



Don State Technical University

# **MES - office**

**Berlin, Germany**

**«DSTU-ORI in-company laboratory»**

**Research scientist**

**Zheleva A.**

**December 02, 2015**

# Stages of foundation

MES-office was established as a joint laboratory of Don State Technical University and the Oncologic Research Institute in the framework of MMATENG + agreement.

The organizational documents for «DSTU-ORI in-company laboratory» are approved by DSTU Rector on April,09,2015.

Building 1, room 483.



## MES - office staff

Name	Position in «DSTU-ORI in-company laboratory»
Maksimov Alexey	Head of department
Philippov Alexander	Manager of department
Zheleva Alena	research scientists of department
Bachinskii Alexey	
Mukovozov Igor	
Panchenko Daniil	



## MES - office issues

- Marketing and engineering research for creation and promotion of new materials, products and diversification of engineering materials science application.
- Development and promotion of training courses and / or career enhancement trainings for various target groups.
- Informational support of university courses revising in order to upgrade the outdated curricula;
- Monitoring of industrial enterprises requirements in order to improve the professional qualifications;
- Finding new partners.

# «DSTU-ORI in-company laboratory» activities

## EU practice implementation

No	Disciplines of EU	DSTU disciplines for modernization	Responsibilities for the implementation
1.	CUT_ PROJECT MANAGEMENT (BUSINESS PLANNING, FUNDING, MARKETING, PERFORMANCE)	Small enterprise management	«Fundamentals of economics and manufacturing management» department
2.	ENSCL_ DAMAGE AND RELIABILITY OF MATERIALS	Low-wear coating technique	«Physical and Applied Materials Science» department
3.	ENSCL_ DESCRIPTION OF METALLURGY	Introduction to Engineering qualification	REC «Materials»
4.	ENSCL_ DESCRIPTION OF MICROSTRUCTURE INVESTIGATION TECHNIQUES	Modern methods of analysis and study of the materials structure and properties	«Physical and Applied Materials Science» department
5.	SY_KUL BASICS OF MATERIAL SCIENCE	Materials engineering and advanced materials technology	«Physical and Applied Materials Science» department

# CURRENT CURRICULA IN MMATENG FIELD

## EU practice implementation

No	Disciplines of EU	DSTU disciplines for modernization	Responsibilities for the implementation
6.	KUL_MATERIALS SELECTION	Techniques for materials selection and development with desired technological and functional properties	«Physical and Applied Materials Science» department
7.	PSTU_STRENGTHENING MATERIALS TREATMENT	Theory and technology of product thermal and surface impregnation	«Physical and Applied Materials Science» department
8.	TUB_COMMUNICATION MODULE	Personality and group psychology	«Philosophy» department
9.	TUB_EMPLOYABILITY MODULE	Legal support in professional activity	«Economics» department
10	TUB_SUPERCONDUCTIVE MATERIALS	Materials with special properties	«Forming technologies and artistic processing of materials» department

# CURRENT CURRICULA IN MMATENG FIELD

## EU practice implementation

No	Disciplines of EU	DSTU disciplines for modernization	Responsibilities for the implementation
11	KUL_TRANSPORT APPLICATIONS	Materials Mechanics and design principles	«Forming technologies and artistic processing of materials» department
12	KUL_CAD_CAE siemens	Computer and information technologies in science and production	«Physical and Applied Materials Science» department
13	MATERIALS FROM RENEWABLE SOURCES	MATERIALS FROM RENEWABLE SOURCES	REC «Materials»

# «DSTU-ORI in-company laboratory» activities

No	Activities	Deadlines	Person in charge
Lab implementation			
1.1	Lab equipment installation	during the year	Philippov A.
1.2	Manipulation robotic system equipping	during the year	Philippov A
1.3	Endovideo surgery fitting	during the year	Maksimov A. Y.
Academic activities			
2.1	«Engineering in biomedical practice» student trainings	according to the academic schedule approved	research scientists of «DSTU-ORI in-company laboratory»
2.2	Final student theses supervision on «Physical and Applied Materials Science», «Forming technologies and artistic processing of materials» and «Instrument-making» departments	according to the academic schedule approved	research scientists of «DSTU-ORI in-company laboratory»



# «DSTU-ORI in-company laboratory» activities

No	Activities	Deadlines	Person in charge
Research activities			
3.1	Project realization «Preoperative prototyping with the use of PLA plastics»	during the year	Philippov A.
3.2	Project realization «Maxillofacial prosthetics with the use of dental materials»	during the year	Philippov A.
3.3	Project realization «Maxillofacial prosthetics with the use of silicone prostheses»	during the year	Philippov A.
Commercial service			
4.1	R'n'D activities implementation on the commercial basis	during the year	Lab staff

# «DSTU-ORI in-company laboratory» activities

October 28, 2015

MES - office staff, ORI's research scientists, DSTU's teachers and students took part in the webinar «Teaching Materials Information to Bio Engineering Students using CES EduPack»

Guest speaker, Dr. Louise Smith (University of South Australia)



The highlights of the seminar:

- how the latest CES EduPack Bio Engineering Edition engages students with material concepts and material properties;
- compelling ways for students to explore the basic structural building blocks of the natural world;
- how to teach the effect of material property changing through processing, and its potential impact to the biological reaction.

# «DSTU-ORI in-company laboratory» activities

September 9-11, 2015

International seminar “Modern trends of engineering education” in the framework of the 85th Anniversary Celebration of DSTU.

Moderators - Bratakos M., president of the Athens Technological Educational Institute of Greece; Shvedova S., Vice-rector on international affairs of Don State Technical University



October 12-15, 2015

As a result of the internship in Krakow workshops “The implementation of special software Granta Design in the field of materials science” for teachers and staff were held in DSTU. Moderators - Philippov A., Manager of «DSTU-ORI in-company laboratory», Zheleva A., research scientist of «DSTU-ORI in-company laboratory»

# Topics for next workshops

1. Non-traditional materials in medicine
2. Additive technology in implantology
3. Biodegradable materials in implantology
4. Changes in materials properties at various sterilization methods





# THANK YOU



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