

Program

46th International Annual
Conference of the Fraunhofer ICT
June 23 – 26, 2015

Convention Center,
Karlsruhe, Germany

Energetic Materials

Performance,
Safety and
System
Applications

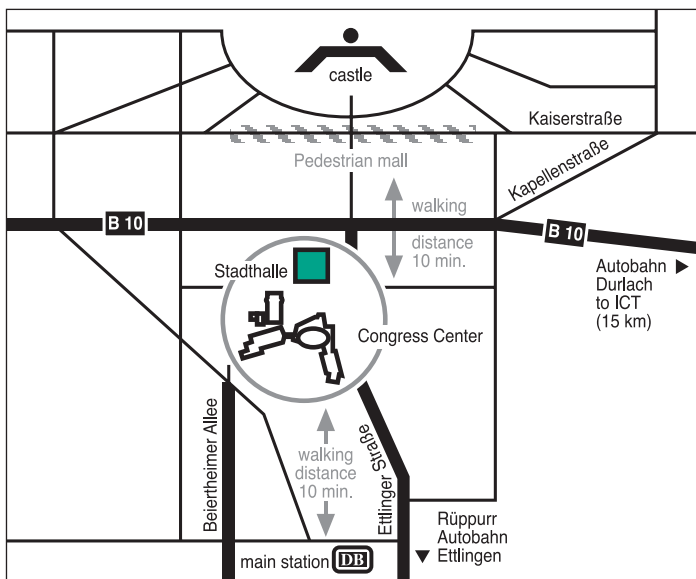


Fraunhofer

ICT

Karlsruhe City Plan

How to find the venue



Karlsruhe is located 120 km south of Frankfurt (Main)/Frankfurt International Airport just beside the Autobahn A5, and is also connected to Frankfurt via the Intercity Express Train ICE.

Additional airports are:

Strasbourg (F) (approx. 100 km) and Stuttgart (D) (approx. 90 km)

Congress Center Karlsruhe

Festplatz 9

76137 Karlsruhe

Germany

46th International Annual Conference of the Fraunhofer ICT

Energetic Materials – Performance, Safety and System Applications

Energetic materials are the key to ensuring safety and performance in many defense and civil applications. Research in this field has consequently been dominated by the following major topics in the last decades: adequate performance of energetic materials and systems, and safety in production, transportation, handling and use during the whole lifetime.

Due to changing threats and requirements, new sophisticated applications are in development in many fields, demanding new or at least suitably adapted generations of propellants, explosives, pyrotechnics and gas generators. Insensitivity of formulations/vulnerability of systems, high performance over the whole temperature range, multiple ignition, environmental influence on lifetime, REACH regulation in Europe, complex charges and igniter systems are only some of the key words.

Theoretical descriptions of related phenomena strongly accelerate development if developed in close correlation to experimental verification. For this reason the meeting will also focus on test methods, modelling and simulation.

The 46th International Annual Conference of the Fraunhofer ICT will act as a forum for world-wide cooperation and provide a platform to review state of the art, to present new ideas or methods and to discuss their contribution to developing a new generation of propellants, explosives, pyrotechnics, gas generators and their system applications.

Chairman of the Conference

Thomas S. Fischer
Fraunhofer ICT, Pfinztal, Germany

General Information

REGISTRATION

Please return the enclosed registration form or register online:
www.ict.fraunhofer.de/jata2015

Registration fees (incl. proceedings, coffee breaks, lunch), depending on arrival of the registration form at the Fraunhofer ICT:

- Registration up to **June 8:**
EURO 990,- (incl. 19 % VAT)
- Registration up to **June 15:**
EURO 1.250,- (incl. 19 % VAT)

Participation cannot be guaranteed for registrations arriving after June 15, 2015.

The fee must be paid **upon receipt of the invoice** by remittance to the account given on the invoice.

CANCELLATION POLICY

EURO 400,- will be charged for cancellations after **June 15, 2015**.
No-shows will be charged with **EURO 800,-**.

ACCOMMODATION

HORE Hotel Reservation
Bockstalstraße 20
76327 Pfinztal (Kleinsteinbach)
Germany

Phone +49 (0) 7240 / 9445-850
Telefax +49 (0) 7240 / 9445-852
e-mail: HHRUdoHamm@t-online.de

An application form is enclosed.

Online:
www.h-h-reservation.de/jt2015.html

CONFERENCE OFFICE

Foyer of the Weinbrenner-Saal.

Open from Tuesday, June 23, 16.00 h till Friday, June 26, 14.30 h **during the conference** and may be reached by

Phone +49 (0) 721 / 37 20 – 57 80
or +49 (0) 721 / 37 20 – 57 81
Fax +49 (0) 721 / 37 20 – 59 50

CHECK IN / WELCOME RECEPTION

Please check in at the conference office on **Tuesday, June 23 between 16.00 and 20.00 h**. All participants are cordially invited to the **Welcome Reception** on the same day, starting at 18.00 h in the foyer of the Stadthalle.

CONFERENCE LANGUAGE

English

PROCEEDINGS

One copy is included in the registration fee. Additional copies cost **EURO 99,-** (Subscription price during the conference EURO 70,-).

GET TOGETHER AND VISIT OF THE INSTITUTE

The Fraunhofer ICT can be visited on **Thursday, June 25** in the evening. There will be several short tours of the Institute, accompanied by a **get-together party** with draught beer, barbecue and fireworks (after sunset). Please **mark on your registration form whether you wish to participate**.

Tuesday, June 23

18.00 – 20.00 **Welcome Reception**
Foyer of the Stadthalle

Wednesday, June 24

09.00 **Welcome Address and Opening**

1st Session – Applications

Session Chair: R. Doherty
NSWC, Indian Head, USA

- 09.20 **V1 SPECTRALLY MATCHED INFRARED FLARE COMPOSITIONS WITH STRUCTURED FLAMES**
A. Hahma
Diehl BGT Defence, Röthenbach, D
- 09.40 **V2 NEW PYROTECHNIC SIGNAL FLARE COMPOSITIONS BASED ON CHEAP, ESTABLISHED AND ENVIRONMENTALLY ACCEPTABLE INGREDIENTS**
E.-C. Koch
TU Kaiserslautern, D / Cranfield University, Shrivenham, GB
J.J. Sabatini
US Army Research Laboratory, Aberdeen Proving Ground, USA
J.C. Poret
RDECOM-ARDEC, Picatinny Arsenal, USA
- 10.00 **V3 NEW GUN PROPELLANT TECHNOLOGIES FOR IMPROVED SAFETY AND INCREASED PERFORMANCE**
B. Vogelsanger, A. Huber, D. Antenen
Nitrochemie Wimmis AG, Wimmis, CH
- 10.20 **V4 NEW ENERGETIC MATERIALS – EXPLOSIVE COMPOSITION BASED FOX-7**
C. Coulouarn, P. Lamy-Bracq, D. Barres
Nexter Munitions, Bourges, F
- 10.40 **Coffee Break**

2nd Session – Modeling

Session Chair: P. Goede
FOI, Tumba, SE

- 11.10 **V5** **DETERMINATION OF THERMAL HAZARD FROM DSC MEASUREMENTS – INVESTIGATION OF SELF ACCELERATING DECOMPOSITION TEMPERATURE (SADT) OF AIBN**
B. Roudit, M. Hartmann
AKTS Inc., Siders, CH
P. Folly, A. Sarbach
armasuisse, Thun, CH
P. Brodard, R. Baltensperger
University of Applied Sciences of Western Switzerland,
Fribourg, CH
- 11.30 **V6** **ASSESSMENT OF DESCRIPTION QUALITY OF MODELS BY INFORMATION THEORETICAL CRITERIA BASED ON AKAIKE AND SCHWARZ-BAYES APPLIED WITH STABILITY DATA OF ENERGETIC MATERIALS**
M.A. Bohn
Fraunhofer ICT, Pfintzal, D
- 11.50 **V7** **THE GROWING IMPACT OF GRAIN SCALE MODELING**
C.D. Yarrington, R.R. Wixom
Sandia National Laboratories, Albuquerque, USA
- 12.10 **V8** **A COMPLETE EQUATION OF STATE FOR TNT-AIR MIXTURES**
A.L. Kuhl, D. Grote, S. Bastea
Lawrence Livermore National Laboratory, Livermore, USA
J.B. Bell
Lawrence Berkeley National Laboratory, Berkeley, USA
- 12.30 **Lunch Break**

3rd Session – Combustion & Explosions

Session Chair: A. L. Kuhl
Lawrence Livermore National Laboratory, USA

- 14.00 **V9** **EFFECT OF ALUMINIUM COMBUSTION ON TNT AIR BLASTS**
E. Fedina, C. Fureby
FOI, Tumba, SE
- 14.20 **V10** **SOLID STATE FUEL-AIR EXPLOSIVES WITH ENHANCED POWER AND STABILITY**
S. Kolev, T. Tzonev
SURT Technologies Ltd., Sofia, BG

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- 14.40 **V11 EFFECT OF IRON AND BORON POWDERS ON IGNITION AND COMBUSTION OF ALUMINIZED COMPOSITE SOLID PROPELLANTS**
A. Korotkikh, V. Arkhipov, K. Slyusarskiy, V. Zarko
Tomsk Polytechnic University, Tomsk, RUS
O. Glotov, A. Kiskin
Institute of Chemical Kinetics and Combustion RAS,
Novosibirsk, RUS
- 15.00 **V12 INNOVATIVE NITROGEN-DOPED BORON PROPELLANTS**
T. Manning, K. Klingaman, M. Fair, R. Crownover, J. Bolognini,
V. Panchal, E. Rozumov
US Army RDECOM-ARDEC, Picatinny Arsenal, USA
P.H. Matter
Ohio State University, USA
S. Sopok
Bennet Laboratory, Watervillet, USA
- 15.20 **V13 COMBUSTION EFFICIENCY OF DUCTED ROCKETS FOR MARS USING Mg-Al/TEFLON/VITON**
A. Okubo, T. Kuwahara
Nihon University, Funabashi Chiba, JAP
- 15.40 **Coffee Break**
- 4th Session – Safety**
Session Chair: R.L. Simpson
Lawrence Livermore National Laboratory, USA
- 16.10 **V14 PARAMETERS REQUIRED FOR ENVIRONMENTAL ASSESSMENT OF EXPLOSIVES**
M. Andrews, R. Stonhill
MSIAC, Brussels, B
- 16.30 **V15 STUDY AND PREDICTION OF THE TOXICITY OF HIGH-ENERGY MOLECULES**
J.A. Chemelle, C. Alliod, R. Terreux
CNRS, Lyon, F
G. Jacob, J. Stankiewicz
Herakles, Vert le Petit, F
J. Guitton, L. Payen-Gay
ISPB, Lyon, F
- 16.50 **V16 SAFE HANDLING OF HIGHLY SENSITIVE PEROXIDE EXPLOSIVES**
J. Oxley, J. Smith
University of Rhode Island, Kinston, USA

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- 17.10 **V17 DESENSITIZATION OF ENERGETIC MATERIALS BY GEL ENTRAPMENT**
A. Weitz, L. Gottlieb, A. Tsoglin, H. Shulman, G. Korogodski,
D. Grinstein
RAFAEL Advanced Defence Systems, Haifa, IL
- 17.30 **V18 DAMAGE IN COMPOSITE PROPELLANTS RESULTING FROM VIBRATORY LOADS**
A. Rix
QinetiQ Fort Halstead, Sevenoaks, GB
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Thursday, June 25

5th Session – Mechanical Behaviour

Session Chair: H. Östmark
FOI, Tumba, SE

- 09.00 **V19 ADHESION AND COHESION PROPERTIES IN PBX AND COMPOSITE PROPELLANTS – COMPUTATIONAL RESULTS AND EXPERIMENTAL ASPECTS**
M. Nardai, M. Bohn
Fraunhofer ICT, Pfintzal, D
- 09.20 **V20 EFFECT OF POLYDISPERSITY ON THE MECHANICAL BEHAVIOUR OF A SOLID PROPELLANT**
P.-A. Toulemonde, J. Diani, P. Gilormini
CNRS, Paris, F
N. Desgardin
Safran Herakles, Vert le Petit, F
- 09.40 **V21 IN-SITU TENSILE TESTING OF PROPELLANT SAMPLES WITHIN SEM**
M. van Ramshorst, G.L. di Benedetto, W. Duvalois, P.A. Hooijmeijer, A. van der Heijden,
W. de Klerk
TNO, Rijswijk, NL
- 10.00 **V22 THE EFFECT OF PLASTICIZERS ON THE GLASS-TO-RUBBER BEHAVIOR OF DESMOPHEN®2200 BASED ELASTOMERS USED FOR COMPOSITE PROPELLANTS**
M. Ferrapontoff Lemos
Brazilian Navy Research Institute, Rio de Janeiro, BR /
Fraunhofer ICT, Pfintzal, D
M.A. Bohn
Fraunhofer ICT, Pfintzal, D

10.20 **V23 THE EFFECTS OF NANO-TATB ON THE CREEP PROPERTIES OF TATB-BASED POLYMER BONDED EXPLOSIVE**
Congmei Lin, Jiahui Liu, Shijun Liu, Guangsong He,
Zhong Huang, Feiyan Gong, Guiyu Zeng
CAEP ICM, Mianyang, PRC

10.40 **Coffee Break**

11.10 **Poster Session**

12.30 **Lunch Break**

6th Session – Characterization

Session Chair: A. S. Cumming
University of Edinburgh, GB

14.00 **V24 EXPERIMENTAL AND THEORETICAL COMPARISON OF A SYSTEMATIC VARIETY OF THERMITE COMPOSITIONS**
V. Weiser, W. Becker, E. Roth, S. Kelzenberg, K. Sachsenheimer
Fraunhofer ICT, Pfinztal, D

14.20 **V25 DEFLAGRATION-DETONATION TRANSITION OF SENSITIZED MIXTURES OF AMMONIUM OR UREA NITRATES AND AN ENERGETIC THERMOPLASTIC ELASTOMER**
J. Quaresma, M. Pineiro, J. Campos
LEDAP, Coimbra, PT
T. Keicher, L. Deimling, H. Krause
Fraunhofer ICT, Pfinztal, D

14.40 **V26 LASER DEFLAGRATION-TO-DETONATION IN KETO-RDX DOPED WITH RESONANT HOLLOW GOLD NANO-SHELLS**
P.R. Wilkins
Lawrence Livermore National Laboratory, Livermore, USA

15.00 **V27 INFLUENCE OF THE CHEMICAL COMPOSITION AND GEOMETRY OF NITROCELLULOSE PROPELLANTS ON ITS SENSITIVITY TO THE FIRING TEMPERATURE**
L. Jeunieu, M.H. Lefebvre
Royal Military Academy, Brussels, B
A. Dejeaifve, R. Dobson, N. Fonder
PB Clermont SA, Engis, B

15.20 **V28 ANALYSIS OF THE CHEMICAL MODIFICATION OF PROPELLANT AND ITS IMPACT ON PERFORMANCE**
G. Warrender
Australian Munitions, Mulwala, AUS

15.40 **V29 THE EFFECT OF CHEMICAL COMPONENTS AND DENSITIES ON THE CLUSTERS EVOLUTION DURING THE EARLIER THERMAL DECOMPOSITIONS OF TNT, TATB, NM, HMX AND PETN**

Yushi Wen, Xinping Long, Kuiguang Yao, Ming Li,
Xianggui Xue, Chaoyang Zhang
CAEP ICM, Mianyang, PRC

16.00 **Coffee / Refreshments**

17.00 **Bus Departure from Conference Hall to Fraunhofer ICT**

17.30 **Get-together Barbecue Party**
Some **Guided Tours** of Fraunhofer ICT

22.30 **Fireworks**

Bus transfer to hotels, Karlsruhe City and Main Station will be available (starting 19.00 h during the whole evening).

**We would like to thank Zink-Feuerwerk GmbH,
74389 Cleebornn, Germany for sponsoring the fireworks.**

Friday, June 26

7th Session – Materials & Characterization

Session Chair: W. de Klerk
TNO, Rijswijk, NL

- 09.00 **V30 NEW APPLICATION OF METAL-ORGANIC FRAMEWORKS (MOFS): SUPER-HIGH-ENERGY MATERIALS**
Shenghua Li, Jichuan Zhang, Hui Su, Yuan Wang, Siping Pang
Beijing Institute of Technology, Beijing, PRC
- 09.20 **V31 3D POROUS MICRO/NANO HNS WITH HIERARCHICAL STRUCTURE: CONTROLLABLE SUPRAMOLECULAR ASSEMBLY AND DISASSEMBLY**
Yu Liu, Hongli Zhang, Shichun Li, Jinshan Li, Hui Huang
CAEP ICM, Mianyang, PRC
Zeshan Wang
Nanjing University of Science and Technology, Nanjing, PRC
- 09.40 **V32 PRODUCTION, CHARACTERIZATION OF BIMETAL NANOPARTICLES AND APPLICATION FOR HEMS**
A. Vorozhtsov
Institute for Problems in Chemical and Energetic Technologies,
RUS / National Tomsk State University, RUS
M. Lerner
Institute of Physics Strength and Material Science, RUS /
National Tomsk Polytechnical University, RUS
Wen Dongsheng
University of Leeds, GB
- 10.00 **V33 STUDYING THE PERCENTAGE EFFECTS OF ALUMINUM ON THE PERFORMANCE OF DIFFERENT ENERGETIC MATERIAL**
A. E. Hawass, H.E. Mostafa, A.E. Elbieh
Egyptian Armed Forces, Cairo, ET
E.W. El-Dakhkhni
McMaster University, Hamiton, CAN
- 10.20 **V34 ENHANCED PROPELLANT PERFORMANCE VIA ENVIRONMENTALLY FRIENDLY CURABLE SURFACE COATING, PART 1**
T. Manning, J. Wyckoff, K. Klingaman, V. Panchal, E. Rozumov,
J. Bolognini
US Army RDECOM-ARDEC, Picatinny Arsenal, USA
M. Wang Young, S. Patel
Polymer Processing Institute, Newark, USA
- 10.40 **Poster Awards**
- 11.00 **Coffee Break**

8th Session – Processing

Session Chair: J. Campos
University of Coimbra, P

- 11.30 **V35 TRACKING CRYSTALLIZATION AND CONTINUOUS PRODUCTION OF HIGH EXPLOSIVES BY SPRAY FLASH EVAPORATION**
M. Klaumünzer, F. Pessina, D. Spitzer
ISL, Saint Louis, F
- 11.50 **V36 DEVELOPMENT AND INDUSTRIALISATION OF THE ROXEL EMULSION MEDIATED SPHERIDISATION TECHNIQUE FOR AMMONIUM DINITRAMIDE**
E. Mansell
Roxel, Summerfield, GB
- 12.10 **V37 PROCESSING OF ADN-PARTICLES**
M. Liljedahl, M. Skarstind, A. Lindborg
FOI, Tumba, SE
- 12.30 **V38 SCALE-UP STUDIES OF A NEW STABILIZER FOR NITROCELLULOSE**
P. Goede, P. Krumlinde, S. Ek, M. Skarstind
FOI, Tumba, SE
E. Tunestal, A. Hafstrand
Eurenco Bofors AB, Karlskoga, SE
- 12.50 **V39 NANOPARTICLE TRIAMINOTRINITROBENZENE FABRICATED BY CARBON DIOXIDE ASSISTED NEBULIZATION WITH A BUBBLE DRYER**
P.J. Hotchkiss, R.R. Wixom, A.S. Tappan, D.M. Rosenberg, M.D. Zelenok
Sandia National Laboratories, Albuquerque, USA
- 13.10 **V40 PREPARATION OF SUBMICRON-SIZED PROPELLANTS BY SPRAY FLASH EVAPORATION**
A. Le Brize, F. Schnell, D. Spitzer
ISL, Saint-Louis, F
- 13.30 **Closing Remarks**
- 13.40 **Lunch**

Poster Program

Posters will be presented during the whole conference. A special Poster Session will take place on **Thursday, June 25, 11.10 – 12.30 h**. During this time authors should be present for discussion at their posters in the foyer of the Conference Hall.

- P 41 STUDY ON THE COMBUSTION FLAME OF CL-20 PROPELLANTS**
Jiang-Ning Wang, Xue-Li Chen, Xiu-Duo Song, Jiang-Feng Pei
Xian Modern Chemistry Research Institute, Xian, PRC
- P 42 STUDY ON THE BREAKUP OF THE LIQUID INTERFACE UNDER THE EXPLOSION EFFECT**
Geng-ran Liu
State Key Laboratory of NBC Protection for Civilian, Beijing, PRC
- P 43 THE STRAIN EFFECT ON THE INTERFACIAL ADHESION BETWEEN THE FILLER AP AND THE BINDER MATRIX HTPB**
Zhang Xinggao, Geng-ran Liu, Pai Wu, Hong-xin Shi, Xiu-juan Ren
State Key Laboratory of NBC Protection for Civilian, Beijing, PRC
- P 44 STUDY ON THE FRIABILITY OF SOLID PROPELLANT**
Jun Li, Chao-yang Zhu, Xiao-bin Zhao, Ai-min Pang, Li-Guo Cheng, Chao Qin, Jing Su, Hong-bo Guan
Hubei Institute of Aerospace Chemotechnology, Xiangyang, PRC
Hua Wang
Mine Construction Research Institute, Beijing, PRC
- P 45 HIGH PURITY AND HIGH CRYSTALLINITY OF LLM 105 EXPLOSIVE PREPARED WITH CLOSE SPACE SUBLIMATION METHOD**
Yu Weifei, Chi Yu, Zhang Yong, Liao Longyu, Hao Shilong
CAEP ICM, Mianyang, PRC
- P 46 RHEOLOGICAL PROPERTIES OF ENERGETIC CONCENTRATED SUSPENSIONS USED AS MELT-CAST FORMULATIONS FOR AMMUNITION**
F. Sta, P. Lamy
Nexter Munitions, Bourges, F
C. Lemaitre, P. Marchal
GEMICO, Nancy, F
- P 47 EFFICIENT METHOD FOR THE SYNTHESIS OF GLYCIDYL AZIDE POLYMERS USING MICROWAVE (MW)**
A.D. Kshirsagar, D.G. Hundiwale, P.P. Mahulikar
North Maharashtra University, Jalgaon, IND
- P 48 A NEW UNIFIED DETONATION MODEL**
Shaoming Hu, F. Richard Yu
Carleton University, Ottawa, CAN
- P 49 THEORETICAL AND EXPERIMENTAL STUDY ON THE STRUCTURE AND PERFORMANCE OF N-AMINOPOLYNITRODIAZOLES**
Jun Wang, Tao Jiang, Qing Ma, Hua-rong Li, Mei Jing, Jing-lun Huang
CAEP ICM, Mianyang, PRC

Poster Program

- P 50 THERMAL STABILITY OF AMMONIUM PERCHLORATE WITH DIFFERENT QUALITY GRADE**
Kibong Lee, Jin Seuk Kim
ADD, Yuseong, KOR
Sang Keun Han
Hanwha R&D Center, Daejeon, KOR
- P 51 DESIGN AND TEST RESULTS OF NEW INSENSITIVE ENERGETIC PLASTICIZER FOR CASTABLE PBX WITH HTPB BINDER SYSTEM**
Jin Seuk Kim, Seung Hee Kim, Kibong Lee
ADD, Daejeon, KOR
- P 52 INVESTIGATION OF MECHANICAL PROPERTIES AND SWELLING OF BINDERS AND ENERGY MATERIALS ON THE BASIS OF SCALE-FREE POLYMER NETWORKS**
D.V. Pleshakov
Mendeleyev University, Moscow, RUS
- P 53 MICROSTRUCTURE OF ENERGETIC BLOCK COPOLYMERS INVESTIGATED BY MEANS OF X-RAY DIFFRACTION**
M. Herrmann, U. Förter-Barth, T. Keicher
Fraunhofer ICT, Pfinztal, D
- P 54 PREPARATION OF α -AIH₃ USING TRIMETHYLPHENYLAMMONIUM CHLORIDE-ALUMINIUM CHLORIDE IONIC LIQUID AS SOLVENT**
Zhao-Yang Zhu, Jun Li, Ai-min Pang, Yu Ma
Hubei Institute of Aerospace Chemotechnology, Xiangyang, PRC
Yu-Dong Li, Yu-Lin Yang
Harbin Institute of Technology, Harbin, PRC
- P 55 LABORATORY PRODUCTION OF MgB₂ BY A THERMAL EXPLOSION OF MECHANOACTIVATED Mg-B MIXES**
V.E. Zarko
Voevodsky Institute of Chemical Kinetics and Combustion, Novosibirsk, RUS / Tomsk State University, RUS
M.A. Korchagin
Institute of Solid State Chemistry and Mechanochemistry, Novosibirsk, RUS
S.M. Fomenko, Z.A. Mansurov, A.N. Alipbaev
Institute of Combustion Problems, Almaty, KAZ
- P 56 MICROWAVE RESONATOR METHOD TO MEASURE TRANSIENT MASS GASIFICATION RATE OF CONDENSED SYSTEMS**
V.V. Perov, V.E. Zarko
Voevodsky Institute of Chemical Kinetics and Combustion, Novosibirsk, RUS
A.S. Zhukov
Tomsk State University, RUS
- P 57 TORSION MODEL AND VALIDATION BASED ON REAL CONTACT AREA**
Chenzhi Tang
CAEP ICM, Mianyang, PRC

Poster Program

- P 58 SYNTHESIS AND CHARACTERIZATION OF DERIVATIVES OF TRIAZOLE**
Woonghee Lee, Minjun Kim
Hanwha Corporation, Daejeon, KOR
Youngchul Park
Agency for Defense Development, Daejeon, KOR
- P 59 TOUGHENING AND DESENSITIZATION MECHANISM OF COMPOSITION B**
Dayuan Gao, Baohui Zheng, Maoping Wen, Wen Wen, Lingang Lan, Qian Huang
CAEP ICM, Mianyang, PRC
- P 60 EXPERIMENTAL STUDY OF UNDERWATER EXPLOSION BY ALUMINIZED EXPLOSIVE**
Yuan Chen, Da Bin Liu, Sen Xu, De Jun Wu
Nanjing University of Science and Technology, Nanjing, PRC
- P 61 REVIEW ON UNDERWATER EXPLOSION**
A.E. Hawass, H.E. Mostafa, A.E. Elbieh
Egyptian Armed Forces, Cairo, ET
E.W. El-Dakhakhni
McMaster University, Hamilton, CAN
- P 62 RESEARCH ON GAP-BASED POLYURETHANE ELASTOMERS BLEND TOUGHENED BY NC**
Huailong Zhang, Leqin Xiao, Feiyun Chen, Weiliang Zhou
Nanjing University of Science and Technology, Nanjing, PRC
- P 63 EFFECT OF NEW LIQUID DOUBLE-CORE FERROCENE DERIVATIVES IN FINE AP AND AP/AI/HTPB PROPELLANT**
Ben-zheng Jiang, Wei Zhang, Tong Bao, Xing Zhou, Zhibing Song, Lei Chen
National University of Defence Technology, Changsha, PRC
Jun Yang, Yan Yu
Shanghai Institute of Organic Chemistry, Shanghai, PRC
- P 64 THE MECHANICAL REINFORCEMENT OF TNT SYSTEM BY HNS: A MOLECULAR SIMULATION STUDY**
Wen Qian, Huarong Li, Qing Ma
CAEP ICM, Mianyang, PRC
Yuanjie Shu
Xian Modern Chemistry Research Institute, Xian, PRC
- P 65 APPLICATION OF ACOUSTOELASTICITY IN STUDYING COMPRESSION STRESS STATE IN PBX**
Yao Xu, Zhan-feng Yang, Hai-qiang Zhou, Wei-bin Zhang
CAEP ICM, Mianyang, PRC
- P 66 KINETICS AND MECHANISM OF THERMAL DECOMPOSITION OF R-gem-DINITROETHYL ESTERS OF N-NITRAMINOACETIC ACID ON THE BASIS OF 3-NITRO-1,2,4-TRIAZOLE**
L.A. Kruglyakova, R.S. Stepanov
Siberian State Technological University, Krasnoyarsk, RUS

Poster Program

- P 67 CRACK-HEALING BEHAVIOR OF PBX AT LOW-PRESSURE HEAT TREATMENT**
Kezhen Lv, Qiong Lan, Chao Han, Feng Zhang, Xueping Cheng
CAEP ICM, Mianyang, PRC
- P 68 PREPARATION AND PERFORMANCE OF A NEW MELT CAST BOOSTER FORMULATION**
Hequn Li, Chongwei An, Jingyu Wang, Bidong Wu, Yanju Wei, Binshuo Yu, Xiaomu Wen, Baoyun Ye
North University of China, Taiyuan Shanxi, PRC
- P 69 PREPARATION AND PERFORMANCE OF ENERGETIC THERMOPLASTIC ELASTOMERS BASED ON POLY (GLYCIDYL AZIDE)**
Yiwen Hu, Leqing Xiao, Feiyun Chen, Weiliang Zhou
Nanjing University of Science and Technology, Nanjing, PRC
- P 70 MORPHOLOGY AND BURNING BEHAVIOR OF MODIFIED BENITE FOAMED BY SUPERCRITICAL CARBON DIOXIDE**
Yajun Ding, Sanjiu Ying
Nanjing University of Science and Technology, Nanjing, PRC
- P 71 MOISTURE INFLUENCE IN POLYURETHANE OBTAINED FROM REACTION OF GLYCIDYL AZIDE POLYMER WITH TOLUENE DIISOCYANATE**
C.B. Dall Agnol, R.C. Lazzarini Dutra, S. Navarro Cassu
Instituto Tecnológico da Aeronautica, Sao Jose dos Campos, BR
- P 72 EFFECT OF CURVATURE-DEPENDENT SPEED ON DETONATION SHOCK DYNAMICS MODELING BY GENERALIZED FINITE DIFFERENCE METHOD**
Dai Jiakun, Chen Yongli, Huang Kuibang, Yu Hong
Institute of Applied Physics and Computational Mathematics, Beijing, PRC
- P 73 STUDY OF MECHANICAL AL-CHARACTERISTICS OF AI-AI203 COMPOSITES PRODUCED BY MEANS OF SHOCKWAVE COMPACTION UNDER THE CONDITIONS OF SHOCKWAVE DEFORMATION AND FRACTURE**
I. Zhukov, V. Promakhov, S. Vorozhtsov, A. Vorozhtsov, A. Zhukov
National Research Tomsk State University, Tomsk, RUS
G. Garkushin, S. Razorenov
Institute of Problems of Chemical Physics RAS, RUS
- P 74 MODELLING OF PHYSICAL PROCESSES IN HYBRID ROCKET MOTORS**
S.S. Bondarchuk, A.B. Vorozhtsov, A.S. Zhukov, I.A. Zhukov, V.V. Promakhov
National Research Tomsk State University, Tomsk, RUS
- P 75 ENERGETIC BORIDES: COMBUSTION SYNTHESIS AND PROPERTIES**
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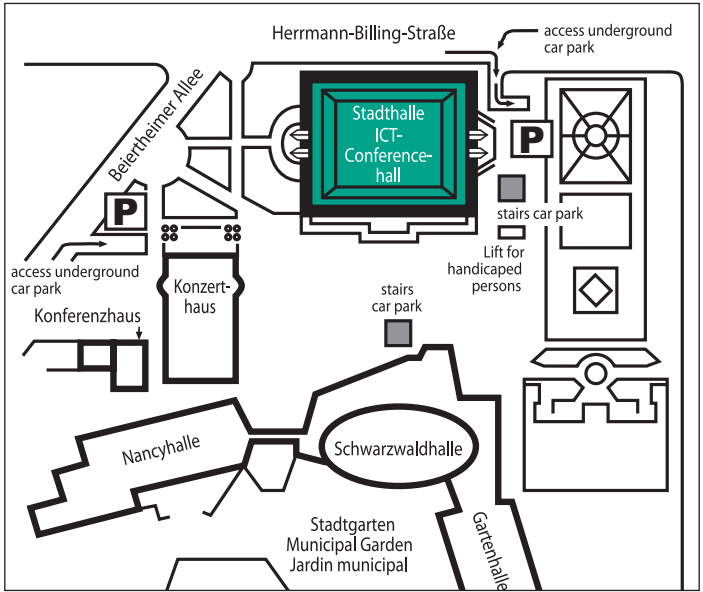
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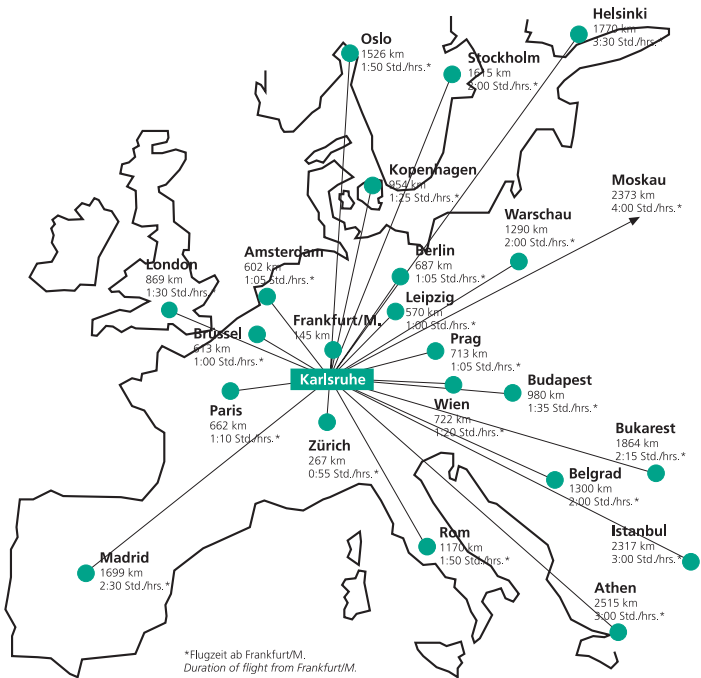
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