155.-)

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 08th 4:00PM - 7:00 PM
April 09th 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. $6.- or €4.-). There are also restaurants within walking distance from the meeting hall, for example in the HARMONY Hotel.

Special Program:

A friendly "get-together" for foreign participants and for workers and co-workers of Institute of Energetic Materials will be arranged at **ABC Klub** (see on map) on Thursday, April 10th (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 for updates

The contact address for any information regarding the Seminar:

Organizing committee of NTREM
Institute of Energetic Materials
University of Pardubice
532 10 Pardubice
CZECH REPUBLIC, European Union

Phone: (+420) 46 603 8023
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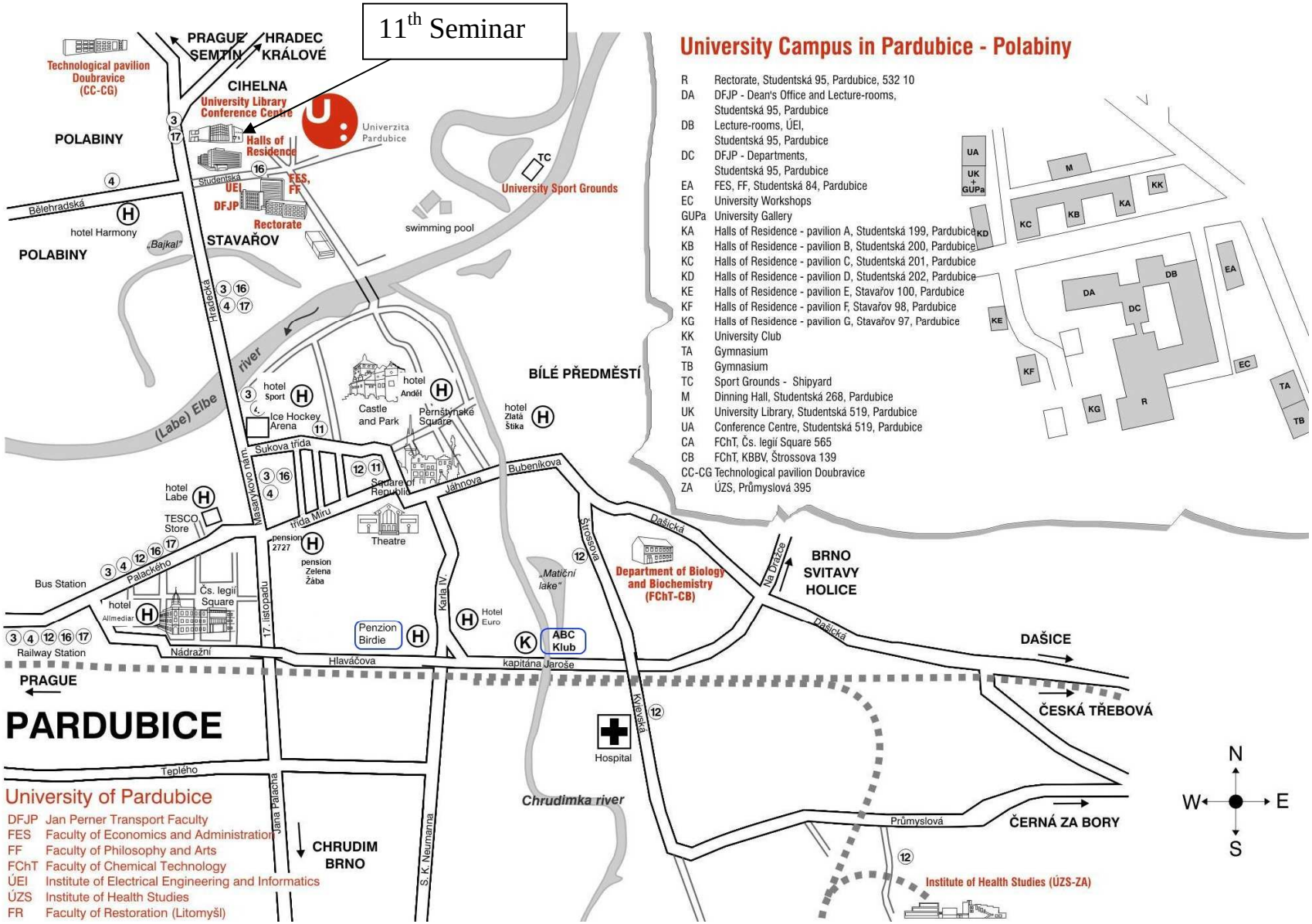
E-mail: seminar@ntrem.com

11th SEMINAR - orientation map – town PARDUBICE



University Campus in Pardubice - Polabiny

R	Rectorate, Studentská 95, Pardubice, 532 10
DA	DFJP - Dean's Office and Lecture-rooms, Studentská 95, Pardubice
DB	Lecture-rooms, ÚEI, Studentská 95, Pardubice
DC	DFJP - Departments, Studentská 95, Pardubice
EA	FES, FF, Studentská 84, Pardubice
EC	University Workshops
GUPa	University Gallery
KA	Halls of Residence - pavilion A, Studentská 199, Pardubice
KB	Halls of Residence - pavilion B, Studentská 200, Pardubice
KC	Halls of Residence - pavilion C, Studentská 201, Pardubice
KD	Halls of Residence - pavilion D, Studentská 202, Pardubice
KE	Halls of Residence - pavilion E, Stavařov 100, Pardubice
KF	Halls of Residence - pavilion F, Stavařov 98, Pardubice
KG	Halls of Residence - pavilion G, Stavařov 97, Pardubice
KK	University Club
TA	Gymnasium
TB	Gymnasium
TC	Sport Grounds - Shipyard
M	Dinning Hall, Studentská 268, Pardubice
UK	University Library, Studentská 519, Pardubice
UA	Conference Centre, Studentská 519, Pardubice
CA	FChT, Čs. legií Square 565
CB	FChT, KBBV, Štrossova 139
CC-CG	Technological pavilion Doubravice
ZA	ÚZS, Průmyslová 395

University of Pardubice

DFJP	Jan Perner Transport Faculty
FES	Faculty of Economics and Administration
FF	Faculty of Philosophy and Arts
FChT	Faculty of Chemical Technology
ÚEI	Institute of Electrical Engineering and Informatics
ÚZS	Institute of Health Studies
FR	Faculty of Restoration (Litomyšl)

LECTURE PROGRAM OF THE 11TH NTREM – Wednesday April 09th

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)*
Energetics Department, Dstl Fort Halstead, Sevenoaks, UK;
Recent and Current NATO RTO Work on Munitions Disposal. *page 6*

09:30 Wang Jun; Dong Haishan; Huang Yi Gang; Li Jin Shan
Institute of Chemical Materials, China Academy of Engineering Physics, Mianyang, China;
A Novel High Energy Density Material Compound
3,4-Bis(nitrofurazano)furoxan: Synthesis, Characterization and Properties. *page 182*

09:50 Jörg Stierstorfer, Thomas M. Klapötke,
Ludwig-Maximilian University of Munich, Munich, Germany; *page 278*
Energetic Materials based on 5-Aminotetrazoles.

10:10 Carles Miró Sabaté, Thomas M. Klapötke
Ludwig-Maximilian University of Munich, Munich, Germany
Bridged-Bistetrazole Derivatives. *page 234*

10:30 – 10:50 Coffee break

10:50 Olga Kovalchukova; Yuri Burov; Valery Dubikhin ; Svetlana Strashnova *page 207*
Peoples' Friendship University of Russia, Moscow,
Synthesis, Structure and Properties of some New Nitro- and Oxo-Derivatives of Pyridine .

11:10 Anna Kimmel, Alex Shluger; Peter Sushko; Maija Kuklja
Department of Physics, University of Nevada, Las Vegas, Nevada, USA;
Decomposition Chemistry in Solid DADNE. *page 199*

11:30 Vladimir Golubev
*Russian Federal Nuclear Center - VNIIEF, Sarov, Russia***;**
Bond Dissociation Energies for Nitro Group Scission in Molecules of Various Classes of Explosives. *page 551*

11:50 Adam Collins; William Proud
Cavendish Laboratory, University of Cambridge, Cambridge, Uk
Properties of Lead-Free Primers – Development of a Testing Facility at the Cavendish Laboratory. *page 113*

12:10 Benny Yoskovich, Gad Hartman, Iftach Schreieber, Moshe Kivity
Israel Military Industries, Ramat Hasharon, Israel;
Variation Analysis of Propellant Mechanical Properties. *page 337*

12:30 - 14:00 LUNCH BREAK

2. Session

Chairman: Prof. Michel Lefebvre
Royal Military Academy, Belgium

14:00 Dr. Ruth Doherty (*invited lecture)*
Naval Surface Warfare Center - Indian Head Division, Indian Head, MD, USA;
A New Look at Evaluating Shock Sensitivity by Gap Tests. *page 11*

14:30 Michael Göbel; Thomas M. Klapötke
Ludwig-Maximilian University of Munich, Munich, Germany;
Development and Testing of High Density Energetic Materials Containing Superior Amounts of Oxygen. *page 150*

14:50 Hans-Jürgen Fahl
Bundeswehr Technical Center for Weapons and Ammunition (WTD 91), Meppen, Niedersachsen, Germany;
Dynamics of Explosive Fumes. *page 131*

15:10 Waldemar A. Trzciński; Józef Paszula; Sebastian Grys
Military University of Technology, Warsaw, Poland;
Detonation Parameters and Blast Wave Characteristics of Nitromethane Mixed with Particles of an Aluminium-Magnesium Alloy. *page 299*

15:30 Winfried Kalz
Bundeswehr Technical Center for Weapons and Ammunition, Meppen, Niedersachsen, Germany;
Urban-Module for Explosive-Tests. *page 128*

15:50 – 16:10 Coffee break

16:10 John Addiss; William Proud
Cavendish Laboratory, University of Cambridge, Cambridge, UK
Relationship between the Compaction Reponse and Morphology of RDX and Its Shock Semsitivity. *page 40*

16:30 Michael Cartwright
Cranfield University at Defence Academy, Shrivenham, UK
Correlation of Structure and Sensitivity in Inorganic Azides. *page 99*

16:50 Richard van der Bouma, Antoine van den Heijnen; A. Bouluijt; H. Verbeek
Security and Safety, TNO Defence, Rijswijk, The Netherlands
Impact Testing of RDX; the Effect of Crystal Quality. *page 91*

17:10 Bogdan Czajka; Katarzyna Lipińska; Marek Lipiński; Leszek Wachowski; Waldemar Witkowski
Institute of Non-ferrous Metals, Poznań, Poland
Characterization of High Calorific Fe-$KClO_4$ Mixture. *page 122*

17:30 Pharis E. Williams
*Williams Research, Los Alamos, NM, USA***;**
Application of Nanotechnology Techniques to Non-Ideal Emulsion Explosives. *page 319* …

17:50 Xinghua Xie; Shilong Yan; Xiaojie Li,
Anhui University of Science and Technology, Huainan, Anhui Province, China
Nanometer Detonation Soot at Low Temperature. *page 329*

LECTURE PROGRAM OF THE 11TH NTREM – Thursday April 10th

3. Session – Safety Engineering *sponsored by Office of Naval Research Global*

Chairman: Prof. Hans J. Pasman
Delft University of Technology, The Netherlands

Co-chairman: Dr. Miloš Ferjenčík
Inst. of Energetic Materials, University of Pardubice

08:40 Hans J. Pasman (*invited lecture)*
Delft University of Technology, The Netherlands
Basic Safety ABC. *page 28*

09:10 Břetislav Janovský; Jindřich Jarozs
Institute of Energetic Materials, University of Pardubice, Pardubice, Czech Republic;
Overpressure Calculation of Gas Explosion in Tunnels . *page 171*

09:30 Jiří Šustek; Břetislav Janovský; Lukáš Vejs
Institute of Energetic Materials, University of Pardubice, Pardubice Czech Republic,
Could be the Simple Methods of Overpressure Calculation During Vented Gas Explosion Universally Use for Various Conditions? *page 351*

09:50 Rafal Porowski; Andrzej Teodorczyk
Warsaw University of Technology, Institute of Heat Engineering, Warsaw, Poland
Evaluation of detonation parameters for hydrogen-methane-air mixtures in pipeline transport. *page 267*

10:10 Miloš Ferjenčík
University of Pardubice, Pardubice, Czech Republic;
The Quantitative Risk Assesment of Civil Facilities Handling Explosives. *page 140*

10:30 Tomasz Sałaciński, Waldemar Witkowski
Institute of Industrial Organic Chemistry, Warsaw, Poland
Role of Thermal Stimuli in Accidents During Manufacturing of Explosives. *page 122*

10:50 – 11:00 Coffee break

11:00 Jadwiga Polawska-Jach, Zygmunt Meissner, Andrzej Kolaczkowski
Wroclaw University of Technology, Wroclaw, Poland;
Liability of some Ammonium Nitrate Mixtures to Spontaneous Decomposition. *page 261*

11:20 Christophe Van De Velde; Michel Lefebvre; Peter Mermans
Royal Military Academy (RMA), Brussels, Belgium
Experimental Assessment of the Detonability of Ammonium Nitrate. *page 308*

11:40 Harries Muthurajan, Ang How Ghee
Nanyang Technological University, Singapore, Singapore
Software for the Computation of Activation Energy from Differential Scanning Calorimetry and Related Safety Parameters of High Energetic Materials. *page 156*

12:10 Maciej Miszczak; Andrzej Brzyski
Military Institute of Armament Technology, Zielonka, Poland;
An Analysis of Test and Assessment Methods on Chemical Compatibility of Primary Explosives. *page 246*

12:30 Jan Páca; Martin Halecký; Rakesh Bajpai
Institute of Chemical Technology, Prague, Czech Republic;
Continuous Aerobic Degradation of Dinitrotoluenes by Immobilized Mixed Microbial Population. *page 254*

12:50 – 14:00 LUNCH BREAK **4. Session – Poster program – see on page 5**

LECTURE PROGRAM OF THE 11TH NTREM – Friday April 11th

5. Session

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

09:00 Prof. Manfred Held (*invited lecture)*
TDW, Schrobenhausen, Germany;
Blast - Fragment Loads. *page 22*

09:30 Joseph E. Backofen
BRIGS Co. , Oak Hill, Virginia, USA
The Two-Stage Detonation Propulsion Model: Further Exploring 1st Stage Performance Effects by a Look Backward at the Model's Basis.

09:50 Sergo Khomeriki, Rudolf Mikhelson, Davit Khomeriki, Konstantine Antidze, Khatia Dzebisashvili, Hossein Tudeshki
G.Tsulukidze Mining Institute, Tbilisi, Georgia;
Computer Program of Designing Drilling and Blasting Works on Open Cast Mines. *page 194*

10:10 Alexander N. Lukin
Southern Branch of the Russian State Hydro-Meteorological University of Saint-Petersburg, Tuapse, Russia
Advanced Concept of the Phenomenon of Negative Erosion at the Energetic Materials Unsteady Combustion. *page 211*

10:30 Mark Ashcroft; Simon Torry; David Tod
Energetics, QinetiQ Fort Halstead, Sevenoaks, Kent, UK;
Inhomogeneous Ageing of a PBX. *page 52*

10:50 – 11:20 Coffee break

11:20 - 12:00 CLOSING REMARKS including AWARDING OF PRIZES

POSTER PROGRAM OF THE 11TH NTREM **– Thursday April 10th**

4. Session

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

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

P.1 Thomas M. Klapötke; Burkhard Krumm; Norbert Mayer; Franz Xaver Steemann; Georg Steinhauser
Ludwig-Maximilian University of Munich, Munich, Germany;
Safety Testing of Protective Gloves.

P.2 Tomasz Sałaciński; Tadeusz Piotrowski; Andrzej Papliński
Institute of Industrial Organic Chemistry, Warsaw,
Safety Assessment of Composite Propellants Manufacturing Processes According to TEMCLEV-Ex Method.

P.3 Zbigniew Leciejewski
Military University of Technology, Warsaw, Poland;
Closed Vessel Experiments - Investigation of Ignition Phase

P.4 Eugeniy Smolensky; Tatyana Pivina; Lyubov Maslova; N. Zhokhova
Zelinsky Institute of Organic Chemistry, Russian Academy of Sciences, Moscow,
Structure and Spark Sensitivity Relationships Modeling by QSPR-methods.

P.5 Wincenty Skupinski; Przemyslaw Kuzaka; Miroslaw Dygas; Pawel Maksimowski; Andrzej Orzechowski
Faculty of Chemistry, Warsaw University of Technology, Warszawa, Poland
Sensitivity of CL-20 to External Stimuli Related to the Shapes and Size of.

P.6 Jonas Sarlauskas; Henrikas Nivinskas; Zilvinas Anusevicius; Ausra Nemeikaite-Ceniene; Helen Toogood; Nigel S. Scrutton; Petras Montrimas; Narimantas Cenas
Department of Xenobiotics Biochemistry, Institute of Biochemistry, Vilnius, Lithuania;
QSARs in the Reductive Denitration of Organic Nitrate and N-nitramine Explosives by E. cloace PB2 PETN reductase.

P.7 Bogdan Florczak; Tomasz Sałaciński
Institute of Industrial Organic Chemistry, Warsaw, Poland;
Influence of Nitrocompounds on Aluminized Composite Propellants.

P.8 Tomasz Wolszakiewicz,
Institute of Industrial Organic Chemistry, Warsaw, Poland
Modeling of Non-Linear Properties of Solid Propellant.

P.9 Frederic Alvarez; Nikolay Latypov; Erik Holmgren; Marita Wanhatalo
Salais-Sanne, France; FOI, Swedish Defence Research Establishments, Tumba, Sweden
New Ingredients for CMDB Propellants

P.10 Vladimir Golubev
Russian Federal Nuclear Center – VNIIEF, Sarov, Russia;
Influence of Ionization and Excitation on Initial Stage of Decomposition of Simple Nitrocompounds.

P.11 Vladimir Golubev
Russian Federal Nuclear Center – VNIIEF, Sarov, Russia;
Quantum-Chemical Calculations of Properties of Several Light-Sensitive Molecular Complexes.

P. 12 Lemi Türker; Taner Atalar
Middle East Tecnical University, Ankara, Turkey;
Quantum Chemical Studies on Nitroethylnitramine (NENA) and its Charged Forms.

P.13 Lemi Türker, Selçuk Gümüş, Taner Atalar, Yakup Çamur; Çağlar Çelik Bayar
Chemistry, Middle East Tecnical University, Ankara, Turkey;
Theoretical Treatment of Some Novel Nitropyrimidines.

P.14 Roman Tsyshevsky; Guzel Garifzianova; Grigorii Khrapkovskii; Alexander Shamov
CNIT, Kazan State Technological University, Kazan, Tatarstan, Russia ;
A Theoretical Study of the Formation of the *aci*-Forms of 1-Nitropropane and its Radical Cation.

P.15 Peter Politzer, Jane S. Murray
University of New Orleans, USA
Effects of Electric Fields upon Electrostatic Potentials and Bond Properties of Nitromethane and Dimethylnitramine.

P.16 Igor Babaitsev; Nikolaii Akinin; Natalia Kozak; Faina Antipova; Olga Presnakova
Mendelejev University of Chemical Technology, Moscow;
Calculation of Detonation Parameters of RDX Mixtures with Inert Additives.

P.17 Seyed Jamaleddin Mousavi
Young Reaserch Club, Islamic Azad University of Abhar, Abhar, Iran;
Numerical Study of Two Dimensional Gaseous Detonation in a Channel.

P.18 David Lempert, Gelii Nechiporenko, Svetlana Soglasnova
Institute of the Problems of Chemical Physics, RAS,Chernogolovka, Moscow Region;
Some Anomalies in the Dependence of Specific Impulse of Energetic Compositions on the Aluminum Content.

P.19 Gelii Nechiporenko; David Lempert; Svetlana Soglasnova; Filip Nechiporenko
Institute of Problems of Chemical Physics RAS, Chernogolovka, Russia;
Energetic Possibilities of Compositions Based on Polynitrous High Enthalpy Substances.

P.20 Zvonimir Ester, Mario Dobrilović
Faculty of Mining, Geology and Petroleum Engineering, Zagreb, Croatia; **Disposability of the Disposibility of the Energy Produced in Shock Tube.**

P.21 Lucian Istode; Titica Vasile
Military Technical Academy, Bucharest, Romania,
Some Aspects Regarding the Influence of Chemical Catalysts on Combustion of Rocket Solid Propellants.

P.22 Traian Rotariu, Doru Goga, Doru; Sorin Eşanu; Viorel Ţigănescu
Armament Integrated Systems, Military Technical Academy, Bucharest, Romania;
Study Regarding Effectiveness of Stabilizer "Revival" Process on Old Artillery Gun Propellants.

P.23 Berko Zecevic, Alan Catovic, Jasmin Terzic
Mechanical Engineering Faculty, Defense Technologies Department, 71000 Sarajevo, Bosnia and Herzegovina;
Research of Influencing Parameters on Lethal Zone of Natural Fragmenting HE Warheads (the paper is not published in Proceedings).

P.24 Bogdan Florczak; Stanislaw Cudzilo
Institute of Industrial Organic Chemistry, Warsaw, Poland
The Catalytic Effect of Nano Fe_2O_3 on Burning Rate of the Aluminized PBAN/AP/HMX Composite Propellant.

P.25 Sanja Matečić Mušanić; Muhamed Sućeska; Ivona Flamengo; Ružica Čuljak ;
Brodarski Institute - Marine Research & Advanced technologies, Zagreb, Croatia,
Kinetics of Nitroglycerine Evaporation in Double Based Rocket Propelants.

P.26 Ivona Fiamengo; Muhamed Sućeska; Sanja Matečić Mušanić,
Brodarski Institute - Marine Research & Advanced technologies, Zagreb, Croatia,
Applicability of Thermal Methods for Identification of Homogenous Propelants.

P.27 Susanne Scheutzow; Anian Nieder; Thomas M. Klapötke; Olivier de Bonn
Chemistry and Biochemistry, Ludwig-Maximilian University of Munich, Munich, Germany;
Analysis of Residues in the AESTUS Engine for the ATV Mission.

P.28 Aleš Eisner; Martin Adam; Petra Bajerová; Jan Skládal; Věra Ježová; Karel Ventura,
Department of Analytical Chemistry, University of Pardubice, Pardubice;
Determination of Additives Explosive Materials from Various Matrices.

P.29 Róbert Varga; Ronald Horváth
Institute of Criminalistics, Bratislava, Slovakia;
Is it Possible to Find Gunshot Residues on the Shooter´s Hand After Shooting with Nontox Ammunition?

P.30 Petra Svachoučková
Defence Standardization, Codification and Government Quality Assurance Authority, Quality Assurance Representative, Vlašim, Czech Rep.
Toxicity of Small Cartridges.

P.31 Alexey Apolenis; Alexander Tsvigunov; Vladimir Annikov; Vlada Raikova
Mendelejev University of Chemical Technology, Moscow, Russia;;
Synthesis of new Modification of Aluminum Oxide and Iron Aluminates by Impact of Explosive.

P.32 Bogdan Czajka; Leszek Wachowski; Andrzej Łapiński; Michał Zieliński
Central Laboratory of Batteries and Cells, Institute of Non-ferrous Metals, Poznań, Poland;
Study of Oxides Layers onto Fine-Grained Iron Powders.

P.33 Mateusz Szala
Military University of Technology, Warsaw, Poland;
Combustion Synthesis of Multiwalled Carbon Nanotubes.

P.34 Andrzej Orzechowski; Dorota Powała; Andrzej Maranda
Institute of Industrial Organic Chemistry, Warsaw, Poland;
Crystallization of 4,10-Dinitro-2,6,8,12-tetraoxa-4,10-diazatetracyclo[5.5.0.0.5,903,11] dodecane.

P.35 Norbert T. Mayr; Andreas J. Maier; Thomas M. Klapoetke
Inorganic Chemistry, Ludwig-Maximilian University of Munich, Munich, Germany;
Comparison of 3,3'-Bis-1,2,4-oxadiazol-5-one and 5,5'-Bis-1H-tetrazole.

P.36 Jörg Stierstorfer; Thomas M. Klapötke,
Ludwig-Maximilian University of Munich, Munich, Germany;
Nitrogen Rich Dinitramides - A Class of Energetic Compounds with a well Balanced Oxygen Content.

P.37 Jörg Stierstorfer; Andreas U. Wallek; Thomas M. Klapötke
Ludwig-Maximilian University of Munich, Munich, Germany;
N-Rich Salts of 1-Methyl-5-nitriminotetrazolate – An Auspicious Class of Thermal Stable High Explosives

P.38 Anthony Bellamy; Peter Golding,
Cranfield University, Shrivenham, Swindon SN6 8LA, UK;
A new Synthetic Route to LLM-105 (2,6-Diamino-3,5-dinitropyrazine 1-oxide).

P.39 Stefan Ek (1); Malin Knutsson (1); Nikolaj Latypov (1); Grégoire Hervé (2)
Energetic Materials, FOI, Tumba, Sweden;
Characterization of Two Dinitropyrazoles.

P.40 Alexander Gidaspov
Samara State Technical University, Samara, Russia;
The Synthesis of N-Nitroamino-1,3,5-triazines with Polynitromethyl and other Explosophoric Groups.

P.41 Vladimir Bakharev; Mr. Alexander Gidaspov
Samara State Technical University, Samara, Russia;
The Synthesis and some Chemical Transformations of Alkylnitroamino-polynitromethyl-1,3,5-triazines.

P.42 Thomas M. Klapötke; Karina Tarantik
Ludwig-Maximilian University of Munich, Munich, Germany;
Green Pyrotechnic Compositions.

P.43 Shilong Yan
Anhui University of Sience and Technology, Huainan, Anhui Province, China;
Qudrate Crystal from Green Chemistry.

P.44 Xinghua Xie
Anhui University of Sience and Technology, Huainan, Anhui Province, China;
Unconventional Nano-Balls from Ion Reaction.

P.45 Zhou Huisheng
Anhui University of Sience and Technology, Huainan, Anhui Province, China
Fast Reaction and Nanometer Products

P.46 Shilong Yan; Xinghua Xie;
Anhui University of Science and Technology, Huainan, Anhui Province, China
Fast Reaction and Nanometer Products.

P.47 Eric Pasquinet, Nathalie Eloy; Eric Grech; Frank Quillot; Olivier Besnard; Didier Poullain; Arnaud Beaucamp
CEA, Le Ripault, France;
Energetic Polymers Based on 2,4-Dinitrostyrene: Synthesis, Characterization and Unexpected Sensitivity to Impact.

P.48 Stefan Sproll; Thomas Klapoetke
Ludwig-Maximilian University of Munich, Munich, Germany;
Synthesis and Characterization of Nitrogen Rich, Energetic Polymers.

P.49 M.-J. Crawford; Thomas M. Klapötke; Hendrik Radies
Ludwig-Maximilian University of Munich, Munich, Germany;
Comparison of Perfluorinated Tetrazolate Salts.

P.50 Thomas M. Klapötke; Burkhard Krumm; Anian Nieder; Reinhold Tackel; Dennis Troegel
Ludwig-Maximilian University of Munich, Munich, Germany;
A Study of Alkyl and Cycloalkyl Nitrates and Polynitrates.

P.51 Igor Zyuzin; Nina Golovina; David Lempert
Institute of Problems of Chemical Physics RAS, Chernogolovka, Russia;
1,1-Di(methoxy-NNO-azoxy)ethene as a Perspective Source for Synthesis of new Energetic Substance.

P.52 Nina Makhova; Igor Ovchinnikov
Zelinsky Institute of Organic Chemistry, Russian Academy of Sciences, Moscow, Russia;
New Variant of 1,3,3-trinitroazetidine Synthesis.

P.53 Igor Ovchinnikov; Nina Makhova
Zelinsky Institute of Organic Chemistry, Russian Academy of Sciences, Moscow, Russia;
Synthesis of 3-Amino-6-nitro-1,2,4,5-tetrazine and its 2,4-dioxide.

P.54 *Alexander Astachov; Vitaliy Revenko; Eduard Buka*
Chemical Technology of Organic Compounds of Nitrogen, Siberian State Technological University, Krasnoyarsk, Russia;
Some Properties of 1-(Tetrazol-5-yl)-2-nitroguanidine.

P.55 Rudolf Stepanov; Ludmila Kruglyakova; Alexander Astachov
Chemical Technology of Organic Compounds of Nitrogen, Siberian State Technological University, Krasnoyarsk, Russia;
Thermal Decomposition of some 4-Substituted 3-Methylfuroxans.

P.56 Yuri Burov; Valery Dubikhin ; Olga Kovalchukova
Russian Academy of Science, Chernogolovka,
Abnormal Dependence of the Kinetics of Thermal Decomposition of HMX on Particle Sizes

P.57 Michael Göbel ; Thomas M. Klapötke; Anthony J. Bellamy
Ludwig-Maximilian University of Munich, Munich, Germany;
From Molecular Structure to Explosive Performance Parameters: Properties of the Homologous Sseries of Guanidinium Salts of 3,5-Diaminopicric Acid.

P.58 Carles Miró Sabaté; Thomas M. Klapötke
Ludwig-Maximilian University of Munich, Munich, Germany;
Energetic salts with the Guanylurea Cation.

P.59 Carles Miró Sabaté; Thomas M. Klapötke
Ludwig-Maximilian University of Munich, Munich, Germany;
5,5´-Hydrazinobistetrazole and its Metal Salts: Promising Propellant and Pyrotechnic Ingredients.

P.60 Valery Sinditskii; Viacheslav Egorshev; Mr. Anastacia Korchemkina
Mendelejev University of Chemical Technology, Moscow, Russia;
Ammonium Salts of Some Oxynitrogen and Oxyhalogen Acids: a New View on the Combustion Mechanism.

P.61 Nina Golovina; Gelii Nechiporenko; Gennadii Nemtsev; Igor Zyuzin; Valentin Roshchupkin; David Lempert
Institute of Problems of Chemical Physics RAS, Chernogolovka, Russia
Ammonium Nitrate Phase State Control by Intermolecular Interaction between Nitrate Anion and Organic Modifiers Built into the Ammonium Nitrate Crystal Lattice.

P.62 Stanisław Cudzilo; Andrzej Maranda ; Jacek Suszka
Military University of Technology, Warsaw, Poland;
Thermal Stability of Emulsified Ammonium Nitrate Containing Cooling Agents.

P.63 Aleksander Kushtaev; Nikolaj Yudin; Vitold Zbarsky
Mendelejev University of Chemical Technology, Moscow, Russia;
The Nitration Kinetics of 6-Hydroxy-2-methylpyrimidine-4(3H)-one in Sulfuric-Nitric Acid.

P.64 Dmitry Katorov
Mendelejev University of Chemical Technology, Moscow, Russia;
Synthesis of 1,2,3-Triazole Derivatives from α-Nitrotriazides.

P.65 Ekaterina Veselova; Vitold Zbarsky
Mendelejev University of Chemical Technology, Moscow, Russia;
On the Reaction of Trinitroaromatic Compounds with 4-Amino-1,2,4-triazole. Mixtures.

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

18:30 - 22:00 EVENING PROGRAM (*in ABC Klub - see on map)*

PAPERS PUBLISHED ONLY IN PROCEEDINGS

PP.1 Georgii Kozak; Vasin Yakovlevich; Alexandra Dyachkova
Mendelejev University of Chemical Technology, Moscow, Russia;
Explosion Hazard of Aromatic Organic Compounds Containing One or Two Nitro Groups.

PP.2 Vyacheslav Kuzmin; Georgii Kozak; Mikhail Solov`ev; Yurii Tuzkov
Mendelejev University of Chemical Technology, Moscow, Russia;
Forensic Investigation of some Peroxides Explosives.

PP.3 Ilya Zhukov; GerorgiiKozak;
Mendelejev University of Chemical Technology, Moscow, Russia;
Calculation of Thermochemical and Explosive Characteristics of Furoxanes.

PP.4 Olga Litovka; Ceorgii Kozak; Ekaterina Chugreeva; Aleksandr Starshinov
Mendelejev University of Chemical Technology, Moscow, Russia;
Cast Porous Charges on a Base of Ammonium Nitrate-Urea Eutectic

PP.5 Anna Veprikova; Vlada Raikova
Chemical engineering, Mendelejev University of Chemical Technology, Moscow, Russia;
Thermodynamic Calculation of Detonation Parameters of TNT/Al Mixes.

PP.6 Denis Kokovikhin; Alexander Dubovik
Chemical engineering, Mendelejev University of Chemical Technology, Moscow, Russia;;
Analysis of a Curve of Relative Frequency for Explosions of Hexogen.

PP.7 Ming Yin; Yuanj-jie Shu; Ying Xiong; Shi-kai Luo; Xin-ping Long
Institute of Chamical Materials, China Academy of Engineering Physics, Mianyang, ChinaChina Academy of Engineering Physics, Mianyang, China
Theoretical Study on Structures and Properties of Nitroimidazole Compounds

Accommodation (*prices to the Jan. 31st, 2008*)**:** 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 ($80) single room
1900.- CZK ($108)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 ($57) single room
1200.- CZK ($69) double room
1300.-CZK ($74) 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 ($142-$199) apartments
1500-1900 CZK ($85-$108) single room
1700-2100 CZK ($97-$119) 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:
1100.- CZK ($63) single room
1300.- CZK ($74) 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:
885.- CZK ($51) single room
1090.- CZK ($62) 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 ($74) single room
1600.-CZK ($91) double room
1500.-CZK ($86) 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:
1090.- CZK ($62) single room
1308.- CZK ($75) double room
1308.-CZK ($75) 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:
1900.- CZK ($108) single room
2100.- CZK ($120) 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:
1200.- CZK ($69) single room
1300.- CZK ($74) double room
2100.-CZK ($120) 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:
1050.- CZK ($60) single room
1250.- CZK ($71) double room
1300.-CZK ($74) apartments for one person
approx. 25 min. walk from the University Hall

Note: price of one meal in the town is about 200.-CZK (i. e. ~$14)