

Laboratory of High Energy Materials



Head

Andrzej Książczak

Current research

- Development of effective solid heterogeneous and homogeneous propellants
- Formulation of gun propellants
- Analysis and characterization of hazardous materials
- Criminality
- Synthesis of high energy materials

Staff

Paweł Maksimowski
Wincenty Skupiński
Wojciech Pawłowski
Waldemar Tomaszewski
Tomasz Gotofit
Katarzyna Cieślak

Current PhD students

Katarzyna Cieślak
Angelika Zygmunt
Katarzyna Gańczyk
Bartosz Zakościelny
Anna Kasztankiewicz

Former PhD students

Tomasz Gotofit
Dariusz Ostaszewski
Joanna Adamiak
Joanna Szczygielska
Anna Zalewska

Selected publications

Maksimowski P., Szczygielska J., Skupiński W., *Comparison of the Crystals Obtained by Precipitation of CL-20 with Different Chemical Purity*, Propellants, Explosives, Pyrotechnics, 38, 791, 2013

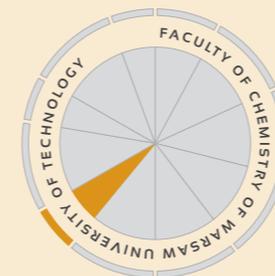
Maksimowski P., Golofit T., *4,10-Dinitro-2,6,8,12-Tetraoxa-4,10-Diazatetracyclo[5.5.0.0.5.0.0.3.11] Dodecane Synthesis*, Journal of Energetic Materials, 31(3), 224, 2013

Golofit T., Maksimowski P., Biernacki A., *Optimization of Potassium Dinitramide Preparation; Propellants, Explosives, Pyrotechnics*, 38, 261, 2013

Adamiak J., Kalinowska-Alichniewicz D., Maksimowski P., Skupiński W., *Characterization of a Novel Solid Catalyst, $H_3PO_4/MoO_3/SiO_2$, and Its Application in Toluene Nitration*, Journal of Molecular Catalysis A: Chemical, 351, 62, 2011

Maksimowski P., Duda M., Tomaszewski W., *2-Acetyl-4,6,8,10,12-Pentanitro-Heksaażaisowurtzitan (PNAIW) Preparation and Properties*, Propellants Explosives Pyrotechnics, 36, 320, 2011

Zalewska A., Pawłowski W., Tomaszewski W., *Limits of Detection of Explosives as Determined with IMS and Field Asymmetric IMS Vapour Detectors*, Forensic Science International, Vol 226, Issue 1, 168, 2013



Research profile

Development of technology for the production of components for propellants
Thermal analysis of hazardous materials
Trace analysis in criminology
Granulation of nitrocellulose
Formulation of propellants

Collaboration

Chemical Works "NITRO-CHEM" S.A., Bydgoszcz (Poland)
Special Production Plant "Pronit", Pionki (Poland)
Special Production Plant "Gamrat", Jastó (Poland)
Institute of Industrial Organic Chemistry, Warsaw (Poland)

Scientific Awards

1st Grade Award in the second contest for the best scientific work and research in the area of defense, for a research paper on *Development of modern technology, high-energy and insensitive explosives in the large laboratory scale*. The work was carried out within the consortium consisting of Military University of Technology, Warsaw University of Technology, Plant "Nitrochem" in Bydgoszcz, Bumar.

Research equipment

- Scanning microcalorimeter DSC Q2000 TA Instruments
- Spectrophotometer Nicolet FTIR 6700
- Gas chromatograph GC-MS Agilent 5975C Series GC / MSD
- HPLC Agilent 1260 Infinity
- Helium pycnometer AccuPyc II 1340

