



SSAU TARGET MODEL BY 2020

RESEARCH

APPLICANTS MARKET

IT STRUCTURE

PERSONNEL RESOURCE

FACILITIES

ECONOMIC AND FINANCE MODEL

INFORMATION SUPPORT OF THE ACTIVITIES

ADVANCED AND APPLIED RESEARCH AREAS

GRADUATES - SPECIALISTS WITH INTERDISCIPLINARY CORE COMPETENCIES

GRID COMPUTING ENVIRONMENT

TALENTED YOUTH RECRUITMENT

TWO STAGE DEVELOPMENT

INCREASING REVENUE UNDER EFFECTIVE MANAGEMENT

SSAU IN THE INTERNATIONAL ACADEMIC AND PROFESSIONAL FIELD

7 RESEARCH INSTITUTES WITHIN SSAU
10 ADVANCED RESEARCH AREAS



5 SSAU SCIENTIFIC JOURNALS INDEXED BY WOS И SCOPUS

5,5 PUBLICATIONS CITED IN SCOPUS AND WOS PER 1 FACULTY

34,2 CITATIONS PER 1 FACULTY MEMBER

SSAU provides elite level training

>5000 ON-CAMPUS STUDENTS

1500 MASTERS

3000 ADDITIONAL PROFESSIONAL EDUCATION COURSES STUDENTS

23 EDUCATIONAL COURSES IN ENGLISH

13,5% ARE INTERNATIONAL STUDENTS



Constant expanding "Sergey Korolyov" supercomputer center's capacity

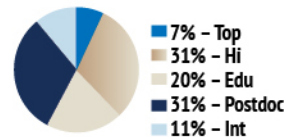
250 TFlops COMMON INFORMATION SPACE DEVELOPMENT

25 WORLD'S LEADING SCIENTIFIC AND EDUCATIONAL DATABASES

ELECTRONIC DISTANCE EDUCATION, MULTILINGUAL CONTENT

15 MOOC DEVELOPED AND DELIVERED BY SSAU

11% SHARE OF INTERNATIONAL FACULTY AND RUSSIAN FACULTY HAVING INTERNATIONAL PhD



90% FACULTY LANGUAGE COMPETENCE

TRAINING HIGHLY QUALIFIED PERSONNEL ACCORDING TO RUSSIAN STANDARDS FOR POSTGRADUATE AND DOCTORAL DEGREE AND INTERNATIONAL STANDARDS FOR PhD DEGREE

85% ACADEMIC MOBILITY

86% OF THE FACULTY HAVING POSTGRADUATE DEGREES

45 years IS AN AVERAGE STAFF AGE



BUILDING OF A NEW DORMITORY ON THE TERRITORY OF CURRENT CAMPUS:

510 VACANCIES FOR STUDENTS
180 FLATS FOR FACULTY



NEW CAMPUS IN TECHNOPOLIS

- Labs of international standards - total area - S 11 000 m2.
- Dormitories for students and postgraduate students. Housing for academic teaching staff - total area - S 18 000 m2.
- Hotel providing 250 rooms.
- Sociocultural and sport facilities - total area - S 32 500 m2.
- Congress-exposition hall - total area - S 70 000 m2.
- Technopark with an innovative technological center and innovative village.

Project-oriented management system

40% OFF-BUDGET REVENUE SHARE

5 BILLION RUB - TOTAL REVENUE

250% AVERAGE FACULTY TEACHER INCOME AS REGARDS TO THE AVERAGE ONE IN THE REGION

2 RUB 2 MLN. R&D INCOME PER 1 FACULTY

COST OPTIMIZATION FOR INCREASING THE SHARE OF UNIVERSITY DEVELOPMENT FUNDING

Positioning of SSAU as the leading higher education institute in the Russian Federation

MULTILINGUAL WEB-PORTAL
RUSSIAN
ENGLISH
ESPAÑOL
FRANÇAIS
中文 } **7000** VISITORS A DAY

60 000 USERS IN SSAU'S SOCIAL MEDIA ACCOUNTS

25 INTERNATIONALLY RELEVANT EVENTS A YEAR, IN WHICH SSAU TAKES PART



ANNUAL HOLDING OF ALUMNI CONGRESS



RESEARCH MARKET

5 BREAKTHROUGH RESEARCH AREAS

7 MAJOR RESEARCH INSTITUTES AT SSAU

1 2 3 4 5 6 7

- 1 AEROSPACE FUNDAMENTALS НИИ
- 2 BIO-TECHNICAL SYSTEMS НИИ
- 3 GEOINFORMATICS НИИ
- 4 INFORMATION TECHNOLOGY НИИ
- 5 ADVANCED MATERIALS TECHNOLOGIES НИИ
- 6 MICRO- AND NANO-ELECTRONICS НИИ
- 7 AEROSPACE TECHNOLOGIES НИИ

WORLD-CLASS LABORATORY FACILITIES

10 ADVANCED RESEARCH AREAS

INTERNATIONAL EDUCATIONAL PROGRAMS

- RESEARCH EQUIPMENT
- CONTROL AND MONITORING EQUIPMENT
- MEASUREMENT EQUIPMENT

- AEROSPACE TECHNOLOGIES
- AERONAUTICAL ENGINEERING
- AEROSPACE ENGINES
- MACHINE DYNAMICS AND VIBROACOUSTICS
- ADVANCED MATERIALS TECHNOLOGIES
- BIOTECHNICAL SYSTEMS
- MICRO- AND NANO-ELECTRONICS
- INFORMATION TECHNOLOGY
- GEOINFORMATICS
- AEROSPACE FUNDAMENTALS

- POSTGRADUATE DEGREE
- DOCTORAL DEGREE
- DOCTORAL DEGREE (PhD)
- MASTER'S DEGREE

IMPLEMENTATION STAGES

IMPLEMENTATION STAGES

STAGE I STAGE II

2013 2014 2015 2016 2017 2018 2019

2020

KEY INDUSTRY SECTORS

ENGINE BUILDING

AUTOMOTIVE



AEROSPACE

AERONAUTICS

PETROLEUM INDUSTRY

RESEARCH RESULTS/ PUBLICATIONS

5,5 | 34,2

PUBLICATIONS PER 1 FACULTY

CITATIONS PER 1 FACULTY

5

SSAU'S OWN ACADEMIC JOURNALS, INDEXED BY WOS AND SCOPUS



APPLICANTS MARKET

77
 SSAAU APPLICANT'S
 AVERAGE SCORE
 AT THE UNIFIED
 STATE EXAM

**SSAAU IMPLEMENTS ELITE
 TRAINING THROUGH RESEARCH**

1500
 Increase of Master's
 students amount by **3 times**

MORE THAN
5000
 FULL-TIME
 STUDENTS

BACHELOR'S	2400	STUDENTS
MASTER'S	1500	STUDENTS
SPECIALISTS (DIPL.ENG.)	1250	STUDENTS
POST-GRADUATE	700	STUDENTS

+ 30000
 CPE PROGRAMS STUDENTS

EDUCATION IS FOCUSED ON RESEARCH.
 OUTPUT -HIGHLY SKILLED PROFESSIONALS
 WITH INTERDISCIPLINARY CORE
 COMPETENCIES

**INTERNATIONAL
 APPLICANTS
 MARKET**

13,5%
 SHARE OF INTERNATIONAL STUDENTS



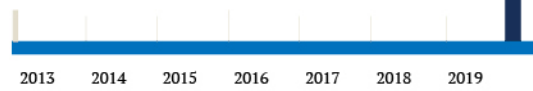
23
 EDUCATIONAL
 PROGRAMS DELIVERED
 IN ENGLISH

15
 MOOC DEVELOPED BY
 SSAAU

105
 COURSES DELIVERED
 IN ENGLISH

2020

IMPLEMENTATION STAGES



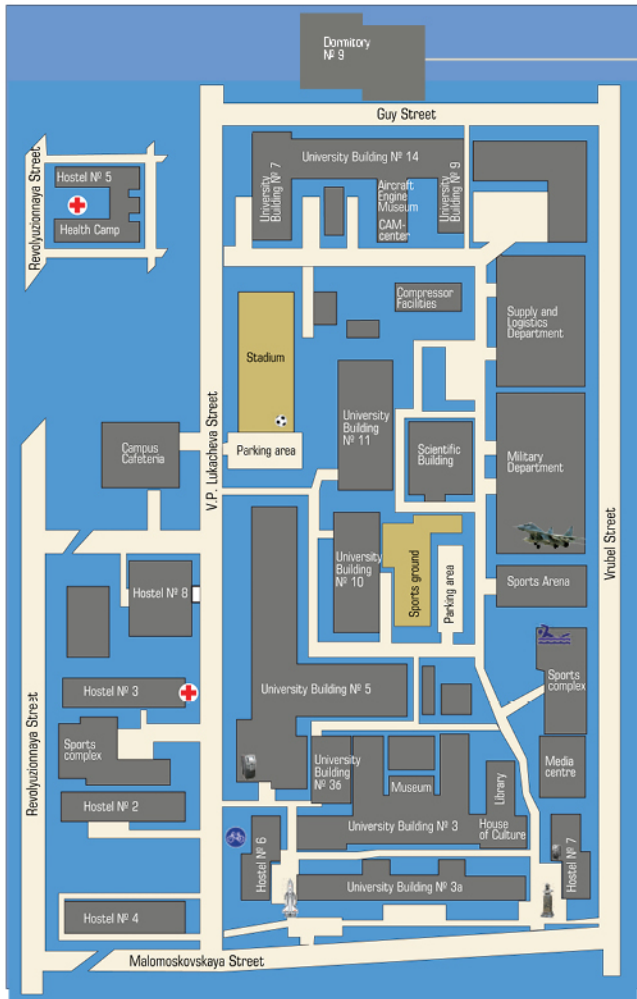
2013 2014 2015 2016 2017 2018 2019



FACILITIES

2013

SSAU CAMPUS, MOSKOVSKOE SHOSSE



NEW LABORATORIES

- advanced materials technologies
- composite materials
- radio research laboratory, micro- and nano-electronics,
- geoinformatics, information security and telecommunication,
- IT-rechnology
- laser and bio-medical systems

DORMITORY

Construction area – 4710,4 m²
 510 student capacity, including international students
 180 apartments for young researchers

2020

NEW SSAU CAMPUS IN TECHNOLIS

Technopolis next to stadium for World Cup



**AEROSPACE MUSEUM
NAMED AFTER
SERGEY P.
KOROLEV**



TRAINING AIRFIELD



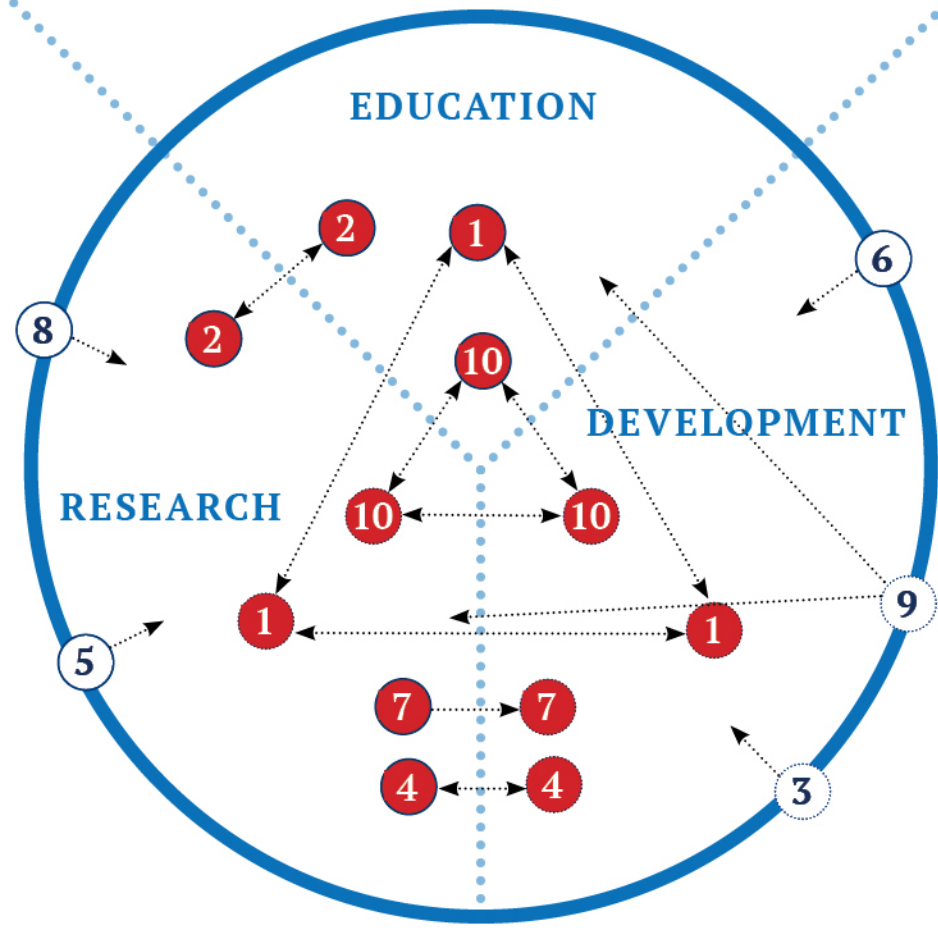
**THE HISTORY CENTER OF AIRCRAFT ENGINES
NAMED AFTER
NIKOLAY D.
KUZNETSOV**



AMBITION RADAR

EDUCATION AND RESEARCH AREAS OF SSAU DEVELOPMENT

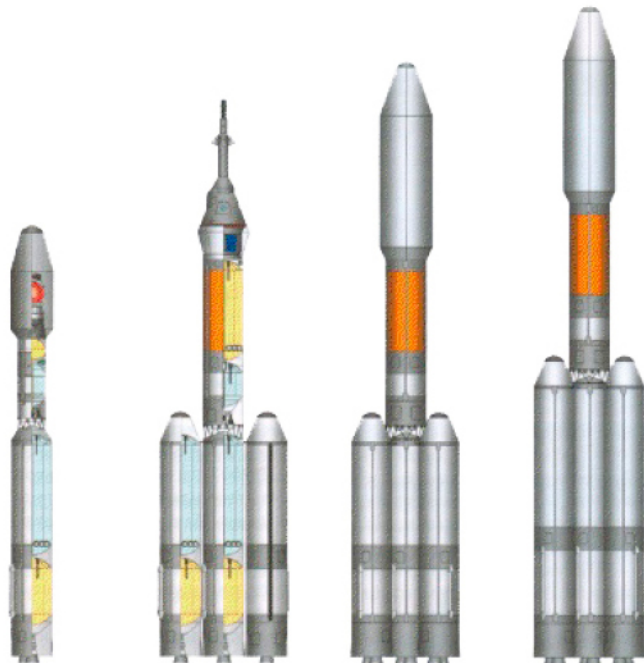
- 1 AEROSPACE TECHNOLOGIES
- 2 BIO-TECHNICAL SYSTEMS
- 3 ADVANCED MATERIALS TECHNOLOGIES
- 4 DYNAMICS AND VIBRO-ACOUSTICS OF MACHINES
- 5 AEROSPACE FUNDAMENTALS
- 6 GEOINFORMATICS
- 7 INFORMATION TECHNOLOGY
- 8 MICRO- AND NANO-ELECTRONICS
- 9 AERONAUTICAL ENGINEERING
- 10 AEROSPACE ENGINES





AEROSPACE TECHNOLOGIES

ADVANCED RESEARCH PROJECTS



NEW GENERATION ROCKET CARRIERS DEVELOPMENT FOR SPACEPORTS: VOSTOCHNY, PLESECK – RUSSIA, BAIKONUR – KAZAKHSTAN, GUIANA SPACE CENTRE – FRANCE



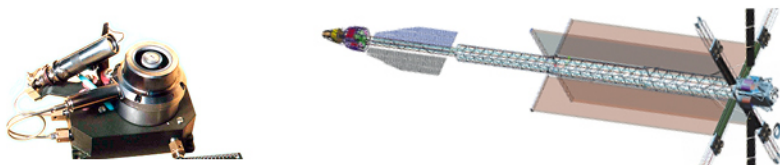
HI-TECH ENGINEERING AND MANUFACTURING OF SMALL SPACECRAFT WITH RADIO AND HYPERSPECTRAL EQUIPMENT



**ORBITAL SATELLITE CONSTELLATION BASED ON AIST PLATFORM FOR RESEARCH AND GENERAL APPLICATIONS
DEVELOPMENT OF NANO- AND PICO-SATELLITES**



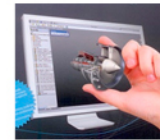
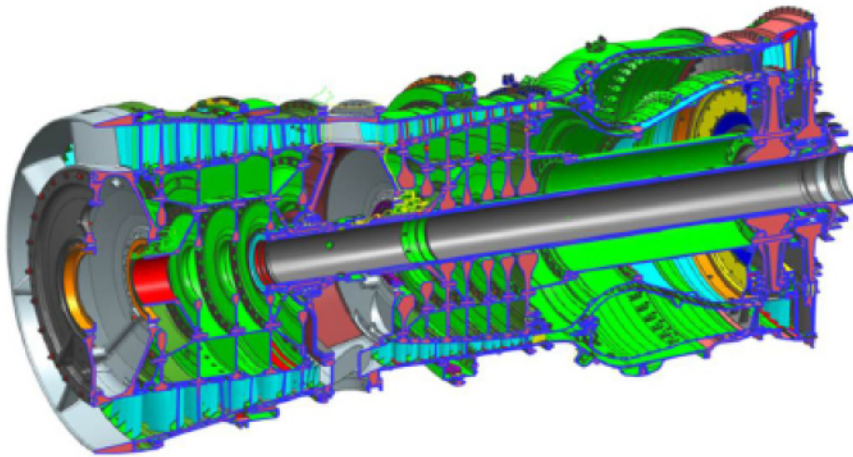
**EDUCATION
PRACTICAL TRAINING,
INTERNATIONAL AEROSPACE
SUMMER SCHOOL**



SPACE TUGS WITH ELECTRIC JET ENGINES



AEROSPACE ENGINES



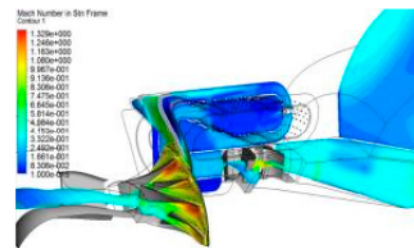
**COMPUTER MODEL
FOR COMPLETE LIFE-CYCLE
OF AIRCRAFT ENGINE**

EDUCATION

**PROJECT-BASED APPROACH,
INTEGRATED INTERDISCIPLINARY
TRAINING AND EDUCATION THROUGH
RESEARCH**

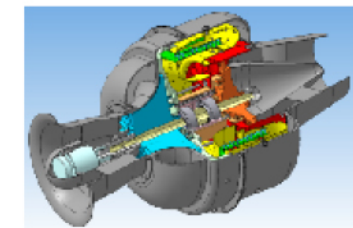


ADVANCED RESEARCH PROJECTS



**COMPLEX DUAL PARAMETRIC
SIMULATION OF ENGINE DESIGN
AND MANUFACTURING PROCESS,
GLOBAL OPTIMIZATION**

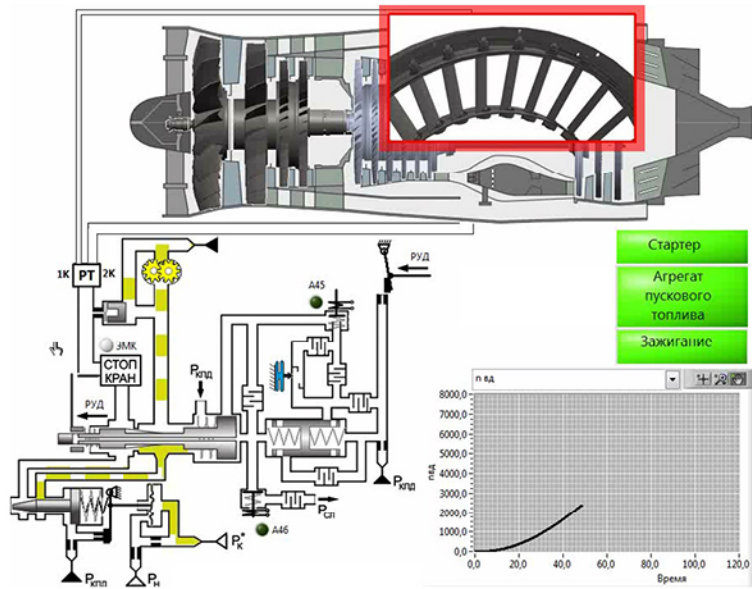
DEVELOPMENT



**DEVELOPMENT OF EFFICIENT
TECHNOLOGIES FOR AIRCRAFT
ENGINES ENGINEERING AND HI-TECH
MANUFACTURING**



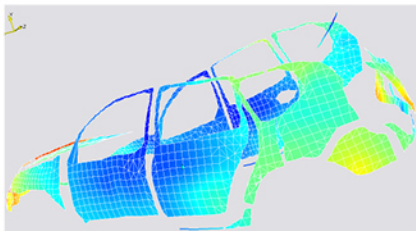
MACHINE DYNAMICS AND VIBROACOUSTICS



COMPLEX SOLUTION OF MACHINE DYNAMICS AND VIBRO-ACOUSTICS ISSUES TAKING INTO ACCOUNT THE INTERACTION OF FLUID PULSATIONS, VIBRATION AND NOISE

ADVANCED RESEARCH

NEW THEORY OF VIBRO-ACOUSTICAL PROCESSES CONTROL



INNOVATIVE EDUCATION

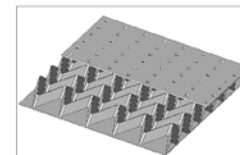
- EDUCATIONAL PROGRAMS BASED ON MULTILEVEL MODELING
- INTERNATIONAL ROBOTICS FESTIVAL



DEVELOPMENT



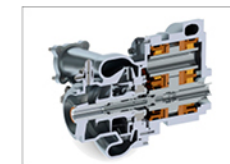
- MODIFIED MATERIAL METAL-RUBBER MP



- VIBRO-ACOUSTIC PROTECTION EQUIPMENT

POSITIONING

- INTERNATIONAL SCIENCE CONFERENCE "MACHINE DYNAMICS AND VIBRO-ACOUSTICS" (SCOPUS)
- FLUID POWER CENTER

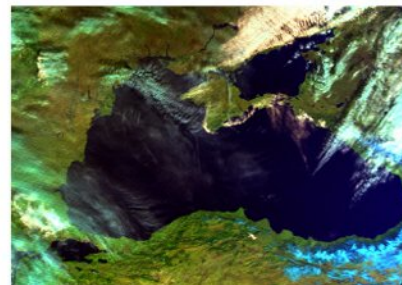




INFORMATION TECHNOLOGY

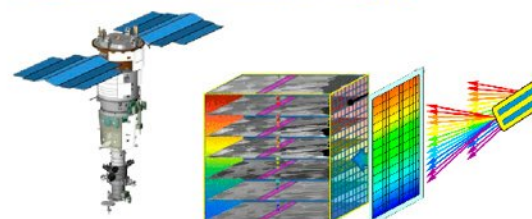


Samara. Kuybyshev square. Photo from space in honor of 50th anniversary of the first manned spaceflight with cosmonaut Yuri Gagarin aboard.



RESEARCH

INFORMATION
TECHNOLOGY,
GEOINFORMATICS
COMPUTER OPTICS
AND NANOPHOTONICS



Spacecraft «Resource-P»,
Samara, JSC Progress
Launched on June 25, 2013



DEVELOPMENT

NANOPHOTONICS

Integrated electronic and nanophotonic
components

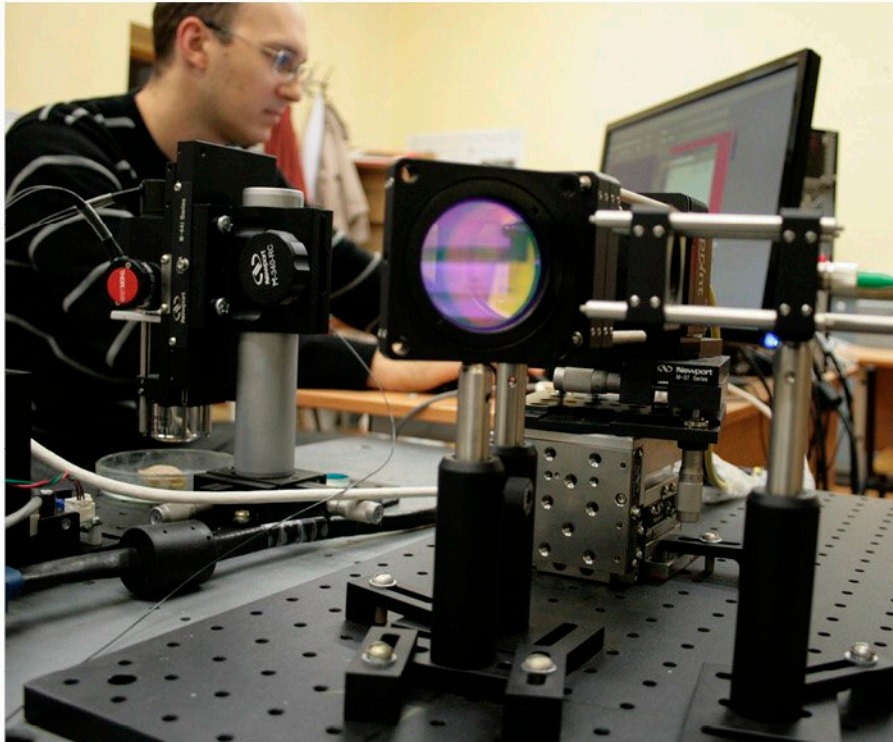


ADVANCED RESEARCH

METHODS FOR BIG DATA MINING



BIOTECHNICAL SYSTEMS



EDUCATION

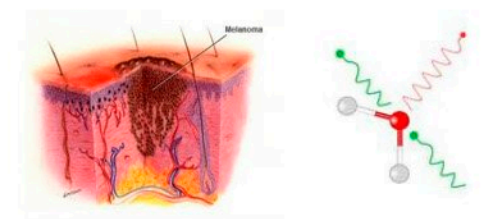
- INTERNATIONAL PhD PROGRAMME IN BIOPHOTONICS ON THE BASIS OF RESEARCH AND EDUCATION CENTERS OF SAMARA STATE AEROSPACE UNIVERSITY (RUSSIA), UNIVERSITY OF HOUSTON (USA), TECHNICAL UNIVERSITY OF DENMARK (DENMARK), UNIVERSITY OF OULU (FINLAND), UNIVERSITY OF OTAGO (NEW ZEALAND).

RESEARCH

- RESONANCE RAMAN SPECTROSCOPY TECHNOLOGY FOR NON-INVASIVE TRANSCUTANEOUS ANALYSIS

ADVANCED RESEARCH

- CONTROLLED REGENERATION
- MULTI-FACTOR SCREENING AND REMOTE MONITORING OF HUMAN CANCERS



DEVELOPMENT

- THE SYSTEM OF THREE-DIMENSIONAL VIRTUAL BIOPSY.
- NON-INVASIVE BLOOD ANALYSIS DEVICES.

