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

PROGRAM

(the third version)

of the sixteenth seminar

„NEW TRENDS IN RESEARCH OF ENERGETIC MATERIALS“

NTREM 2013

held at the University of Pardubice

Pardubice, the Czech Republic

April 10th – 12th, 2013

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

THE **16TH INTERNATIONAL SEMINAR**
"NEW TRENDS IN RESEARCH OF ENERGETIC MATERIALS"
http://**www.ntrem.com**

is supported by:

Austin Detonator, Inc., Vsetín,
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Bofors Test Center, Sweden
Institute of Shock Physics, Imperial College London, London
Nicolet CZ, Prague
Faculty of Chemical Technology, University of Pardubice,
OZM Research, Hrochův Týnec

The sixteenth consecutive seminar on new trends in research of energetic materials is intended to be a world meeting of *young* people, university teachers and specialists working in the fields of teaching, research, development, processing, analyzing and application of all kinds of energetic materials. The main attentiom of this year's meeting will be focused on the *Perspective Approaches to Development of Energetic Materials* but attention will also be directed to other problems related to energetic materials. It is not aimed only at the exchange of professional information but also at creating a pleasant meeting atmosphere where young specialists from different countries have the opportunity to meet and come into personal contacts.

Papers should not only describe research work itself, but should also demonstrate awareness of the context and background of 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, the 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, young researchers and other attendants*** 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 the Czech Republic. Please contact the Czech Embassy or consulate in your country for more information (the Czech Republic is a part of Schengen territory).

Registration: Registration *via* web form should be done before the end of April 7th, 2013. Registration of participants after this date will take place at the University Hall:

April 9th 4:00PM - 7:00 PM
April 10th 7:30AM - 10:00 AM

Proceedings of the presented contributions will be prepared by the organizers of the seminar by the date of its opening; the price of the Proceedings will be 3500.- CZK (i.e. ~ $180; €140) printed version and 500.- CZK (i. e. ~$25; €20) CD version. The prices are valid at the time of the seminar. The Proceedings will be provided to the main authors free of charge.

Also two monographs will be offered during the Seminar process – see on page 7.

Please, watch 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:

Assoc. Prof. Alexandr Astachov	*Siberian State Technological University, Russia*
Dr Manfred A. Bohn	*Fraunhofer ICT, Pfinztal, Germany*
Prof. Martin Braithwaite	*University of Cambridge, U.K.*
Dr David E. Chavez	*Los Alamos National Laboratory, NM, USA*
Dr Ruth Doherty	*Naval Surface Warfare Center, Indian Head Division, USA*
Prof. Alon Gany	*Technion – Israel Institute of Technology, Haifa, Israel*
Prof. Thomas Klapoetke	*Ludwig-Maximilians-Universität Műnchen, Germany*
Prof. Pavel Konečný	*University of Defence, Brno, Czech Rep.*
Prof. Michel Lefebvre	*Royal Military Academy, Belgium*
Dr David Lempert	*Russian Acad. of Sci., Chernogolovka, Russia*
Prof. Andrzej Maranda	*Military Univ. Technol., Warsaw, Poland*
Prof. Tatiana S. Pivina	*Zelinskii Inst. of Organic Chemistry, Moscow*
Dr William Proud	*Imperial College London, G. B.*
Prof. Yuanjie Shu	*CAEP, Inst. of Chemical Materials, Mian Yang*
Prof. Aleksander Smirnov	*State Sci. Res. Inst. of Mechanical Engineering, Dzerzinsk*
Dr Muhamed Sućeska	*Nanyang Technological University, Singapore*
Prof. Waldemar A. Trzciński	*Military Univ. Technol., Warsaw, Poland*
Prof. Lemi Türker	*Middle East Technical Univ., Ankara, Turkey*
Dr Rodney Willer	*earlier University of Southern Mississippi, USA*
Prof. Jianguo Zhang	*Beijing Inst. of Technology, Beijing, China*
Prof. Sunguan Zhu	*Nanjing University of Sci. and Technology, China*

Organizing Committee

Chairman of the Committee:

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

Members of the Committee:

Dr Jakub Šelešovský	*IEM, FCT, Univ. of Pardubice, Czech Rep.*
Dr Robert Matyáš	*IEM, FCT, Univ. of Pardubice, Czech Rep.*
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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University of Pardubice
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THE CZECH REPUBLIC, European Union

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Affiliated activities:

The first meeting of the ***SCIENTIFIC COMMITTEE*** will be held on Tuesday, **April 9th, 2013**, at 6 p.m. in the **Pension & Restaurant BIRDIE** (see the map), the second one on Thursday, **April 11th, 2013** in the University Hall – see page 7.

A friendly get-together for foreign participants and for workers and co-workers of IEM will be arranged at **Pardubice's Castle** on April 11th, 2013 – see page 14.

Lecture program of the 16th NTREM – Wednesday April 10th

08:15 **Meeting of all speakers** of the first Session with Chairman of this Session.

08:40 **Opening of seminar** – speech of Assoc. Prof. Jana Kubanová
vice-rector of University of Pardubice

1. Session

Chairman: Prof. Thomas Klapoetke
Ludwig-Maximilians-Universität München

09:00 Christopher H. Braithwaite, Phillip D. Church, Robert Claridge, Phillip R. Ottley, Ian M. Lewtas, Nigel Harrison, Peter J. Gould, Andrew P. Jardine
University of Cambridge, Cambridge, United Kingdom
A novel energetic material, from theory to practice

09:30 Evgenia Golda Kishilev, Alon Gany,
Technion – Israel Institute of Technology, Haifa, Israel
Silicon Based Energetic Materials

09:50 Quirin J. Axthammer, Marcos A. Kettner, Thomas M. Klapötke, Richard Moll, Sebastian F. Rest,
Ludwig-Maximilian University of Munich, Munich, Germany
Progress in the development of high energy dense oxidizers based on CHNO(F)-compounds

10:10 Jian-Guo Zhang, Mou Sun, Jin-Ting Wu, Xin Yin, Tong-Lai Zhang,
Beijing Institute of Technology, Beijing, China
Synthesis, structure and thermal analysis of 3-hydrazino-4-amino-1,2,4-triazole energetic salts

10:30 – 10:50 Coffee break

10:50 Yu-Chuan Li, Qiu-Han Lin, Wei Liu, Si-Ping Pang
Beijing Institute of Technology, Beijing, China
New methods for the synthesis of 5-nitrotetrazole-2-N-oxides

11:10 Hiroki Matsunaga, Hiroto Habu, Atsumi Miyake,
Yokohama National University, Yokohama, Japan
Thermal decomposition mechanism of ammonium dinitramide using pyrolysate analyses

11:30 Yongxing Tang, Hongwei Yang, Guangbin Cheng, Xuehai Ju,
Nanjing University of Science and Technology, Nanjing, China
The 1,3-bis(5-amino-1H-tetrazol-1-yl)triaz-1-en-1-ium cation (C2H6N13+): A highly nitrogen-rich moiety with a N11 chain

11:50 Dennis Fischer, Thomas Klapötke, Joerg Stierstorfer,
Ludwig-Maximilian University of Munich, Munich, Germany
The synthesis and characterization of 1-hydroxy-5-aminotetrazole and highly energetic azo-bis(1-hydroxy-tetrazole) and their Ionic derivatives

12:10 Kai Dong, Yuan Wang, Xubin Gong, Jing Zhang, Chenghui Sun, Siping Pan
Beijing Institute of Technology, Beijing, China
Novel energetic hexaazaisowurtzitane derivatives bearing nitro and azido

.

12:30 - 14:00 LUNCH BREAK

2. Session

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

13:40 **Meeting of all speakers** of the second Session with Chairman of this Session.

14:00 Rodney L. Willer
Retired, formerly University of Southern Mississippi, Mississippi, USA
The true history of CL-20

14:30 Anna Vasil'eva, Dmitry Dashko, Sergey Dushenok, Alexandr Kotomin, Andrei Stepanov,
Special Design and Construction Bureau SDCB "Technolog", Saint Petersburg, Russia
Preparing and some properties of spheroid ε-HNIW

14:50 Alan DeHope, Philip F. Pagoria, Damon Parrish,
Lawrence Livermore National Laboratory, Livermore, CA, USA
New polynitro alkylamino furazans

15:10 Hamza Turhan, Emel Yildiz, Taner Atalar, Lemi Turker, Canpolat Ozden, Nebi Gul,
TUBITAK MRC, Chemistry Institute, Kocaeli, Turkey
Identification and effect of 1,7-diacetoxy-2,4,6-trinitro-2,4,6-triazaheptane (BSX) as an impurity in RDX and HMX

15:30 Martin Künzel, Zdeněk Jalový,
University of Pardubice, Pardubice, Czech Republic
Preparation and characterization of n-butyl-N-azidoethyl nitramine

15:50 – 16:10 Coffee break

16:10 Qing Ma, Yuanjie Shu,
China Academy of Engineering Physics, Mianyang, China
Study of surface treatment for improvement in the interaction of RDX with TNT through ETPE pre-coating

16:30 Zhijian Yang, Jinshan Li, Shijun Liu, Zhong Huang, Bing Huang, Fude Nie,
China Academy of Engineering Physics, Mianyang, China
Efficient desensitization of high explosives via energetic coating

16:50 Christopher Williams, Stewart Walker, Ian Lochert, Stephen Clarke,
Centre of Expertise in Energetic Material, Adelaide, Australia
Investigation into the interaction of Dantocol in polymer bonded explosives and bonding agent development

17:10 *Miao Zheng*
Institute of applied physics and computational mathematics, Beijing, China
Method of study about quantification of uncertainties in numerical simulation

17:30 Lan Wei
Institute of Applied Physics and Computational Mathematics, Beijing, China
Application of quantification of uncertainties method in detonation simulation to Steven test

17:50 Sridhar V. P., Surianarayanan M, Sivapirakasam S. P.,
Central Leather Research Institute, Chennai, India
Effects of concentration and particle size on thermal explosive characteristics of Fireworks

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Lecture program of the 16th NTREM – Thursday April 11th

3. Session

Chairman: Dr. Ruth Doherty
Naval Surface Warfare Center, Indian Head Division, USA

08:00 Valery Rosenband , Alon Gany
Technion-Israel Institute of Technology, Haifa, Israel
Production of activated metal powders as potential energetic materials

08:30 Anatoly Bragin, Konstantin Monogarov, Yuri Frolov, Nikita Muravyev, Aleksey Zhigach, Ilya Leipunsky, Michael Kuskov, Elena Afanasenkova, Nadezhda Berezkina,
Semenov Institute of Chemical Physics RAS, Moscow, Russia
The influence of aluminum particle size on combustion parameters of model compositions with nitramines

08:50 Katarzyna Cieślak, Andrzej Książczak, Angelika Zygmunt
Warsaw University of Technology, Warsaw, Poland
Determination of diphenylamine on initial thermal decomposition of single based propellant by using HFC

09:10 František Krejčíř, Pavel Konecny
University of Defence, Brno, Czech Republic
Changes of chemical and mechanical properties of double base propellants over artificial ageing

09:30 Guenter Mussbach, Manfred A. Bohn,
Fraunhofer Institut für Chemische Technologie (ICT), Pfinztal, Germany
Impact of ageing on the loss factor of composite rocket propellants and interpretation of changes considering post-curing

09:50 Qamar Nawaz, Farooq Nizam
Center of Excellence in Sciences and Applied Technologies, Islamabad, Pakistan
Aging study and structural analysis of solid fuel loaded in composite casing under operating pressure and vertical storage condition for service-life prediction

10:10 – 10:30 Coffee break

10:30 Erum Aamir, Rizwan Hussain, Farooq Nizam, Nayyar Jabeen, Abdur Rehman,
Centre of Excellence in Sciences and Applied Technologies, Islamabad, Pakistan
Rheology of HTPB propellant: effect of particle size distribution of ammonium per chlorate and its influence on properties of composite propellant

10:50 Ali Abd-elall, Hosam Mostafa,
Military Technical College, Cairo, Egypt
Theoretical and experimental investigation of reduced smoke composite propellants

11:10 Edward Mily
North Carolina State University, Raleigh, North Carolina, USA
Reactive nanolaminates with tailored energy yield

11:30 Martin Braithwaite, *Gary Sharpe*
University of Cambridge, Cambridge, United Kingdom
Approaches to the prediction of the non-ideal detonation characteristics of condensed phase explosives

11:50 Lippe D. Sadwin, Michael M. Swisdak, Jr.,
Sadwin Engineering Consultancy, Kefar Pines, Israel
Reflected and negative phase airblast energy measurements

12:10 Yuanjie Shu, Qing Ma,
China Academy of Engineering Physics, Mianyang, China
Mechanical properties study of toughened and modified melt-cast TNT based explosive formulations for anti-cracks and brittleness

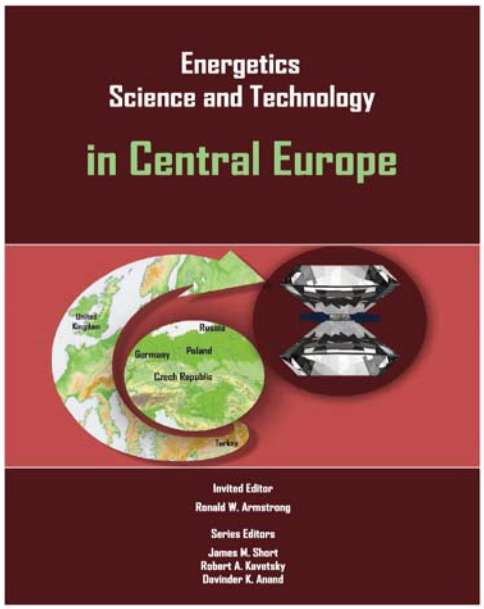
12:30 – 14:00 LUNCH BREAK

Afternoon program of the 16th NTREM – Thursday April 11th

4. Session – Poster program – see on page 9

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

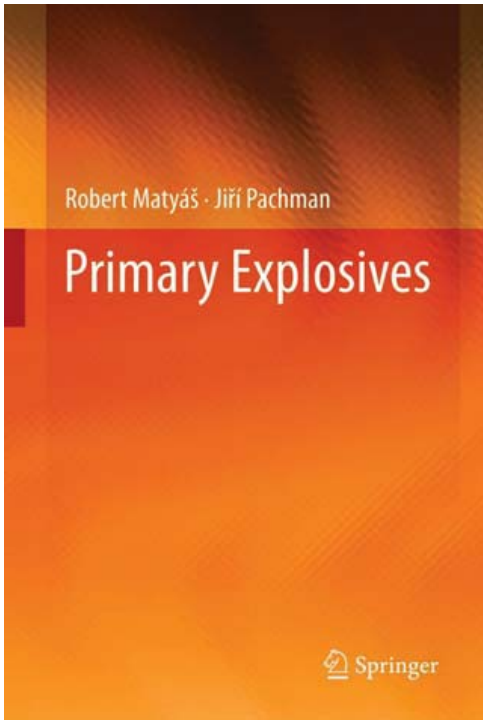
MONOGRAPHS OFFERED DURING THE SEMINAR PROCESS:



R. W. Armstrong, J. M. Short, R. A. Kavetsky, D. K. Anand (Eds.), **Energetics Science and Technology in Central Europe**, Center for Energetic Concepts Development Science, University of Maryland, 2012, ISBN 978-0-9846274-3-1.
Price: free of charge.

125 pieces of this monograph will be available free of charge

These monographs are a gift for participants of the 16th Seminar NTREM from ***Prof. James Short****, Deputy Director, Center for Energetic Concepts Development, University of Maryland*



R. Matyáš, J. Pachmáň, **Primary Explosives,** Springer, Heidelberg 2012, ISBN 978-3-642-28435-9
Orientation price **€110**

3 pieces of this book will be here *for demonstration* (its sale was not started yet)

Lecture program of the 16th NTREM – Friday April 12th

5. Session

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

08:00 Chiara Bo, Nicola Newell, Thuy-Tien Ngoc, Ben Butler, James Wilgeroth, Jens Blazer, Spyros Masouros, Anthony Bull, Sara Rankin, Katherine Brown, William G. Proud,
Imperial College London, London, United Kingdom
Understanding the effects of blast on biological systems

08:30 Martin Halecky, Radka Spackova , Jan Paca , Marie Stiborova , Evguenii Kozliak
Institute of Chemical Technology in Prague, Prague, Czech Republic
Biodegradation of nitroglycerin and ethylene glycol dinitrate by free and immobilized cells

08:50 Alon Gany
Technion - Israel Institute of Technology, Haifa, Israel
Boron combustion in propulsion systems

09:10 Aleksandr Smirnov, Oleg Voronko, Boris Korsunsky, Tatyana Pivina,
State Scientific Research Institute of Mechanical Engineering after V.V. Bakhirev, Dzerzhinsk, Nizhny Novgorod Region, Russia
Impact sensitivity investigations of individual explosives: some experimental and calculating approaches

09:30 Tonglai Zhang, Rui Liu, Li Yang, Zunning Zhou
Beijing Institute of Technology, Beijing, China
Researches on vapor pressure and thermal decomposition of low-melting explosives

09:50 David Lempert, Gelii Nechiporenko,
Russian Academy of Science, Chernogolovka, Russia
Dinitroguanidine and some its derivatives as compound of solid composite propellants

10:10 – 10:30 Coffee break

10:30 Manfred A. Bohn,
Fraunhofer Institut für Chemische Technologie (ICT), Pfinztal, Germany
The Prout-Tompkins description of autocatalytic reactions. Problems and the solutions

10:50 Sergey Gerasimov, Aleksandr Bugaev, Vladimir Erofeev, Anna Sirotkina,
Russian Federal Nuclear Center, Sarov, Russia
Realization of power pulse illuminations in aeroballistic and hydrodynamic researches

11:10 Sergey Gerasimov, Aleksandr Bugaev, Vladimir Erofeev
Russian Federal Nuclear Center, Sarov, Russia
Shadowgraph technique and optical initiation for study of solitary longitudinal waves

11:30 Valery Borisenok, Vasheslav Bragunetz, Vladimir Simakov, Alexander Mikhailov, Anna Sirotkina
Sarov Physics-Technical Institute-Branch of the National Research Nuclear University, Sarov, Russia
Influence of Pulsed electric fields in the shock and shock-wave sensitivity of some condensed explosives

11:50 Saniye Yayla
Mechanical and Chemical Industrial Corporation, Ankara, Turkey
Radiometric performances of MTV and Modified MTV compositions for three different wavelength intervals

12:10 Steven Clinton
QinetiQ, Glasgow, United Kingdom
Igniter examination utilizing a modified closed vessel

12:30 – 13:00 CLOSING REMARKS including AWARDING OF PRIZES

Poster program of the 16th NTREM – Thursday April 11th

4. Session

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

Posters should be hung on **Wednesday**, ***April 10th***, before 14:00. Special poster sessions will take place on Thursday (***April 11th***) from 14:00 up to17:00 h. During this time, the authors should be present for discussion at their posters.

P.1 Jonas Šarlauskas,
Vilnius University Institute of Biochemistry, Vilnius, Lithuania
Preparation and properties of 6,7,8,9-tetranitro-3,4-dihydro-2H-1,5-benzodioxepine (TNDX), a potential new high energy material.

P.2 Michael Weyrauther, Thomas Klapötke, Jörg Stierstorfer,
Ludwig-Maximilian University of Munich, Munich, Germany
Energetic ionic derivatives of 5,5'-dinitromethyl-3,3'-bis(1,2,4-oxadiazole)

P.3 Dániel Izsák, Thomas M. Klapötke, Stephan Reuter,
Ludwig-Maximilian University of Munich, Munich, Germany
Preparation and characterization of 5-(5-azido-1H-1,2,4-triazol-3-yl)tetrazol-1-ol and selected energetic salts

P.4 Manuel Joas, Thomas M. Klapötke, Norbert Szimhardt,
Ludwig-Maximilian University of Munich, Munich, Germany
Synthesis and characterization of energetic 5-(1-methylhydrazinyl)-1H-tetrazole copper(II) complexes as laser ignitable explosives

P.5 Bo Wu, Hongwei Yang, Xuehai Ju, Chunxu Lű, Guangbin Cheng,
Nanjing University of Science and Technology, Nanjing, China
Synthesis and characterization of a novel unsymmetric azotetrazole compound with N8 structure

P.6 Vera A. Hartdegen, Thomas M. Klapötke, Andreas Bellan
Ludwig-Maximilian University of Munich, Munich, Germany
Synthesis and characterization of a new energetic polyurethane

P.7 Carolin Pflüger, Thomas M. Klapötke, Markus W. Reintinger
Ludwig-Maximilian University of Munich, Munich, Germany
Low sensitivity secondary explosives based on 5,7-dinitrobenzotriazole and 4,6-diamino-5,7-dinitrobenzotriazole

P.8 Quirin J. Axthammer, Camilla Evangelisti, Thomas M. Klapötke, Burkhard Krumm,
Ludwig-Maximilian University of Munich, Munich, Germany
Synthesis and characterization of 2,2,2-trinitroethylcarbamate and 2,2,2-trinitroethylnitrocarbamate

P.9 Jonas Johansson, Carl Oscarson, Stefan Ek, Patrick Goede, Nikolaj Latypov,
The Swedish Defence Research Agency, Tumba, Sweden
Synthesis of the Ionic Liquid DETRA-D

P.10 Liviu-Cristian Matache, Traian Rotariu, Ioan Safta, Sorin Eșanu, Teodora Zecheru,
Scientific Research Center for CBRN Defense and Ecology, Bucharest, Romania
Munitions neutralisation using EFP-generating devices

P.11 Teodora Zecheru, Liviu-Cristian Matache, Ioan Safta, Petrisor-Zamora Iordache
Scientific Research Center for CBRN Defense and Ecology, Bucharest, Romania
NTO-graphene nanocomposites

P.12 Waldemar A. Trzciński, Mateusz Szala, Wojciech Rejmer,
Military University of Technology, Warsaw, Poland
The study of heat and kinetics of nitration of 1,2,4-triazol-5-one (TO)

P.13 Leonid Fershtat, Igor Ovchinnikov, Nina Makhova
Russian Academy of Sciences, Zelinsky Institute of Organic Chemistry, Moscow,
Synthesis of nitrofuroxans from acrylic acids

P.14 Alexandr Astrat'ev, Dmitry Dashko, Andrei Stepanov,
Special Design and Construction Bureau SDCB "Technolog", Saint Petersburg, Russia
Synthesis, energetic and some chemical properties of new explosive - 3,4-bis(4-nitrofurazan-3-yl)furazan (BNTF)

P.15 Nasrin Nami, Navabeh Nami, Olga Kovalchukova, Ali Sheikh Bostanabad
Peoples" Friendship University of Russia, Moscow, Russia
Synthesis and some properties of 4-(4-Amino-5-thioxo-4,5-dihydro-1H-1,2,4-triazol-3-yl-methylene)-2-phenyl-1H-imidazol-5(4H)-one

P.16 Qiu-Han Lin, Yu-Chuan Li, Wei Liu, Yuan Wang, Si-Ping Pang,
School of Materials Science & Engineering, Beijing Institute of Technology, Beijing,
5-Hydrazinotetrazolium 5-nitrotetrazolate

P.17 Gennady Rudakov, Ivan Kozlov, Natalia Kondakova, Victor Zhilin
Mendeleev University of Chemical Technology, Moscow, Russia
1,2,4,5-Tetrazinyl derivatives of 5-nitro-2,4-dihydro-3H-1,2,4-triazol-3-one

P.18 Niko Fischer, Thomas M. Klapötke, Sanja Matečić Mušanić, Jörg Stierstorfer, Muhammad Suceska
Brodarski Institute, Zagreb, Croatia
TKX-50 (bishydroxylammonium 5,5'-bis(tetrazolate-1N-oxide))

P.19 Ali Sheikh Bostanabad, Svetlana Strashnova, Igor Zyuzin, Adam Stash, Olga Kovalchukova
Peoples" Friendship University of Russia, Moscow, Russia
Structures and spectra of some N-nitroso-N-alkyl hydroxylamine derivatives with the metal ions of different nature

P.20 Mateusz Szala
Military University of Technology, Warsaw, Poland
Recrystallization studies of triaminoguanidinium azotetrazolate

P.21 Joanna Szczygielska , Paweł Maksimowski , Wincenty Skupiński
Warsaw University of Technology, Warsaw, Poland
Recrystallization of hexanitrohexaazaisowurtzitane (HNIW) using halogen-derivative anti-solvents

P.22 Radovan Skácel, Ladislav Říha, Kamil Dudek, Renata Špásová
Explosia, a.s.VÚPCH, Pardubice, Czech Republic
High bulk density bicyclo-HMX and RDX crystal materials for use in plastic explosives, PBX and propellants

P.23 Hamza Turhan, Taner Atalar, Canpolat Özden, Bahaddin Din, Nebi Gül, Emel Yıldız**,** Lemi Türker
TUBITAK Marmara Research Center, Gebze KOCAELI, Turkey
Polyvinylpyrrolidone complexes for RDX coating process

P.24 Zygmunt Matys, Dorota Powała, Andrzej Orzechowski, Andrzej Maranda, Tomasz Cegłowski
Institute of Industrial Organic Chemistry, Warsaw, Poland
Method for obtaining octogen

P.25 Selcuk Gumus,
Yuzuncu Yil University, Department of Chemistry, Van, Turkey
A theoretical study about the formation mechanisms of some explosives

P.26 Sinisa Gacic, Mihael Bucko
Technical Test Center, Belgrade, Serbia
A theoretical study on dendrimeric nitrogen-rich polymers

P.27 Lemi Türker, Taner Atalar, Emel Yıldız,
Middle East Technical University, Ankara, Turkey
A computational study on tautomerism of NTO

P.28 Yuriy N. Matyushin, Tatiana S. Kon'kova, Evgeniy A. Miroshnichenko, Aleksei B. Sheremetev, Dmitriy E. Dmitriev
Russian Academy of Sciences, Semenov Institute of Chemical Physics, Moscow,
Energies of isomerization of di(pyridyl)-azofurazans.

P.29 Huarong Li, Yuanjie Shu
China Academy of Engineering Physics, Mianyang, China
Theoretical insights into the nature of intermolecular interactions in TNT/CL-20 cocrystal and its properties

P.30 Srinivasan Ponnusamy, Kumaradhas Poomani
Periyar University, Salem, India
Bond topological and explosives properties of 2,6-Diamino-3,5-Dinitropyrazine-1-Oxide (LLM-105) energetic molecule : A theoretical study

P.31 Peng Ma, Shunguan Zhu,
Nanjing University of Science and Technology, Nanjing, China
Synthesis ,crystal structure and DFT calculation of an cocrystal energetic materials

P.32 Alexander M. Astachov, Alexander D. Vasiliev
Siberian State Technological University, Krasnoyarsk, Russia
X-Ray structure of a complex 5-nitrimino-1,4H-1,2,4-triazole with DMSO

P.33 Manfred A. Bohn, Camilla Evangelisti, Thomas M. Klapötke,
Fraunhofer Institut für Chemische Technologie (ICT), Pfinztal, Germany
Atomistic simulation study of intermolecular interactions between binders and plasticizers used in propellants and high explosive charges

P.34 Andrzej Papliński, Bogdan Zygmunt,
Military University of Technology, Warsaw, Poland
Assessment of the influence of AlH3 on chemical composition and thermodynamic parameters of combustion products of solid propellants

P.35 Mark Goldman, Alon Gany
Technion - Israel Institute of Technology, Haifa, Israel
Free jet testing of a solid fuel ramjet

P.36 Anatoly Mitrofanov, Edward Aluker, Alexander Krechetov, Anton Zverev, Asya Boyarkina, Anastasia Terenyeva,
Kemerovo State University, Kemerovo, Russia
Thermal mechanism limits of laser initiation of energetic materials

P.37 Alexander Krechetov, Edward Aluker, Vyacheslav Shvayko, Alexander Tupitsyn, Dmitry Maltsev, Nadezhda Poleeva
Kemerovo State University, Kemerovo, Russia
Photochemical and photothermal dissociation at laser initiation of pentaerythritol tetranitrate

P.38 Jiří Pachmáň, Jakub Šelešovský, Martin Kűnzel
University of Pardubice, Czech Republic
Blast wave parameters of small charges: trinitrotoluene (TNT) and urea nitrate (UNi)

P.39 Neil Hamilton , Alex Cross , Andrew P. Jardine , David Williamson
University of Cambridge, Cambridge, United Kingdom
Coefficient of friction between PBXs and an aluminium substrate

P.40 Kastis Krikštopaitis, Lina Misevičienė, Žilvinas Anusevičius, Svatopluk Zeman, Ahmed Elbeih, Narimantas Čėnas, Henrikas Nivinskas, Valė Miliukienė, Martynas Talaikis, Jonas Šarlauskas,
Vilnius University Institute of Biochemistry, Vilnius, Lithuania
Organic cyclic nitramines: investigation of their spectroscopic and electrochemical properties, cytotoxicity and enzymatic reactions

P.41 Liudmila A. Krugliakova, Rudolf S. Stepanov
Siberian State Technological University, Krasnoyarsk, Russia
Influence of structure on the thermal decomposition rate of secondary nitramines

P.42 Sergey P. Smirnov, Vyacheslav Yu. Egorshev
Mendeleev University of Chemical Technology, Moscow, Russia
Kinetic features of NTO/TNT mixtures thermal decomposition

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Evening's program of the 16th NTREM – Thursday April 11th

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

18:30 - 19:30 he visit of the expositions in the East Bohemian Museum

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
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16th SEMINAR - orientation map – town PARDUBICE