

MILITARY UNIVERSITY OF TECHNOLOGY



VISIT OF THERSAN MILITARY ACADEMY

8 MARCH 2018

Foundation of MUT ... 1951

The first graduates 1953

The first holders of Ph.D. degree 1954



Organization of engineering studies for technical staff of the Polish Armed Forces
(100-200 graduate students per year) \Leftrightarrow officers school



Laboratory lecture – 1953



Commissioning ceremony – 1956

Transformation from officers school into military technical university:

- increasing number of academic staff (holders of national professor's degree and Ph.D. degree);
- development of graduate and postgraduate studies;
- increasing level of scientific researches.



First Polish lasers designed in MUT:

HeNe (*Helium-Neonium*) ... 1963

Al₂ O₃ (*Ruby*) 1963

CO₂ (*Carbon dioxide*)..... 1966

TEA 1971

(*TEA = Transelectrical atmosphere*)

**the first ophthalmologic laser
in Europe 1965**

Military University of Technology – one of the largest military universities in the world and the leading research centre of military technologies in Poland:

- 500 - 700 graduates/year
 - 40 - 80 doctors/year
 - 300 - 400 scientific publications/year
 - 200 - 300 research projects/year
- scientific specializations (automatic command systems, radars, microwave technologies, laser technologies, infrared detectors, liquid crystals, military communication equipments, electronic warfare devices, military and industrial high explosives, NBC weapons protection, special materials, military logistics)

commissioning ceremony - 1982



classes in laboratory - 1995



Transformation into a military-civilian university:

- beginning of civilian part-time studies – 1997
- beginning of civilian full-time studies – 2002
- decreasing number of military students – 2003
- parliament's act transforming MUT into a military-civilian university of technology – 2003
- reactivation of the military students – 2006
- commissioning ceremony – 2017

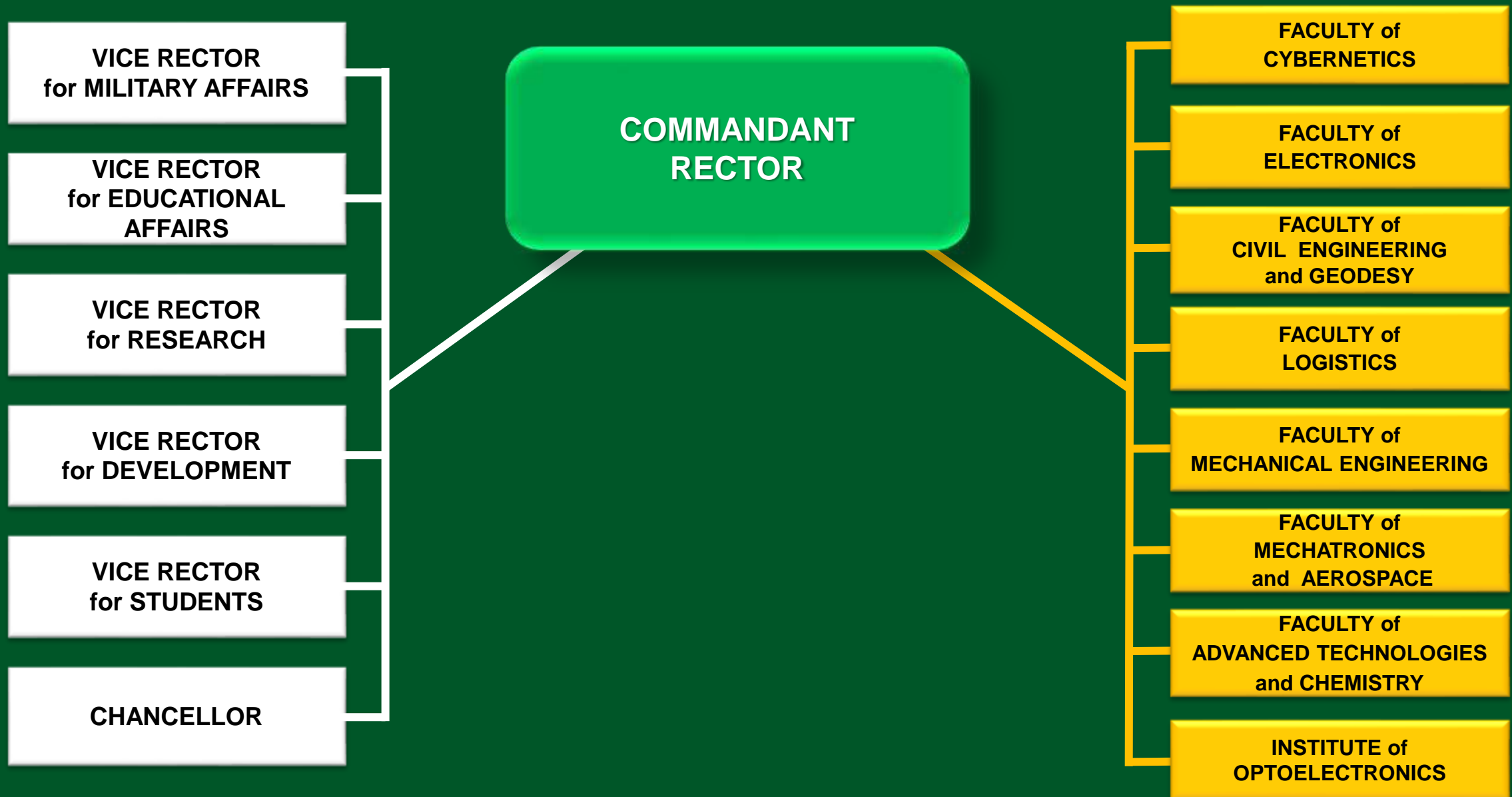


matriculation of military and civilian students - 2017



last commissioning ceremony - 2017

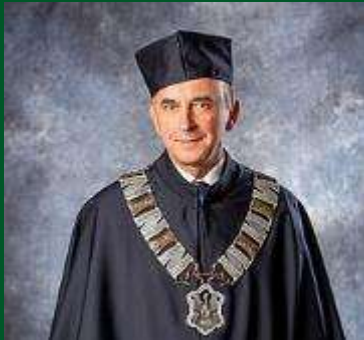
NEW MUT's STRUCTURE



MUT Authorities



Commandant-Rector
Col. Tadeusz SZCZUREK, DSc.; MUT prof.



Vice-Rector for Educational Affairs
Zdzisław BOGDANOWICZ, DSc.; MUT prof.



Vice-Rector for Military Affairs
Col. Artur KRÓL, DSc.



Vice-Rector for Research
Prof. Krzysztof CZUPRYŃSKI, DSc.

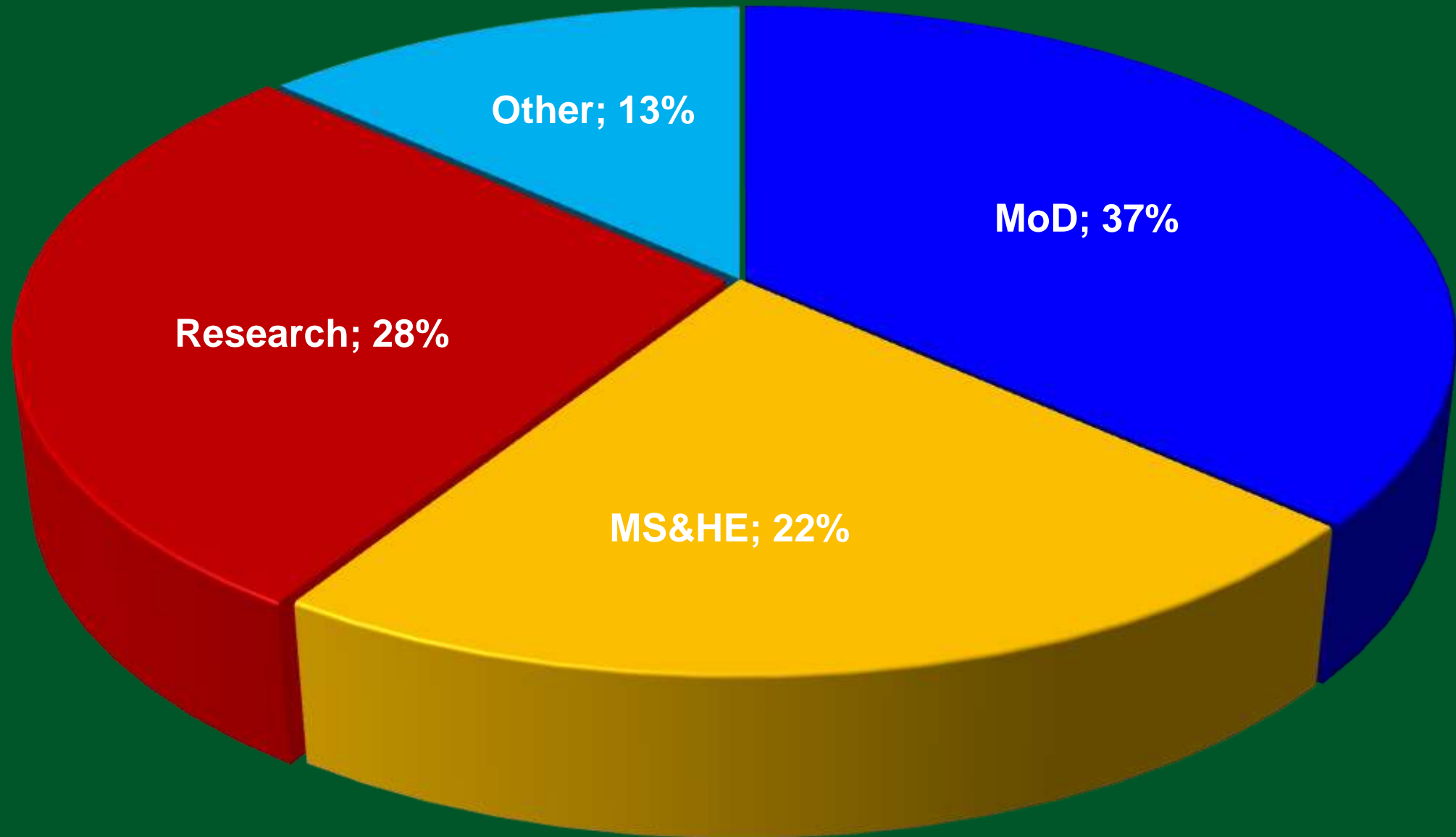


Vice-Rector for Students
Marzena TYKARSKA, DSc.; MUT prof.



Vice-Rector for Development
Lucjan ŚNIEŻEK, DSc.; MUT prof.

MUT's BUDGET

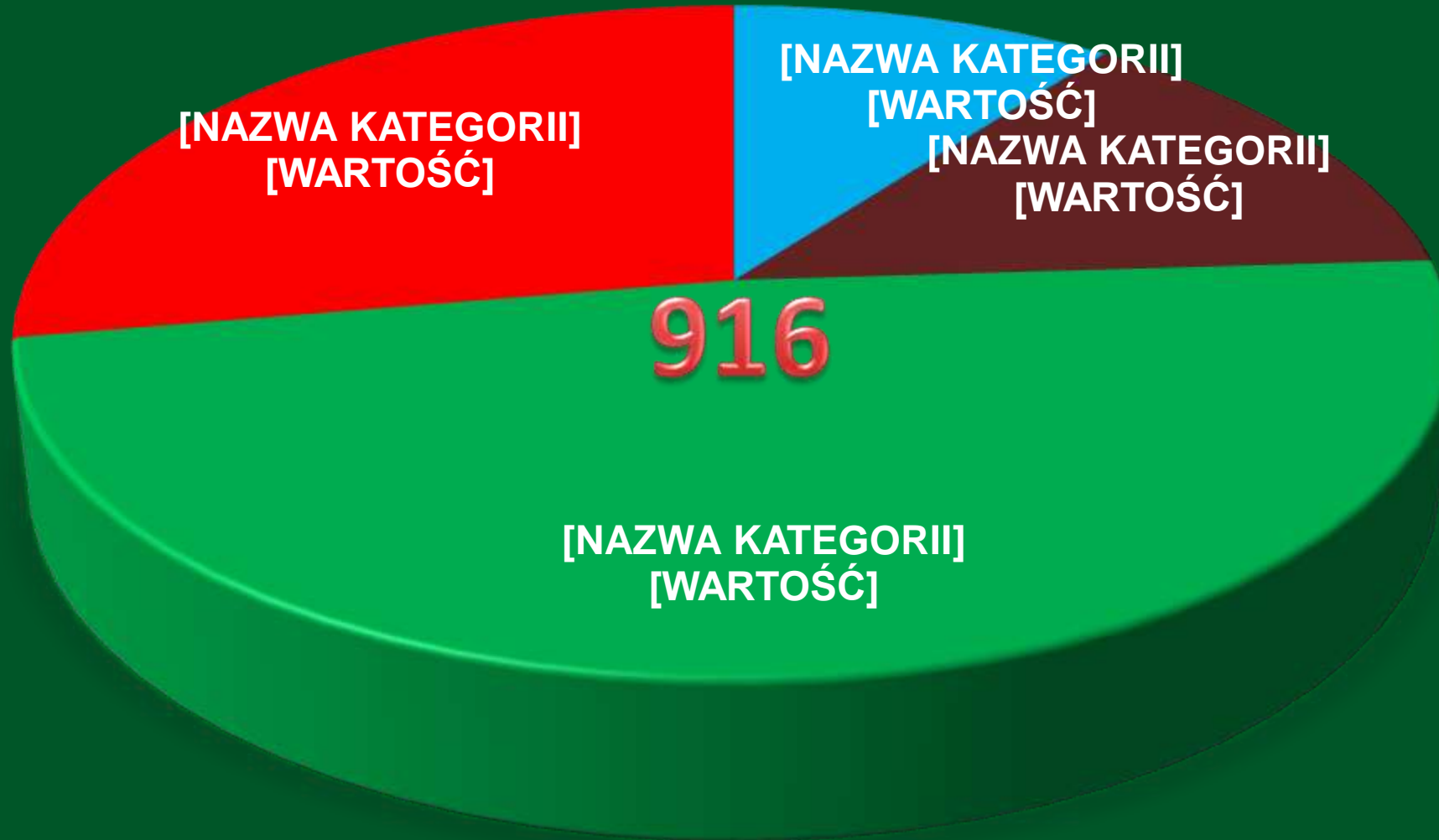


THREE-CYCLE MODEL of STUDY at MUT

(SINCE 2006)



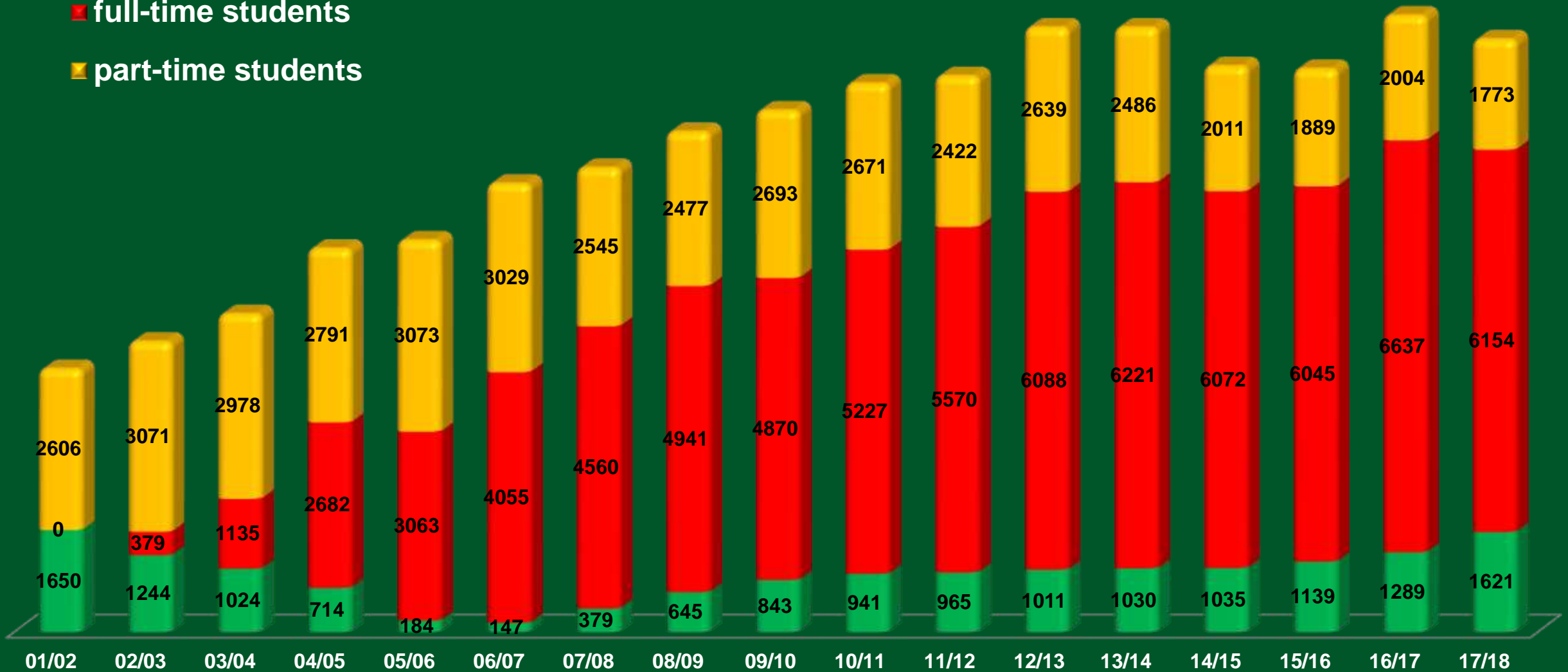
MUT's SCIENTIFIC and EDUCATIONAL STAFF



about 200 researchers and technical staff

NUMBER of STUDENTS at MUT

- military students
- full-time students
- part-time students



General MUT – about 10 000 students (including 80% full time)

Graduate education:

- undergraduate studies – B.Sc. degree
- graduate studies – M.Sc. degree
- postgraduate studies – Ph.D. degree

Continuing education:

- special courses – diploma
- language courses – diploma
- postgraduate courses – diploma

FIELDS of STUDIES (quantity of specializations)

- AVIATION AND COSMONAUTICS
- BIOECONOMY
- CIVIL ENGINEERING
- CHEMISTRY
- **COMPUTER SCIENCE**
- COMPUTER SCIENCE IN MEDICINE
- **CRYPTOLOGY AND CYBERDEFENCE**
- ELECTRONIC AND TELECOMMUNICATION
- GEODESY AND CARTOGRAPHY
- LOGISTICS
- **MANAGEMENT**
- MATERIALS ENGINEERING
- MECHANICAL ENGINEERING
- MECHATRONICS
- **NATIONAL DEFENCE**
- **NATIONAL SECURITY**
- POWER ENGINEERING
- SECURITY ENGINEERING
- SPACE AND SATELITE ENGINEERING

MORE THAN 90 SPECIALIZATIONS



Ph.D. STUDIES

The University is entitled by the Ministry of Science and Higher Education to confer Ph.D. and Post-Doc. degrees.

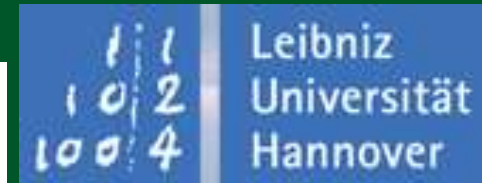
The Ph.D. studies are offered in all technological fields of studies covered by the Military University of Technology:

- chemistry
- computer science
- construction engineering
- electronics
- geodesy
- machine construction and exploitation
- materials engineering
- mechanics
- **security science**
- telecommunication



STUDENTS and TEACHERS INTERNATIONAL MOBILITY

- Institut d'Ingenierie Informatique de Limoges (France)
- Ecole Speciale Militaire de St. Cyr (France)
- Coventry University (UK)
- Johannes Kepler Universität Linz (Austria)
- Odense University College of Engineering (Denmark)
- University of Southern Denmark (Denmark)
- Czech Technical University, Prague (Czech Republic)
- Universidad Politécnica de València (Spain)
- Universidad Politécnica de Madrid (Spain)
- Universidad de Alicante (Spain)
- Universitet i Tromsø (Norway)
- Kauno Technologijos Universitetas (Lithuania)
- Universiteit Gent (Belgium)
- Technische Fachhochschule, Berlin (Germany)
- Delft University of Technology (Holland)
- Max Born Institute, Berlin (Germany)
- Leibniz Universität Hannover (Germany)
- University of Oulu (Finland)
- Florida State University, Tallahassee (USA)
- Purdue University, West Lafayette, Indiana (USA)
- Universitatea Politehnica din Bucuresti (Romania)
- Abant İzzet Baysal Üniversitesi, Bolu (Turkey)

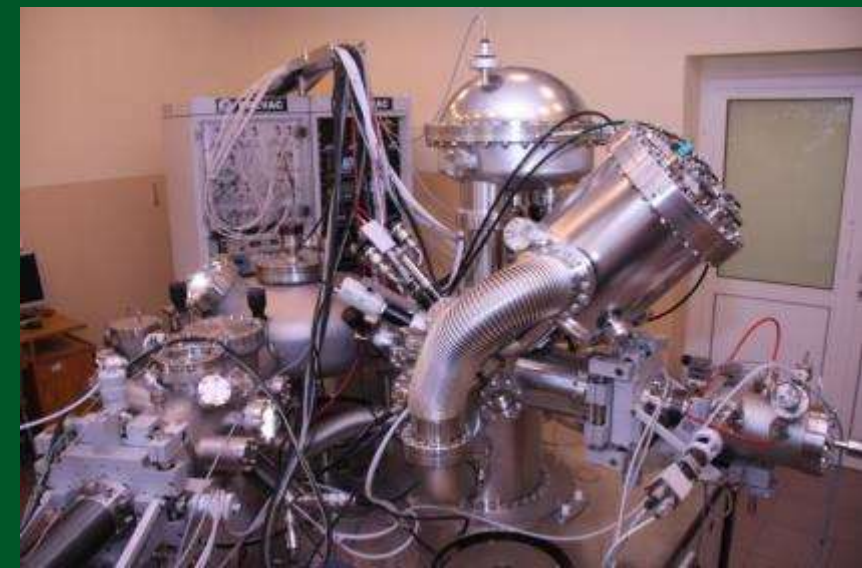


MUT's LECTURE HALLS AND LABORATORY ROOMS

160 fully equipped lecture halls (*for 7 000 attendees*)



236 laboratory rooms



MUT's FOREIGN LANGUAGE CENTRE

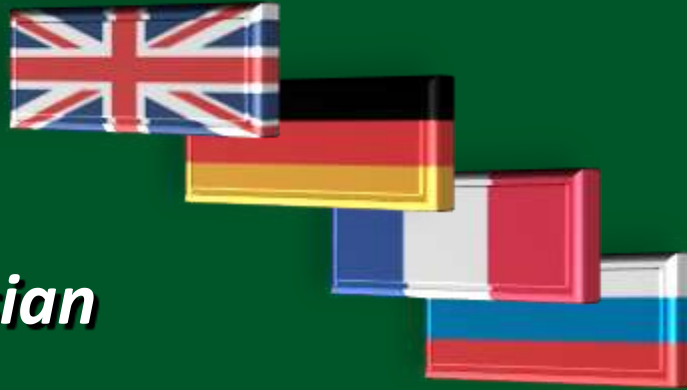
Authorized courses in:

- *English*

- *German*

- *French*

- *Russian*



MUT's SPORT CLUB AND STUDENT'S CLUB





Over
410K books,
23K volumes of scientific journals, e-journals, full-text data base

MUT's TRAINING and FIRING RANGE



INTERNATIONAL COOPERATION



WORLD:

***AUSTRALIA, CANADA, CHINA, INDIA, IRAN, ISRAEL,
JAPAN, QATAR, SINGAPORE, SOUTH KOREA, USA.***



EUROPE:

***AUSTRIA, BELGIUM, BELARUS, CZECH REP., FINLAND,
FRANCE, GERMANY, GREECE, HUNGARY, ITALY, LITHUANIA,
NORWAY,
NETHERLANDS, ROMANIA, RUSSIA, SLOVAKIA, SLOVENIA,
SPAIN, SWITZERLAND, SWEDEN, UK, UKRAINE.***



COOPERATION WITH MILITARY ACADEMIES

MUT strive to enlarge the net of the Military Academies/Universities in frame of Erasmus+ programme with aim to exchange Academic teachers and military students for practice and semesters. Until present day MUT has signed bilateral agreements with following military academies/universities:

- Vasil Levski National Military University, Bulgaria;
- University of Defence, Czech Republic;
- National University of Public Service, Hungary;
- Theresan Military Academy, Austria
- Saint-Cyr Coëtquidan Academy, France;
- Armed Forces Academy, Slovakia;
- Military Technical Academy, Romania
- Royal Military Academy, Belgium (Feb 2018)
- Hellenic Air Force Academy, Greece (Feb 2018)
- Air Force Academy, Romania (ongoing)



OFFER FOR MILITARY ACADEMIES/UNIVERSITIES

For the academic year 2018/2019 MUT offer ERASMUS+ semesters/ practices at 7 faculties :

- Cybernetics,
- Electronics,
- Mechanical Engineering,
- Advanced Technologies and Chemistry,
- Civil Engineering and Geodesy,
- Logistics,
- Mechatronics and Aviation

In 2018 MUT offer two multinational events dedicated for cadets/ military students from Military Academies/Universities:

- Multinational Sports and Shooting Games (8-12 May 2018)

http://www.emilyo.eu/sites/default/files/2018%2005%2008_12%20MUT%20Info%20for%20Sports%20and%20Shooting%20Games.pdf

- Common Module – „Advanced Technologies in Borders Surveillance” (17-23 June 2018)

<http://www.emilyo.eu/node/878>

All proposed courses and modules are provided in ENGLISH.

ERASMUS+ NON-ENGINEERING OFFER

INSTITUTE of Security Systems and Defence – Faculty of Logistics

No	Module	Credits (ECTS)	Language	Faculty
SPECIALIZATION: NATIONAL DEFENCE				
ELIGIBLE MODULES				
1.	Operational research for defence applications	2,5	English	Faculty of Logistics Institute of Security Systems and Defense
2.	Ethics in public life	2,5	English	Faculty of Logistics Institute of Security Systems and Defense
3.	Philosophy of security and defence	2,5	English	Faculty of Logistics Institute of Security Systems and Defense
4.	Military defence resources	2,5	English	Faculty of Logistics Institute of Security Systems and Defense
5.	Cyberspace protection as a part of defence system	2,5	English	Faculty of Logistics Institute of Security Systems and Defense
6.	Organisation and management	3,5	English	Faculty of Logistics Institute of Security Systems and Defense
7.	NATO as a political and military alliance	2,5	English	Faculty of Logistics Institute of Security Systems and Defense
8.	NATO Crisis Management	2,5	English	Faculty of Logistics Institute of Security Systems and Defense
9.	Civil Preparedness in EU and NATO	6	English	Faculty of Logistics Institute of Security Systems and Defense
10.	Crisis Response Processes in EU and NATO	6	English	Faculty of Logistics Institute of Security Systems and Defense
11.	NATO Strategic Concepts	4,5	English	Faculty of Logistics Institute of Security Systems and Defense
12.	Logistics in the EU, NATO and UN	6	English	Faculty of Logistics Institute of Security Systems and Defense

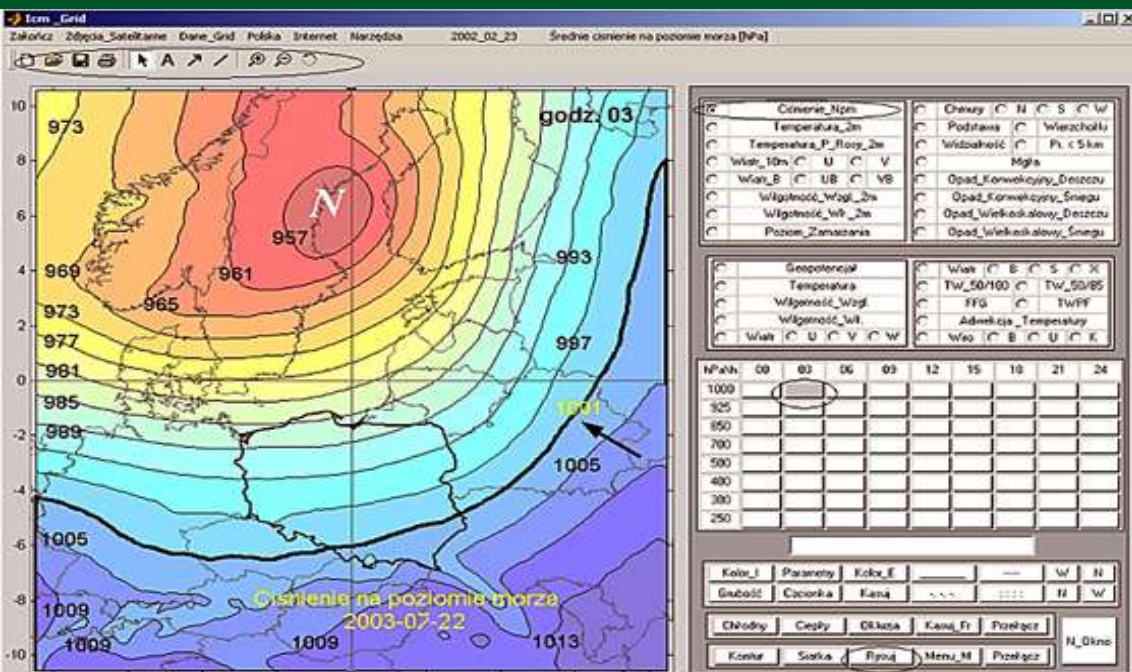
- Computer Systems Design, Development and Protection
- Operations Research and Computer Decision Support Systems
- Battlefield Modelling and Simulation
- Artificial Intelligence and Expert Systems
- Security Systems
- Cryptology and Cryptography



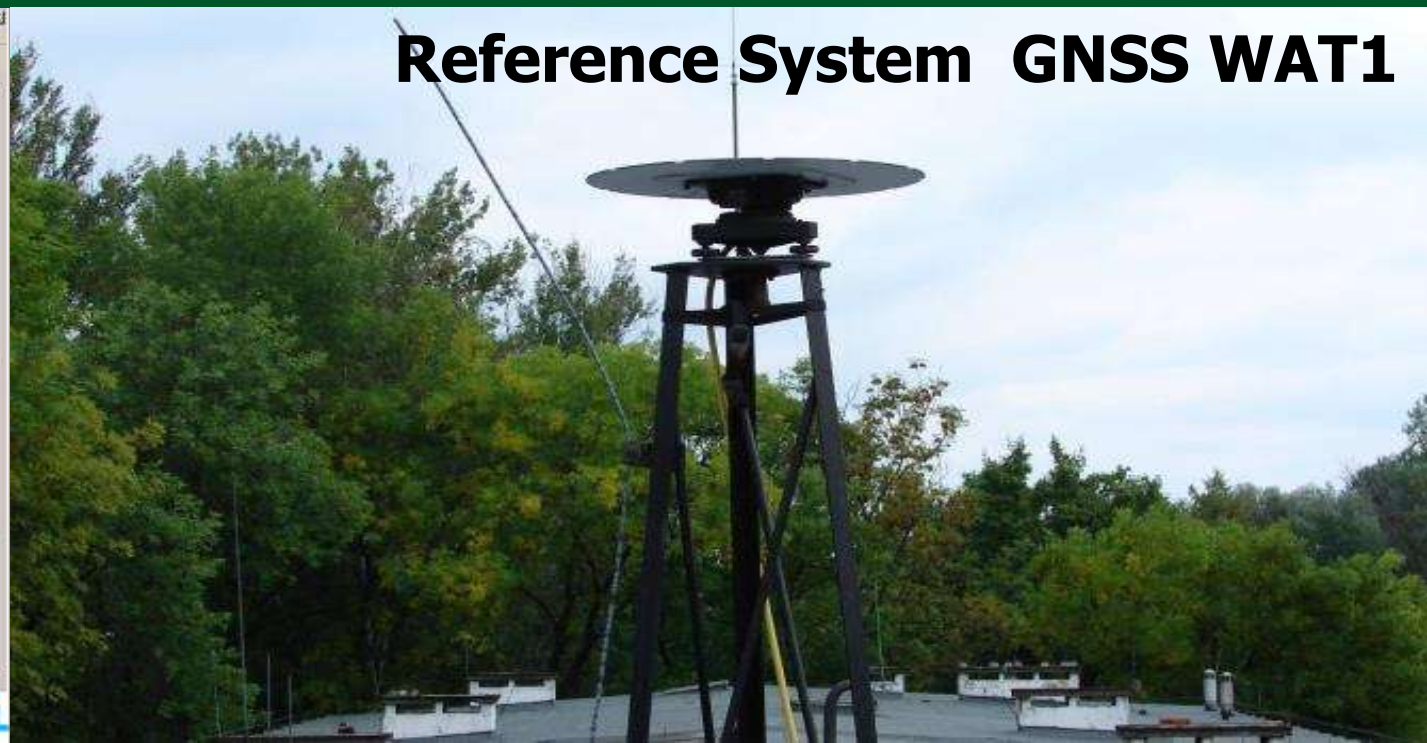
- Signal Processing and Analysis in Electronics Systems
- Radar Signal Processing Systems
- Electronic Warfare Systems
- Communications and Information Systems Engineering
- Interoperability of Communications and Information Systems



- Systems of space information
- Studies on dynamics of atmosphere and/or hydrometeorological support of Armed Forces
- Systems for fast reconstruction and repairing of bridges, airfields and other special buildings and constructions
- Multispectral techniques of image acquisition and processing
- Numeric studies of satellite geodesy and photogrammetry warp



Reference System GNSS WAT1



- Military and civilian logistics
- E-logistics
- Micrologistics
- Eurologistics
- International logistics
- Ecologistics



- New constructional materials
- Materials for photonics and electronics
- Methods of environmental analyses (air, water and soil)
- Utilization of toxic and hazardous materials
- Physics and technologies of infrared detectors
- Liquid crystals physics and applications



- Diagnostic and modernization of combat vehicles, means of road transportation and machine engineering
- Petroleum, oil and lubricants (POL) storage, transportation and distribution equipments
- Durability testing, fatigue and fracture development testing, tribology tests of constructional materials
- Development of numerical and experimental methodologies for strength analysis of materials and constructions



- Missile and rocket technologies
- Aviation technologies
- Aerodynamics and flight dynamics
- Armament and munitions technologies
- Security Engineering
- Thermodynamics

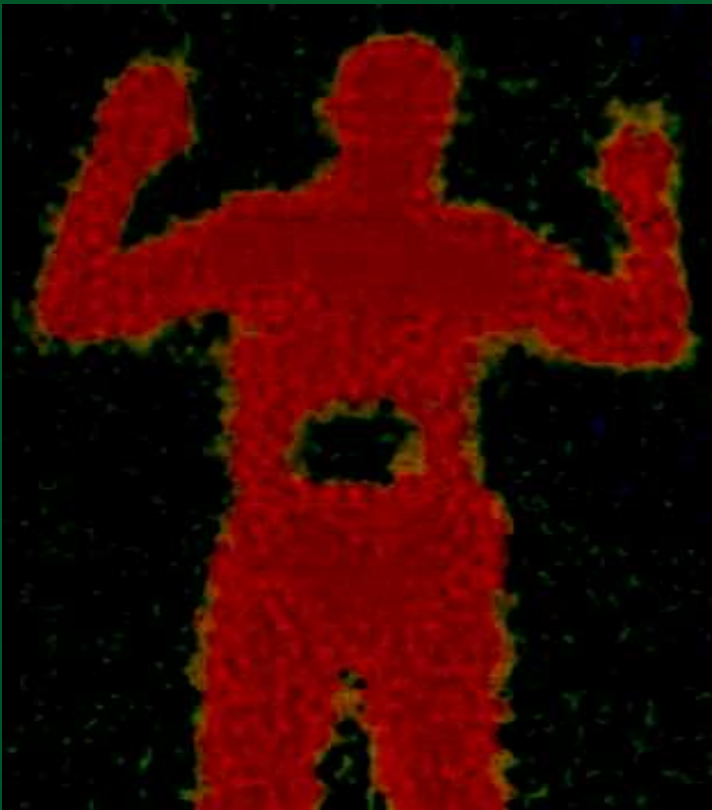


- Military applications of lasers and optoelectronic devices
- Detection of electromagnetic radiation:
X – UV – VIS – IR – THz (multispectral detection,
heterodyne detection)
- Laser interaction with matter (numerical modelling
of high energetic interactions)
- Laser telemetry of C/B contaminations
(„in situ” and stand-off systems)



LASER TECHNOLOGIES AND APPLICATIONS

- ❖ Physics and optics of lasers (UV, VIS, IR, X-ray lasers, new active media, thin films coatings)
- ❖ Laser cleaning methods (incl. works of arts refurbishment)
- ❖ Pulsed laser deposition of thin films (deposition of biomaterials, formation of nanostructures)
- ❖ Optoelectronic devices for environmental monitoring
- ❖ Laser medical systems (incl. cancer treatment)



“Military technologies used for civilian service”

The best example of this motto is →

Polish University –

MILITARY UNIVERSITY OF TECHNOLOGY

and its position in the European educational and research market.

Utilizing tradition and military discipline in everyday life, the

Military University of Technology is well prepared to play a leading role in modern technological dialogue between the EU policymakers and civilian beneficiaries.

THANK YOU FOR YOUR ATTENTION

