

Project Code	IP-2020-02-7575
Project Title	Assessment of microplastic shedding from polyester textiles in washing process
Acronym	InWaShed-MP
Sources of funding	CSF
Applicant/Holder	University of Zagreb Faculty of Textile Technology
Partner (s)	University of Zagreb: Faculty of Food Technology and Biotechnology School of Medicine Croatian Institute of Public Health University of Maribor Faculty of Mechanical Engineering
Project implementation period	01.02.2021. – 31.01.2025.
Total value of the project	910.782,00 kn
Value of the project relating to the Faculty	910.782,00 kn
Intensity of support for the project	-
Total grant amount	-
Grant amount belonging to the Faculty	-
Project Manager	Prof. Tanja Pušić, PhD
Project Coordinator at the Faculty	-
Other Faculty employees involved in the project and their role on the project	Prof. Edita Vujasinović, PhD – researcher Prof. Branka Vojnović, PhD – researcher Assoc. prof. Anica Hursa Šajatović, PhD -researcher Assist. prof. Tihana Dekanić, PhD – researcher PhD Zorana Kovačević – researcher PhD Kristina Šimić – researcher Agata Vinčić, BSc - researcher

Students of the Faculty involved in the project and their role on the project	PhD student will be involved in academic year 2021/2022
Project coordinators at partner institutions	-
Short summary of the project (500 to 2000 characters including spaces)	<p>The importance of the topic of microplastic (MP) shedding from synthetic textiles has initiated the investigation area of this project, with the aim to reduce and assess the release of microplastics of textile origin into the environment, employing the following:</p> <ul style="list-style-type: none"> • innovative washing processes and • environmentally friendly treatment of polyester textiles with chitosan. <p>Innovative washing process involves the modification of standard process and adapting parameters in view of synthetic textiles, PES and PES/Cotton fabrics and knits. This washing programme will include the concept of gradual cool down of the main washing bath prior to rinsing process.</p> <p>Environmentally friendly treatment of polyester fabrics and knits will involve surface modification with biopolymer chitosan, with the aim to reduce MP shedding into the environment.</p> <p>The importance of the project for the society and economy is based on the investigations identified in the area RDI - S3 (Research-Development-Innovations – Strategy of Smart Specialisation). Two thematic priority areas have been included: Health and the quality of life and Energy and sustainable environment, together with a horizontal theme: Key enabling technologies (KET).</p>

Project Code	IP-2020-02-5041
Project Title	Textile Materials for Enhanced Comfort in Sports
Acronym	TEMPO
Sources of funding	HRZZ
Applicant/Holder	University of Zagreb Faculty of Textile Technology
Partner (s)	University of Ljubljana
Project implementation period	01.01.2021.-31.12.2024.
Total value of the project	689.000,00 kn
Value of the project relating to the Faculty	689.000,00 kn
Intensity of support for the project	100% HRZZ
Total grant amount	
Grant amount belonging to the Faculty	
Project Manager	Ivana Salopek Čubrić
Project Coordinator at the Faculty	
Other Faculty employees involved in the project and their role on the project	Tomislav Rolich – team member Vesna Marija Potočić Matković - team member Goran Čubrić - team member Daniel Domović - team member Željka Pavlović - team member Katarina Krstović - team member
Students of the Faculty involved in the project and their role on the project	Ines Katić Križmančić - team member
Project coordinators at partner institutions	
Short summary of the project (500 to 2000 characters including spaces)	The demands of end users for the production of sportswear with improved performance are growing and thus the mission of scientists to design innovative materials is becoming imperative. Within the TEMPO project, scientists of various expertise (material design and evaluation of properties, clothing engineering, human factors and computer modeling) are gathered. Their intention is to connect with each other and use different competencies to conduct research aimed at:

1. design of innovative textile materials
2. optimization of properties
3. long-lasting functionalization
4. personalization of clothing
5. development of adequate computer models.

For the purpose of mechanical functionalization of knitted structures, various patterns will be designed and manufactured. Based on the evaluation of structural parameters, physical-mechanical and comfort properties, the optimization of structures will be carried out and models of machine learning algorithms will be developed. Further emphasis will be on the development and validation of material aging protocols in different environments, research of material properties and definition of algorithms for predicting product functionality due to aging.

Thermography will be used to measure sportswear in a variety of environments and will serve as the basis for the design of personalized sportswear that will enhance the performance of athletes.

Project Code	IP-2018-01-6363
Project Title	Development and thermal properties of intelligent clothing
Acronym	ThermIC
Sources of funding	HRZZ
Applicant/Holder	Faculty of Textile Technology
Partner (s)	-
Project implementation period	1. 1. 2019. - 31. 12. 2021.
Total value of the project	828.100,00 kn
Value of the project relating to the Faculty	-
Intensity of support for the project	-
Total grant amount	828.100,00 kn
Grant amount belonging to the Faculty	-
Project Manager	Dubravko Rogale
Project Coordinator at the Faculty	-
Other Faculty employees involved in the project and their role on the project	Siniša Fajt – member Snježana Firšt Rogale – member Željko Knezić – member Antoneta Tomljenović - member Kristina Krulić Himmelreich - member Emilija Zdraveva - member Nikolina Jukl - member Martina Bobovčan Marcelić - member Daniel Časar Veličan - doctoral student
Students of the Faculty involved in the project and their role on the project	-
Project coordinators at partner institutions	-
Short summary of the project (500 to 2000 characters including spaces)	A team of scientists of the Faculty of Textile Technology is dealing with the development of a brand new kind of clothing called intelligent clothing with adaptive thermal

insulation properties. They have developed and patented two generations of functional prototypes where sensors monitor the state of outdoor environment and the microclimate of intelligent clothing as well as the current state of the technical subsystems in clothing. The integrated computer interprets the existing situation, makes conclusions about it, and it makes decisions about necessary changes so that the article of clothing intelligently responds and automatically adapts its thermal properties in accordance with the environment and physical activities of the wearer. Initial research activities and development have shown the justification of introducing the concept of intelligent clothing, while prototypes and parts of metrology equipment have been recognized by the international innovation community with a series of awards.

The objectives of this project are to improve the architecture of the sensor-computer-actuator system, to design new ergonomically shaped segmented thermal insulation chambers and technical subsystems using high-tech welding methods and to create a new generation of intelligent clothing prototypes.

After that, the operation and characteristics of the technical subsystems and the reaction rate of intelligent clothing with adaptive thermal properties will be investigated. This is the reason for the establishment of several new measurement methods and protocols for measuring thermal properties. A new research laboratory for complete measurements of thermal properties of clothing shall also be established. Therefore, the integration of all metrology subsystems will be performed in the new climatic chamber with adaptable parameters. On the basis of these research activities, the final optimization of the reactions of intelligent clothing will be performed, and its properties in changing environmental conditions under laboratory conditions and during physical activities of the wearer will be determined.

The final objective of this project is to create a sophisticated prototype and to study the properties of a new kind of intelligent clothing and to establish a new laboratory for testing thermal properties of all types of clothing.

Project Code	IP-2018-01-3170
Project Title	Multifunctional woven composites for thermal protective clothing
Acronym	MF-WCOMPROTECT
Sources of funding	Croatian Science Foundation
Applicant/Holder	University of Zagreb Faculty of Textile Technology
Partner (s)	-
Project implementation period	15.11.2018 – 14.11.2022.
Total value of the project	868.000 HRK
Value of the project relating to the Faculty	868.000 HRK
Intensity of support for the project	100%
Total grant amount	100%
Grant amount belonging to the Faculty	868.000 HRK
Project Manager	Prof. Stana Kovačević, Ph.D.
Project Coordinator at the Faculty	-
Other Faculty employees involved in the project and their role on the project	Assist. Prof. Ivana Schwarz, Ph.D. – associate Postdoc. Snježana Brnada, Ph.D. – associate Prof. Tatjana Rijavec Rijavec, Ph.D. – associate Prof. Polona Dobnik Dubrovski, Ph.D. – associate Beti Rogina-Car, Ph.D. – associate Jacqueline Domjanić, Ph.D. – associate Ana Kiš – Ph.D. student Barbara Iskerka Pavlica – associate Prof. Željko Šomodi – consultant Prof. Krste Dimitrovski – consultant
Students of the Faculty involved in the project and their role on the project	-
Project coordinators at partner institutions	-
Short summary of the project (500 to 2000 characters including spaces)	Fabric is an indispensable element in almost every protective article of clothing and makes an important part of many protective products. Numerous and high requirements are placed on protective fabrics. By meeting

these requirements these fabrics enable the protection of the human body under extreme conditions of application where the highest risks of external influences (extreme temperatures, fire, electric current, static electricity, sparks, chemicals, UV radiation, mechanical shocks, etc.) are present. Today, great attention is paid to the production of fabrics for such protection, using new raw materials and surface treatments. Single-layer fabrics with surface treatment, which are today largely used to protect the body from various external influences, have a lack of comfort because they give a sense as if the body were closed in the mould. This project will focus on the fabric design process which will result in the creation of innovative, multi-layered, breathable and lightweight fabrics that will overcome the properties of the previous fabrics in the application for thermal protective clothing. Their protective properties will be based primarily on construction fabric parameters, and also on new high performance fibres that will be woven into the upper fabric on the face side, thus providing properties of specific and strong protection, while the back fabric side will be a lightweight fabric of comfortable handle and airy structure whose characteristics will enhance wear comfort. By interlacing the two mentioned fabrics in the weaving process one compact fabric will be obtained that will have the function of a lightweight and thin composite and reflect the image of a protective high performance fabric. The compactness of such materials taking account of physical-mechanical properties gives them an advantage over single-layer fabrics and well-known composites whereby it is reasonable to achieve properties of exceptionally good strength, abrasion resistance, durability and relevant external conditions, breathability and wear comfort. The complexity of making multilayer interlacing fabrics (double faces, hollow fabrics, 3D fabrics) makes it possible to design fabrics without any limits, but at the same time it is a great challenge for their development, manufacture, scientific research and use. All of the above indicates the possibility of achieving the extraordinary functionality which justifies the use of these innovative woven composites in protective clothing.

Project Code	IP-2016-06-5278
Project Title	Comfort and antimicrobial properties of textiles and footwear
Acronym	ComforMicrobTexFoot
Sources of funding	HRZZ
Applicant/Holder	University of Zagreb Faculty of textile technology
Partner (s)	-
Project implementation period	01.03.2017. – 31.12.2021.
Total value of the project	724.100 kn
Value of the project relating to the Faculty	-
Intensity of support for the project	-
Total grant amount	-
Grant amount belonging to the Faculty	-
Project Manager	Zenun Skenderi
Project Coordinator at the Faculty	-
Other Faculty employees involved in the project and their role on the project	Alka Mihelić-Bogdanić - associate - researcher Zlatko Vrljičak – associate - researcher Antoneta Tomljenović - associate - researcher Sanja Ercegović Ražić - associate - researcher Dragana Kopitar - associate - researcher Jadranka Akalović - associate - researcher Ivana Špelić - associate - researcher Beti Rogina-Car - associate - researcher Franka Žuvela Bošnjak - associate - researcher Željka Pavlović - associate - researcher Juro Živičnjak - associate - researcher Lubos Hes - consultant Tomislav Ivanković - associate - researcher Jelena Peran - associate - researcher Ivan Kraljević - associate - researcher Tariq Mansoor - associate - researcher Suzana Mihanović - associate - researcher
Students of the Faculty involved in the project and their role on the project	-

Project coordinators at partner institutions	-
Short summary of the project (500 to 2000 characters including spaces)	<p>Comfort of knitted fabrics for making clothing and knitted fabrics for making hosiery has not been systematically investigated to a greater extent, whereby all spun nonconventional yarns from man-made cellulosic fibers were used. Structure parameters and properties of nonconventional spun yarns and knitted fabrics, thermophysiological knitted fabric properties in the form of a surface structure and thermophysiological properties of hosiery and footwear on thermal foot will be determined as important factors affecting comfort.</p> <p>The objective of the research part of the antibacterial treatment of the knitted fabric against pathogenic bacteria is to achieve a satisfactory level of antibacterial protection, good stability in daily use and care. Samples of the knitted fabric will be antibacterially processed using new antibacterial agents commercially available and applied to the material by conventional treatment methods or by use of plasma as a new environmentally friendly technology in treatments of textile materials.</p> <p>Antibacterial activity of grey, antibacterial treated and dyed knitted fabrics for making clothing worn next to the skin according to 3 types of bacteria that can be found in the normal physiological flora of human skin, and which can be opportunistic pathogens will be determined. An antibacterial activity of the leather intended for the manufacture of work and protective footwear will be investigated.</p> <p>The evaluation of performance and functional properties of knitted fabric, leather and multi-layered material constructions will be performed.</p> <p>Durability and fastness of the performed treatments on the materials will be defined by simulating the conditions of application – care and use (by implementing repeated cycles of washing and drying, abrasion, bending and colour fastness rate to different influences).</p>

Project Code	UIP-2017-05-8780
Project Title	Hospital Protective Textiles
Acronym	HPROTEX
Sources of funding	Hrvatska zaklada za znanost (HRZZ)
applicant/holder	University of Zagreb Faculty of Textile Technology
Partner (s)	-
Project implementation period	15.03.2018 – 14.09.2023.
Total value of the project	1.743.064,00 Kn
Value of the project relating to the Faculty	-
Intensity of support for the project	85 %
Total grant amount	-
Grant amount belonging to the Faculty	-
Project Manager	Sandra Flinčec Grgac
Project Coordinator at the Faculty	-
Other Faculty employees involved in the project and their role on the project	<p>Assoc. Prof. Anita Tarbuk – Leader of interface phenomena research and cationization</p> <p>Assis. Prof. Tihana Dekanić - Leader of textile care process optimization</p> <p>Snježana Brnada, PhD - The construction of textile yarn and fabrics with low particle generation</p> <p>Franka Žuvela Bošnjak - project team member in charge of antimicrobial treatment, washing</p> <p>Katia Grgić - electrokinetic phenomena, cationic surfactant, care</p> <p>Rajna Malinar – doctorate in the framework of the project</p> <p>Ivana Čorak, - PhD student</p> <p>Prof. dr. sc. Tanja Pušić – consultant</p> <p>Prof. dr. sc. Stana Kovačević – consultant</p> <p>Prof. dr. sc. Andrea Katović - consultant</p> <p>Milica Rihtarec - administrative assistance</p> <p>Anka Vlaho – administrative assistance</p> <p>Ankica Findrik - administrative assistance</p> <p>Marija Županac - administrative assistance</p> <p>Sanja Miletić – legal advice</p> <p>Alena Mudrovčić – professional associate</p> <p>Branka Brkić – professional associate</p>

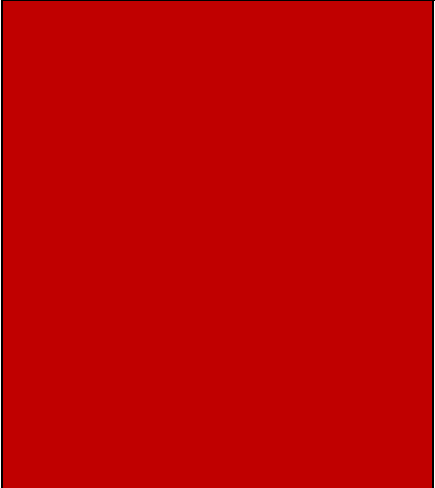
	Eva Magovac – professional associate Zlatko Jurković – technician Srđan Cvetanović - IT support
Students of the Faculty involved in the project and their role on the project	-
Project coordinators at partner institutions	-
Short summary of the project (500 to 2000 characters including spaces)	<p>The project main goals are establishing of interdisciplinary research group, with young doctoral researcher, and Laboratory for Controlled Monitoring of the Crosslinking Process, enabling systematic research and knowledge transfer to solve the problem of generating textile dust, a disease carrier and instrument stoppage causer, in the hospital environment. The textile fabrics of cotton fibers (CO) and their polyester blends (CO/PES) will be produced. The influence of yarn, weave and fabric construction to the generating of textile dust before and after washing cycles will be researched. The conditions of cationization and antimicrobial finishing with quaternary ammonium compounds, β-cyclodextrins with encapsulated antimicrobial agents, and chitosan will be developed to achieve permanency to textile care with minimizing chemical and mechanical damage, thereby contributing to a lower release of textile dust. By setting up a Laboratory, the fabric sorption of the bath with antimicrobial agents will be investigated through interfacial properties (DSA30S), and in situ heat-monitoring (FTIR-ATR GG) of physical-chemical change in fabric will be performed, in order to precisely define the bath composition and process parameters to achieve durable crosslinking. The change in CO and CO/PES during and after treatment, and after the textile care cycles, will be analyzed on crystalline, physico-chemical, morphological and interfacial level using FE-SEM, TGA, FTIR, XRD, MCC, GS-MS, EKA, SFE, CA, MMT, WRV, UV-VIS spectrophotometry. For the purpose of health and environment protection, all newly developed fabrics will be tested on toxicity and, according to the obtained results, their usage in the hospital environment with the proposal of detergent formulations and procedures for their care will be suggested. The finding and implementation of new ideas will be directed towards entrepreneurship with the aim of economic growth, and further research within new project application.</p>

Project Code	HRZZ-DOK-2018-09-4254
Project Title	Bio-innovated polyester material for use in a hospital environment
Acronym	-
Sources of funding	HRZZ; basic funding HRZZ UIP 2017-05-8780
Applicant/Holder	University of Zagreb Faculty of Textile Technology
Partner (s)	
Project implementation period	April 25th 2019 – April 24th 2023
Total value of the project	Doctoral student salary
Value of the project relating to the Faculty	-
Intensity of support for the project	-
Total grant amount	-
Grant amount belonging to the Faculty	-
Project Manager	Anita Tarbuk - mentor
Project Coordinator at the Faculty	-
Other Faculty employees involved in the project and their role on the project	Ivana Čorak – doctoral student
Students of the Faculty involved in the project and their role on the project	-
Project coordinators at partner institutions	-
Short summary of the project (500 to 2000 characters including spaces)	<p>The doctoral thesis is focused on the development of bio-innovated polyester materials for targeted use in the hospital environment. For that purpose, ecological surface pretreatment of polyester fabrics (standard and commercial PES fabric) with enzymes will be investigated with the aim of greater availability of active groups for more efficient binding of biodegradable and biocompatible chitosan polymer for targeted fabric functionalization. The objectives of the doctoral thesis are:</p> <ol style="list-style-type: none"> 1. To carry out ecological pre-treatment of polyester with emphasis on the effectiveness of enzymes (cutinase, lipase, protease, esterase and mixtures of "blend" enzymes) - to investigate the action time, improve hydrophilicity and biodegradability;

2. Functionalization of polyester surface by post-treatment / implementation of chitosan. In accordance with the objectives, it is expected to: 1. Obtain new polyester materials with significantly improved properties compared to the conventional alkaline hydrolysis process and 2. Efficient enzyme pre-treatment of polyester fabrics and chitosan functionalization to achieve thermal, UV protective and antimicrobial properties. During research the characterization of materials by applying physico- chemical methods: by measuring the electrokinetic potential - flow potential, IEP, PZC; specific surface charge and surfactant sorption - potentiometric titration, water sorption - WRV, repetition; SEM - EDX microscopy, FTIR spectroscopy, UV / VIS spectrophotometry, degree of polyester crystallinity - DSC; measuring the contact angle and researching the adhesion forces - goniometer, and testing the primary and protective properties according to international standards will be performed.

Additionally, using the Moisture Management Tester, which enables dynamic 3D liquid tracking, will determine moisture transport, crucial for defining use in a hospital environment.

Project Code	PoC6_1_189
Project Title	Multifunctional differential conductivity meter for textile composites and clothing.
Acronym	-
Sources of funding	World Bank through HAMAG BICRO
Applicant/Holder	Faculty of textile Technology
Partner (s)	-
Project implementation period	1. 7. 2016. - 30. 10. 2017.
Total value of the project	Amount of contracted funds: HRK 313,750.00 Amount of contracted own funds (salaries): HRK 137,837.88 Total contracted funds: HRK 451,587.88
Value of the project relating to the Faculty	Amount of contracted own funds (salaries): HRK 137,837.88
Intensity of support for the project	70 % (Amount of contracted funds)
Total grant amount	313.750,00 kn
Grant amount belonging to the Faculty	-
Project Manager	Dubravko Rogale
Project Coordinator at the Faculty	-
Other Faculty employees involved in the project and their role on the project	Snježana Firšt Rogale - member Željko Knezić - member Goran Čubrić - member
Students of the Faculty involved in the project and their role on the project	-
Project coordinators at partner institutions	-
Short summary of the project (500 to 2000 characters including spaces)	A differential thermal conductometer for textile composites and clothing was developed on the project. A conductometer is used to measure the contact resistance of heat to pass through the textile fabric, textile composites or garments, sample thickness, compressibility, thermal conductivity at different specific pressures and temperature drop gradients within composite or garment layers. An integral part of a differential thermal conductometer is



a device for measuring composite temperatures. The purpose of this device is to determine the temperature difference between the layers of the composite and the garment, to measure the relative humidity of the air within the samples and the pulse of the garment wearer. The composite temperature measuring device is used for measurements on a thermal manikin, a hot plate and for measuring the thermophysiological properties of garments while wearing the tested garment on humans as well. An integrated measuring system for complete measurements of the thermal properties of clothing has been installed at the Faculty of Textile Technology.

Project Code	-
Project Title	Bio-innovative Polyesters
Acronym	-
Sources of funding	Ministry of Science and Education (co-financing of scientific research projects within the joint Croatian-Serbian cooperation), basic funding HRZZ UIP 2017-05-8780
Applicant/Holder	University of Zagreb Faculty of Textile Technology
Partner (s)	University of Niš, Faculty of Technology Leskovac
Project implementation period	May 1st 2019 – Dec 31st 2021
Total value of the project	3000 €
Value of the project relating to the Faculty	3000 €
Intensity of support for the project	-
Total grant amount	-
Grant amount belonging to the Faculty	-
Project Manager	Anita Tarbuk
Project Coordinator at the Faculty	-
Other Faculty employees involved in the project and their role on the project	Sandra Flinčec Grgac – associate Tihana Dekanić – associate Tanja Pušić – associate Lea Botteri – associate Katia Grgić – associate Ivana Čorak - associate
Students of the Faculty involved in the project and their role on the project	-
Project coordinators at partner institutions	Dragan Đorđević
Short summary of the project (500 to 2000 characters including spaces)	Scientific research in the project is related to the development of bio-innovated polyesters for the purpose of better functionalization and / or biodegradation. For this purpose, ecological modification and / or treatment of polyester materials (standard polyester fabric; poly (ethylene terephthalate), PET; polylactide, PLA) with enzymes will be investigated as well as the possibility of chitosan incorporation. Research will focus on enzymes (cutinases, lipases, proteases and esterases) that hydrolyze polyesters especially on the fiber surface thus creating new functional

groups to increase reactivity. Mixtures ("blend") of enzymes can also be used for hydrolysis, and so the enzymes will be used alone or in combination with textile auxiliaries and /or advanced processing technologies (mechanics, ultrasound). The surface modification will be carried out first on the most commonly used PET materials and then on the standard polyester fabric. Additionally, given the growing market demands for increased use of renewables, PLA hydrolysis will be investigated as well. For textile applications, enzymatic hydrolysis should be limited to the surface only. On the other hand, an efficient enzymatic reaction may be useful to accelerate the degradation necessary for textile recycling. In parallel with surface functionalization, the possibility of incorporating sub- micro chitosan particles that would give the polyester material multifunctional properties with emphasis on antimicrobial, slowed flammability and UV protection will be researched.

Material characterization will be performed using SEM - EDX microscopy, FTIR-ATR spectroscopy, investigation of interfacial phenomena, and examination of primary and protective properties according to international standards. Based on the obtained experimental results, the optimal process parameters will be defined.

Project Code	-
Project Title	Development of smart clothing for people with dementia
Acronym	-
Sources of funding	Ministry of Science and Education
Applicant/Holder	Faculty of Textile Technology
Partner (s)	Faculty of Mechanical Engineering, University of Maribor
Project implementation period	1. 1. 2018. - 31. 12. 2019.
Total value of the project	4.000,00 €
Value of the project relating to the Faculty	2.000 €
Intensity of support for the project	-
Total grant amount	2.000 €
Grant amount belonging to the Faculty	-
Project Manager	Snježana Firšt Rogale
Project Coordinator at the Faculty	-
Other Faculty employees involved in the project and their role on the project	Dubravko Rogale – associate Željko Knezić – associate Martina Bobovčan Marčelić – associate Daniel Časar Veličan - associate
Students of the Faculty involved in the project and their role on the project	Damir Begić
Project coordinators at partner institutions	Software development

**Short summary of the project
(500 to 2000 characters
including spaces)**

Smart clothing for people with dementia was developed in the project. This type of clothing has appropriate design solutions of functionality and applicability. A sensor system and a system for data collection, storage, management and evaluation have been implemented.

Smart clothing for people diagnosed with dementia serves as an everyday garment with a reminder of the user's daily routine.

The built-in reminder reminds the patient of the need to perform specific activities at a certain time during the day, for example, personal hygiene, dressing, breakfast, going to the doctor, taking medication and the like.

It serves as a friend to a person suffering from dementia or Alzheimer-like diseases, which has the characteristic of the initial stage of the disease with short-term memory. This type of clothing uses state-of-the-art communication systems and audio-visual components for sound attention and textual display of the activity that a person should perform.

The remainder is made in advance, in collaboration with the doctor and the patient's caregiver.

The developed prototype of smart clothing for people with dementia has an active character, adapted to the needs of people with dementia, and has a positive impact on individuals and society, health and well-being and contributed to the development of the knowledge society in accordance with Horizon 2020 guidelines.

Project Code	KK.01.1.1.04.0091
Project Title	Design of Advanced Biocomposites from Energy Sustainable Sources
Acronym	BIOCOMPOSITES
Sources of funding	ESIF, Operational programme Competitiveness and Cohesion
Applicant/Holder	University of Zagreb Faculty of Textile Technology
Partner (s)	-
Project implementation period	20.12.2019.-20.12.2022.
Total value of the project	8.025.066,65 HRK
Value of the project relating to the Faculty	8.025.066,65 HRK
Intensity of support for the project	100%
Total grant amount	5.955.013,92 HRK
Grant amount belonging to the Faculty	4.396.499,48 HRK
Project Manager	Prof. Sandra Bischof
Project Coordinator at the Faculty	Prof. Sandra Bischof
Other Faculty employees involved in the project and their role on the project	<p>Bischof Sandra – project leader and leader of WP Project Management</p> <p>Vujasinović Edita – leader of WP 2 Design & Characterisation of Biocomposites</p> <p>Lea Botteri – leader of WP Dissemination</p> <p>Zorana Kovačević – team member</p> <p>Eva Magovac – team member</p> <p>Katia Grgić – team member</p> <p>Ksenija Višić – team member (PhD student)</p> <p>Franjo Benjak – team member (supervision of activities)</p> <p>Nikolina Mamlić – team member (project administration)</p>
Students of the Faculty involved in the project and their role on the project	<p>Ines Dobrinić – Undergraduate Thesis</p> <p>Lana Car – Master Thesis</p> <p>Gabriela Vanja – Master Thesis</p>

Project coordinators at partner institutions	Prof. Tajana Krička – University of Zagreb Faculty of Agronomy
Short summary of the project (500 to 2000 characters including spaces)	Design of advanced biocomposites from energy sustainable sources (BIOCOMPOSITES) is a project that will design and manufacture advanced biocomposite materials with improved properties for a wide range of applications in the economic sector with complete utilization of raw materials through biofuel production based on development and application of new technological solutions. Innovations and developed technologies will be transferred to the scientific and business society while respecting the principles of resource efficiency and the circular economy.

Project Code	KK.01.1.1.02.0024
Project Title	Modernisation of teh Infrastructure of the Textile Science Research Centre
Acronym	MI-TSRC
Sources of funding	ESIF, Operational programme Competitiveness andCohesion
Applicant/Holder	University of Zagreb Faculty of Textile Technology
Partner (s)	-
Project implementation period	16.05.2018.-16.03.2021.
Total value of the project	11 480 235.86 HRK
Value of the project relating to the Faculty	11 480 235.86 HRK
Intensity of support for the project	100%
Total grant amount	10 642 529.44 HRK
Grant amount belonging to the Faculty	10 642 529.44 HRK
Project Manager	Prof. Sandra Bischof
Project Coordinator at the Faculty	Prof. Sandra Bischof
Other Faculty employees involved in the project and theirrole on the project	<p>Bischof Sandra – project leader and leader of WP Management</p> <p>Vujasinović Edita – leader of WP 1 Renovation of thebuilding</p> <p>Flinčec Grgac Sandra – leader of WP 2 – Procurement of equipment and training</p> <p>Pušić Tanja – leader of WP 3 Organisation reform</p> <p>Martinia Ira Glogar – leader of WP Dissemination</p> <p>Sutlović Ana – team member</p> <p>Tarbuk Anita – team member</p> <p>Tihana Dekanić – team member</p> <p>Zorana Kovačević – team member</p> <p>Eva Magovac – team member</p> <p>Brkić Branka – team member</p> <p>Rihtarec Milica – team member – finantional administration</p> <p>Nikolina Mamlić – project administrator</p>

Students of the Faculty involved in the project and their role on the project	-
Project coordinators at partner institutions	-
Short summary of the project (500 to 2000 characters including spaces)	<p>The project Modernization of the Infrastructure of the Textile Science Research Center (MI-TSRC) will transform the University of Zagreb Faculty of Textile Technology into an internationally recognized institution through organizational reform and equipment with state-of-the-art research equipment.</p> <p>Conditions for the novel research on advanced materials and advanced technologies will be created, resulting with innovations and transfer of knowledge to the economic sector, contributing to cross-sectoral cooperation, interdisciplinary innovation, fulfilment of market demands and ultimately to economic growth.</p>

Project Code	KK.01.2.1.02.0064
Project Title	Development of multifunctional non-flammable woven fabrics for dual purpose
Acronym	-
Sources of funding	European Regional Development Fund
Applicant/Holder	Čateks d.d.
Partner (s)	University of Zagreb Faculty of Textile Technology
Project implementation period	17.08.2020. - 16.08.2023.
Total value of the project	27.885.187,86 HRK
Value of the project relating to the Faculty	4.120.618,28 HRK
Intensity of support for the project	42%
Total grant amount	11.660.948,54 HRK
Grant amount belonging to the Faculty	3.239.176,25 HRK
Project Manager	Nino Kerman
Project Coordinator at the Faculty	Assist. Prof. Ivana Schwarz, Ph.D.
Other Faculty employees involved in the project and their role on the project	Prof. Stana Kovačević, Ph.D. - researcher Prof. Tanja Pušić, Ph.D. - researcher Prof. Martinia Ira Glogar, Ph.D. - researcher Snježana Brnada, Ph.D. - researcher Zlatko Jurković – technical associate Ana Kalazić, mag.ing.techn.text. – expert associate Tea Bardov, mag.ing.techn.text. – expert associate Tea Kaurin, mag. ing. techn. text. – expert associate Veronika Lovreškov, mag.ing.techn.text. – expert associate
Students of the Faculty involved in the project and their role on the project	-
Project coordinators at partner institutions	-
Short summary of the project (500 to 2000 characters including spaces)	Collaborative project of the applicant Čateks d.d. and partner University of Zagreb Faculty of Textile Technology "Development of multifunctional non-flammable woven fabrics for dual purpose" aims to develop multifunctional woven fabric that will optimally meet the requirements of

the global market and unite the characteristics of non-flammability (protection against heat), comfort, breathability, with the possibility of printing.

During the industrial research phase, the concept of developing a multifunctional non-flammable woven fabric will be set up; possibilities and ways to improve the properties of currently available multifunctional non-flammable woven fabrics in all segments of the technological process of making such high-performance woven fabrics, designing fabrics at the micro, meso and macro level and developing finishing processes for making market-competitive woven fabric prototypes will be explored; laboratory testing and individual validation of key components for laboratory prototypes of multifunctional non-flammable woven fabrics will be carried out, and the technological concept and development of laboratory prototypes will be defined. During the phase of experimental development, a commercially usable prototype will be developed, validation of the technological process will be carried out and the prototype will be tested in an accredited laboratory that will simulate a real application conditions. The Project result will be protected through trademark registration in domestic and targeted international markets.

The final Project product will be a fully developed and tested multifunctional woven fabric, ready for commercialization. The product will be a novelty in the global market.

Project Code	KK.05.1.1.02.0016
Project Title	Production of food, biocomposites and biofuels from cereals in circular economy
Acronym	KLIMA
Sources of funding	ESIF, Operational programme Competitiveness and Cohesion
Applicant/Holder	University of Zadar
Partner (s)	University of Zagreb Faculty of Agronomy University of Zagreb Faculty of Textile Technology
Project implementation period	01.09.2019.-01.09.2023.
Total value of the project	3.398.322,29 HRK
Value of the project relating to the Faculty	538.942,52
Intensity of support for the project	85% Ministry of Economy and Sustainable Development ; 15% Environmental Protection and Energy Efficiency Fund
Total grant amount	2.888.573,93 HRK
Grant amount belonging to the Faculty	458.101,14 HRK
Project Manager	Prof. Tajana Krička, Faculty of Agronomy
Project Coordinator at the Faculty	Prof. Sandra Bischof
Other Faculty employees involved in the project and their role on the project	Bischof Sandra – project leader at partner institution Vujasinović Edita – team member Zorana Kovačević – team member Marijana Pavunc Samaržija – team member
Students of the Faculty involved in the project and their role on the project	Anja Zergollern – Undergraduate Thesis
Project coordinators at partner institutions	Prof. Tajana Krička – University of Zagreb Faculty of Agronomy Prof. Dijana Vican – University of Zadar
Short summary of the project (500 to 2000 characters)	The project includes applied research of correct agrotechnical measures for old and new wheat and barley varieties and maize hybrids to determine the optimal ratios

including spaces)

between grain and biomass as well as the presence of mycotoxins.

In addition to quantity, the grain quality of cereals for food and nutrition will be determined, as well as carbon sequestration into soil and plant, so as the quality of biomass for biocomposites, biofilters, second generation of bioethanol and solid biofuels from production residues.

By exploiting the residues, potential waste will become a raw material and the process of circular bioeconomy will be a close loop. New knowledge will be transferred to stakeholders in vulnerable sectors and awareness of the general public about the possibilities of mitigating the negative effects of climate change will be raised.

Project Code	UP.03.1.1.04.0024
Project Title	Development and implementation of professional practice at the Faculty of Textile Technology
Acronym	RAST
Sources of funding	ESI fonds
Applicant/Holder	University of Zagreb Faculty of Textile Technology
Partner (s)	University of Zagreb Faculty of Organization and Informatics; Croatian Chamber of Economy
Project implementation period	09.03.2020. – 09.03.2023.
Total value of the project	3.756.400,57
Value of the project relating to the Faculty	3.756.400,57
Intensity of support for the project	0%
Total grant amount	3.756.400,57
Grant amount belonging to the Faculty	3.557.195,05
Project Manager	Assoc. Prof. Goran Čubrić, PhD
Project Coordinator at the Faculty	-
Other Faculty employees involved in the project and their role on the project	<p>Antoneta Tomljenović – Project Element Manager 1; Slavica Bogović; Juro Živičnjak; Dragana Kopitar; Andrea Pavetić; Gordana Pavlović; Iva Rezić; Ivana Schwarz; Maja Somogyi Škoc; Emilija Zdraveva (Tomislav Rolich) – Members of the working group for the development of professional practice; Bosiljka Šaravanja – associate in the organization of professional excursions; Marin Sovar – graphic designer on the project; Gorana Bosnić Krznar – monitoring and analysis of graduates' employability; Renata Hrženjak; Martinia Ira Glogar; Jasminka Končić Dragana Kopitar; Koraklja Kovač Dugandžić; Andrea Pavetić; Irena Šabarić; Ivana Salopek Čubrić; Maja Somogyi Škoc; Marin Sovar – members of the working group for the establishment of the Center for Careers and Professional Practice and the organization and implementation of professional practice; Sanja Projić – administrative support for the work of the Center for Careers and Professional Practice; Ivana Salopek Čubrić – coordinator of professional practice promotion; Daniel Domović; Željka Pavlović – Establishment and maintenance of the Center's website and social networks; Ivana Salopek Čubrić – publicity and visibility manager; Franjo Benjak – financial manager; Martina Fruk – preparation of documentation for</p>

	reporting; Milica Rihtarec – administrative support for the implementation of project activities
Students of the Faculty involved in the project and their role on the project	-
Project coordinators at partner institutions	University of Zagreb Faculty of Organization and Informatics - Katarina Pažur Aničić Croatian Chamber of Economy – Jagoda Divić
Short summary of the project (500 to 2000 characters including spaces)	The project Development and implementation of professional practice at TTF will introduce the elective course Professional Practice for undergraduate and graduate studies and thus enable students to develop work skills. The implementation of the project will also develop a model of professional practice, strengthen the competencies of teaching and non-teaching staff and increase the employability of students through the acquisition of work experience during the implementation of professional practice. Also, a Center for Careers and Professional Practice will be established to provide support to students in achieving the necessary competencies for early career development and entering the labor market.

Project Code	UP.03.1.1.02.0022
Project Title	Internationalization of the doctoral study Textile Science and Technology
Acronym	-
Sources of funding	EC - European Commission, MSE - Ministry of Science and Education
Applicant/Holder	University of Zagreb Faculty of Textile Technology
Partner (s)	The University Computing Centre (SRCE)
Project implementation period	2018-10-12 - 2021-10-12
Total value of the project	1.787.850,91 HRK
Value of the project relating to the Faculty	1.787.850,91 HRK
Intensity of support for the project	Grants 100% (European Union funds (85%), State Budget funds(15%).
Total grant amount	Grants 100% (European Union funds (85%), State Budget funds(15%).
Grant amount belonging to the Faculty	1.787.850,91 HRK
Project Manager	Vesna Marija Potočić Matković (MBZ: 255301, CROSBİ: 21284) -University of Zagreb Faculty of Textile Technology - Project leader [2018-10-12 - 2021-10-12]
Project Coordinator at the Faculty	Vesna Marija Potočić Matković (MBZ: 255301, CROSBİ: 21284) -University of Zagreb Faculty of Textile Technology - Project leader [2018-10-12 - 2021-10-12]
Other Faculty employees involved in the project and theirrole on the project	Ivana Salopek Čubrić (MBZ: 274971, CROSBİ: 25375) - University of Zagreb Faculty of Textile Technology - Associate [2018-10-12 -2021-10-12] Franjo Benjak - University of Zagreb Faculty of Textile Technology - Associate [2018-10-12 - 2021-10-12] Milica Rihtarec - University of Zagreb Faculty of Textile Technology - Associate [2018-10-12 - 2021-10-12] Ljiljana Venier - University of Zagreb Faculty of Textile Technology - Associate [2018-10-12 - 2021-01-31] Sanja Projić - University of Zagreb Faculty of Textile Technology - Associate [2021-02-01 - 2021-10-12]

Željko Penava (MBZ: 170666, CROSBİ: 26654) - University of Zagreb Faculty of Textile Technology - Associate [2018-10-12 -2021-10-12]

Marin Sovar (MBZ: 331070, CROSBİ: 10922) - University of Zagreb Faculty of Textile Technology - Associate [2018-12-01 -2018-12-31]

Sandra Flinčec Grgac (MBZ: 275022, CROSBİ: 22473) - University of Zagreb Faculty of Textile Technology - Associate [2019-01-28 -2021-10-12]

Budimir Mijović (MBZ: 173291, CROSBİ: 13923) - University of Zagreb Faculty of Textile Technology - Associate [2019-01-28 -2020-11-16]

Dubravko Rogale (MBZ: 119041, CROSBİ: 11839) - University of Zagreb Faculty of Textile Technology - Associate [2019-01-28 - 2020-11-16]

Sandra Bischof (MBZ: 187421, CROSBİ: 14547) - University of Zagreb Faculty of Textile Technology - Associate [2019-01-28 -2020-11-16]

Antoneta Tomljenović (MBZ: 255292, CROSBİ: 28565) - University of Zagreb Faculty of Textile Technology - Associate [2019-01-28 - 2020-11-16]

Iva Rezić (MBZ: 274993, CROSBİ: 25251) - University of Zagreb Faculty of Textile Technology - Associate [2019-01-28 - 2020-11-16]

Slavica Bogović (MBZ: 199222, CROSBİ: 15072) - University of Zagreb Faculty of Textile Technology - Associate [2019-01-28 -2020-11-16]

Dragana Kopitar (MBZ: 275000, CROSBİ: 22804) - University of Zagreb Faculty of Textile Technology - Associate [2019-01-28 -2020-11-16]

Ivana Schwarz (MBZ: 274960, CROSBİ: 31636) - University of Zagreb Faculty of Textile Technology - Associate [2019-01-28 -2020-11-16]

Snježana Firšt Rogale (MBZ: 238780, CROSBİ: 17656) - University of Zagreb Faculty of Textile Technology - Associate [2020-12-01 -2021-10-12]

Tanja Pušić (MBZ: 134124, CROSBİ: 12296) - University of Zagreb Faculty of Textile Technology - Associate [2020-12-01 - 2021-10-12]

Anica Hursa Šajatović (MBZ: 238791, CROSBİ: 17717) - University of Zagreb Faculty of Textile Technology - Associate [2020-12-01 -

	<p>2021-10-12] Tomislav Rolich (MBZ: 232766, CROSBI: 17295) - University of Zagreb Faculty of Textile Technology - Associate [2020-12-01 -2021-10-12] Sanja Ercegović Ražić (MBZ: 275033, CROSBI: 23618) - University of Zagreb Faculty of Textile Technology - Associate [2020-12-01 -2021-10-12] Anita Tarbuk (MBZ: 274945, CROSBI: 28274) - University of Zagreb Faculty of Textile Technology - Associate [2020-12-01 -2021-10-12] Katarina Nina Simončič (MBZ: 275070, CROSBI: 25480) - University of Zagreb Faculty of Textile Technology - Associate [2020-12-01 - 2021-10-12]</p>
Students of the Faculty involved in the project and their role on the project	<p>Anja Ludaš (MBZ: 386365, CROSBI: 37697) - University of Zagreb Faculty of Textile Technology - Associate [2020-12-01 - 2021-10-12]</p>
Project coordinators at partner institutions	<p>Sandra Kučina Softić (MBZ: 381922, CROSBI: 35770) - The University Computing Centre (SRCE) - Project leader at institution [2018-10-12 - 2021-10-12]</p>
Short summary of the project (500 to 2000 characters including spaces)	<p>The doctoral study Textile Science and Technology will be internationalized by developing and implementation of study in English, introducing modern approaches to teaching, raising the language competencies of teaching and non-teaching staff, increasing student mobility, engagement of visiting professors and promotion at education fairs. The implemented internationalization measures will result in an increase in the number of enrollments of foreign students (30%).</p>

Project Code	HR.3.1.15-0026
Project Title	Development of qualification standards and undergraduate study programs at the Faculty of Textile Technology
Acronym	-
Sources of funding	EC - European Commission, MSE - Ministry of Science and Education
Applicant/Holder	University of Zagreb Faculty of Textile Technology
Partner (s)	University of Zagreb Faculty of Organization and Informatics Varaždin University Computing Center (Srce) Croatian Employers' Association (HUP) Croatian Textile Engineering Association (HIST)
Project implementation period	2015-06-18 - 2016-10-18
Total value of the project	1.669.467,26 HRK
Value of the project relating to the Faculty	1.389.947,20 HRK
Intensity of support for the project	Grants 100% (European Union funds (85%), State Budget funds(15%).
Total grant amount	1.669.467,26 HRK
Grant amount belonging to the Faculty	1.389.947,20 HRK
Project Manager	Vesna Marija Potočić Matković (MBZ: 255301, CROSBI: 21284) - University of Zagreb Faculty of Textile Technology - Project leader [2015-06-18 - 2016-10-18]
Project Coordinator at the Faculty	Vesna Marija Potočić Matković (MBZ: 255301, CROSBI: 21284) - University of Zagreb Faculty of Textile Technology - Project leader [2015-06-18 - 2016-10-18]
Other Faculty employees involved in the project and their role on the project	Branka Vojnović (MBZ: 238844, CROSBI: 21401) - University of Zagreb Faculty of Textile Technology - Associate [2015-06-18 - 2016-10-18] Sanja Ercegović Ražić (MBZ: 275033, CROSBI: 23618) - University of Zagreb Faculty of Textile Technology - Associate [2015-06-18 - 2016-10-18] Goran Čubrić (MBZ: 280411, CROSBI: 22365) - University of Zagreb Faculty of Textile Technology - Associate [2015-06-18 - 2016-10-18] -

2016-10-18]

Livio Racane (MBZ: 236842, CROSBİ: 17549) - University of Zagreb Faculty of Textile Technology - Associate [2015-06-18 -2016-10-18]

Ivana Salopek Čubrić (MBZ: 274971, CROSBİ: 25375) - University of Zagreb Faculty of Textile Technology - Associate [2015-06-18 -2016-10-18]

Željko Penava (MBZ: 170666, CROSBİ: 26654) - University of Zagreb Faculty of Textile Technology - Associate [2015-06-18 -2016-10-18]

Snježana Brnada (MBZ: 315952, CROSBİ: 24976) - University of Zagreb Faculty of Textile Technology - Associate [2015-10-01 - 2016-07-31]

Edita Vujasinović (MBZ: 170644, CROSBİ: 29607) - University of Zagreb Faculty of Textile Technology - Associate [2015-12-01 - 2016-10-18]

Snježana Firšt Rogale (MBZ: 238780, CROSBİ: 17656) - University of Zagreb Faculty of Textile Technology - Associate [2015-12-01 -2016-10-18]

Andrea Pavetić (MBZ: 232792, CROSBİ: 24267) - University of Zagreb Faculty of Textile Technology - Associate [2015-12-01 -2016-10-18]

Ana Sutlović (MBZ: 232770, CROSBİ: 21309) - University of Zagreb Faculty of Textile Technology - Associate [2015-12-01 -2016-10-18]

Anica Hursa Šajatović (MBZ: 238791, CROSBİ: 17717) - University of Zagreb Faculty of Textile Technology - Associate [2015-12-01 -2016-10-18]

Alica Grilec Kaurić (MBZ: 313553, CROSBİ: 24996) - University of Zagreb Faculty of Textile Technology - Associate [2015-12-01 - 2016-07-31]

Suzana Kutnjak Mravlinčić (MBZ: , CROSBİ:) - University of Zagreb Faculty of Textile Technology - Associate [2015-12-01 -2016-07-31]

Jadranka Akalović (MBZ: , CROSBİ:) - University of Zagreb Faculty of Textile Technology - Associate [2015-12-01 - 2016-07-31]

Sandra Bischof (MBZ: 187421, CROSBİ: 14547) - University of Zagreb Faculty of Textile Technology - Associate [2016-04-01 -2016-10-18]

Mario Cetina (MBZ: 132844, CROSBİ: 12254) - University of

	<p>Zagreb Faculty of Textile Technology - Associate [2016-04-01 -2016-10-18]</p> <p>Tomislav Rolich (MBZ: 232766, CROSBI: 17295) - University of Zagreb Faculty of Textile Technology - Associate [2016-04-01 -2016-10-18]</p> <p>Martinia Ira Glogar (MBZ: 238800, CROSBI: 17658) - University of Zagreb Faculty of Textile Technology - Associate [2016-04-01 - 2016-10-18]</p> <p>Slavenka Petrak (MBZ: 238822, CROSBI: 17701) - University of Zagreb Faculty of Textile Technology - Associate [2016-04-01 -2016-10-18]</p> <p>Slavica Bogović (MBZ: 199222, CROSBI: 15072) - University of Zagreb Faculty of Textile Technology - Associate [2016-04-01 -2016-10-18]</p> <p>Krešimir Purgar (MBZ: 336865, CROSBI: 31722) - University of Zagreb Faculty of Textile Technology - Associate [2016-04-01 -2016-10-18]</p> <p>Jasminka Končić (MBZ: 275066, CROSBI: 22798) - University of Zagreb Faculty of Textile Technology - Associate [2016-04-01 -2016-10-18]</p> <p>Koraljka Kovač Dugandžić (MBZ: 331055, CROSBI: 30778) - University of Zagreb Faculty of Textile Technology - Associate [2016-04-01 - 2016-10-18]</p> <p>Helena Schultheis Edgeler (MBZ: 275055, CROSBI: 25444) - University of Zagreb Faculty of Textile Technology - Associate [2016-04-01 - 2016-10-18]</p> <p>Franjo Benjak (MBZ: , CROSBI:) - University of Zagreb Faculty of Textile Technology - Associate [2015-08-18 - 2016-10-18]</p> <p>Jelena Peran (MBZ: 358926, CROSBI: 33870) - University of Zagreb Faculty of Textile Technology - Administrator [2015-08-18 - 2016-09-18]</p>
<p>Students of the Faculty involved in the project and their role on the project</p>	<p>-</p>
<p>Project coordinators at partner institutions</p>	<p>Daliborka Pašić (MBZ: , CROSBI:) - The University of Zagreb - Associate [2015-06-18 - 2016-10-18]</p> <p>Luka Keller (MBZ: 298042, CROSBI: 10321) - The University of Zagreb - Associate [2015-08-18 - 2016-10-18]</p> <p>Nina Begičević Ređep (MBZ: 277814, CROSBI: 25794) - The Faculty of Organization and Computer Science, Varaždin - Project leader at institution [2015-08-01 - 2016-10-18]</p>

	Sandra Kučina Softić (MBZ: 381922, CROSB: 35770) - The University Computing Centre (SRCE) - Project leader at institution[2015-06-18 - 2016-10-18]
Short summary of the project (500 to 2000 characters including spaces)	The project "Development of qualification standards and undergraduate study programs at the Faculty of Textile Technology" will develop occupational standards and qualification standards and new undergraduate programs with proper application of CROQF and ECTS, proper calculations of student workload, development of professional practice and innovative methods of teaching, didactic and interactive materials will be improved, which will lead to raising e-learning to a new level. Accordingly, a teacher training program in the application of the concept of learning outcomes and innovative teaching methods will be implemented.

Project Code	COST CA16227
Project Title	Investigation and Mathematical Analysis of Avant-garde Disease Control via Mosquito Nano-Tech-Repellents
Acronym	COST IMAAC
Sources of funding	EU Program -Project funding
Applicant/Holder	Mathematics research center (CIMAT)
Partner (s)	Belgium, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Finland, France, FYR Macedonia,, Germany, Greece, Iceland, Italy, Netherlands, Poland, Poland,Portugal, Romania, Serbia, Spain, United Kingdom *** Greenacre Chemicals Private Limited, NC State University, N2 Compliance Ltd., University of Stellenbosch, Anastasia Mosquito Control District, AFRIMAC
Project implementation period	21.09.2017. – 21.09.2021.
Total value of the project	483.490,84 EUR
Value of the project relating to the Faculty	-
Intensity of support for the project	-
Total grant amount	-
Grant amount belonging to the Faculty	-
Project Manager	Peyman Ghaffari
Project Coordinator at the Faculty	Ana Marija Grancarić
Other Faculty employees involved in the project and theirrole on the project	Lea Botteri – researcher
Students of the Faculty involved in the project and their role on the project	-
Project coordinators at partner institutions	Greenacre Chemicals Private Limited - Vinayak Thakar NC State University - Marian McCord N2 Compliance Ltd. - Caroline Dykstra Nielsen Arizona State University - Kiril Hristovski University of Stellenbosch - Adine Gericke Anastasia Mosquito Control District- Rui-De Xue

AFRIMAC - Carlos David Gutierrez Robaina

**Short summary of the project
(500 to 2000 characters
including spaces)**

IMAAC aims at investigation and mathematical analysis of the effect of avant-garde control measures in vector-borne diseases involving day-time active mosquitos transmitting diseases like dengue, Zika, chikungunya and yellow fever. The control measures involve new technologies in textile and paint products based on nano- and micro-particles releasing repellents or pesticides in well portioned dosage. The study will also be expanded to scenarios using vaccines in combination with mentioned control techniques. The main focus will be on dengue fever transmitted via *Aedes aegypti* and *Aedes albopictus* mosquitoes in synergy with existing EU-projects, but the application will have also positive effects on other vector-borne diseases. Nano- and micro-particles are used in textile production for various purposes, and can be used to release chemicals like repellents and insecticides in a well-controlled rate. First attempts in this direction have been made, but no efficacy studies could be performed yet. The spectrum of combinations of nano- or micro-particles, repellents, insecticides and types of textiles (or paint) has not been well studied. Especially, efficacy studies in cases using these control measures in combination with vaccines are uncharted territories and mathematical modelling has to be developed. This Action aims to bring together experts from epidemiology, biostatistics, mathematics, biology, nano-technology, chemical and textile engineering to implement new techniques to combat mosquito transmitted vector-borne diseases. The key question remains, in how far such avant-garde measures can help to reduce the disease burden, eventually in collaboration with existing vaccines which turned out to have only limited efficacy on their own.

Project Code	COST MP1105
Project Title	Sustainable flame retardancy for textiles and related materials based on nanoparticles substituting conventional chemicals
Acronym	FLARETEX
Sources of funding	EU Program -Project funding COST - European Cooperation in Science and Technology
Applicant/Holder	Ghent University, Belgium
Partner (s)	DITF Denkendorf, Germany, Kaunas University of Technology, Lithuania, ENSCL, France, FISIFE SA, Portugal, National R&D Institute for Textiles and Leather, Romania, EOC Group, Belgium, Ecole des Mines de Alès/ARMINES, France, ICL-IP Europe B.V., Netherlands, Empa, Switzerland, VTT Technical Research Centre of Finland, Finland, ICL-IP Europe B.V., Netherlands, Institute of Mechanics, Bulgarian, Politecnico di Torino, Italy, Inotex, Czech Republic, INEGI - Institute of Mechanical Engineering and Industrial, Portugal, Kaunas University of Technology, Lithuania, Tampere University of Technology, Finland, Deutsches Textilforschungszentrum Nord-West e.V., Germany, Laboratory of Plant Biotechnologies, Czech Republic, National R&D Institute for Nonferrous and Rare Metals, Romania, University of Bergamo, Italy, TexClubTec, Italy, Institute of Natural Fibres and Medicinal Plants, Poland
Project implementation period	23.05.2012. – 22.05.2016.
Total value of the project	0,00 EUR
Value of the project relating to the Faculty	-
Intensity of support for the project	-
Total grant amount	-
Grant amount belonging to the Faculty	-
Project Manager	Paul Kiekens
Project Coordinator at the Faculty	Ana Marija Grancarić

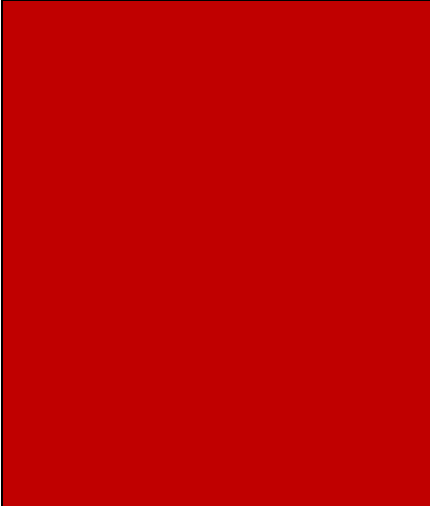
Other Faculty employees involved in the project and their role on the project	Anita Tarbuk – rearscher Lea Botteri - rearscher
Students of the Faculty involved in the project and their role on the project	-
Project coordinators at partner institutions	-
Short summary of the project (500 to 2000 characters including spaces)	Replacement of existing flame retardants (FR) with sustainable and environmentally friendly alternatives for textiles in domestic, safety, transport (automotive, rail, aerospace and marine), civil emergency and military, construction and other industries requires a multidisciplinary approach from textile technology to the physics and chemistry of fire. This COST Action will create an international multidisciplinary scientific and technology network on Sustainable Flame Retardancy, developing new innovative flame retardants with low fire toxicity and environmental impacts and halogen-free. A COST Action is ideal to promote the existing cooperation in flame retardancy research, in order to accelerate growth to keep Europe leading the world in this crucial area, taking into account sustainability, safety and health, and to facilitate its commercial exploitation in Europe.

Project Code	FP7-NMP-2010-3,4-1- LARGE
Project Title	One-shot Manufacturing on large scale of 3D up graded panels and stiffeners for lightweight thermoplastic textile composite structures
Acronym	MAPICC 3D
Sources of funding	EU funding - FP7
Applicant/Holder	Ecole Nationale Supérieure des Arts et Industries Textiles, ENSAIT, Roubaix, France
Partner (s)	<p>ARMINES, <i>Association pour la Recherche et le Développement des Méthodes et Processus Industriels</i>, Paris, France</p> <p>POLIMI, <i>Politecnico di Milano</i>, Milano, Italy</p> <p>RTU, <i>Rīgas Tehniskā Universitāte</i>, Riga, Latvia</p> <p>TTF, <i>Sveučilište u Zagrebu Tekstilno-Tehnološki fakultet</i>, Zagreb, Croatia</p> <p>TUD, <i>Technische Universität Dresden</i>, Dresden, Germany</p> <p>ALSTOM TRANSPORT SA, Saint Ouen, France</p> <p>ASSOCIATION ARIA, Marcq en Baroeul, France</p> <p>COEXPAIR, Namur, Belgium</p> <p>DYLCO, Bertry, France</p> <p>ESI GmbH, Eschborn, Germany</p> <p>ESI Group, Rungis, France</p> <p>P-D GLASSEIDE GMBH OSCHATZ, Oschatz, Germany</p> <p>LATVIJAS FINIERIS, Riga, Latvia</p> <p>MECACORP, Issy-les-Moulineaux, France</p> <p>REDEN, Hengelo, the Netherlands</p> <p>STEIGER, Vionnaz, Switzerland</p> <p>TENCATE Advanced Composites, BV, Nijverdal, the Netherlands</p> <p>VOLVO, Göteborg, Sweden</p>
Project implementation period	1st Dec 2011 – 30rd Nov 2015
Total value of the project	Overall budget € 9 013 875,80
Value of the project relating to the Faculty	€ 268 700 (grant)
Intensity of support for the project	75% for RTDi activities (€ 251 100, grant) 50% for demonstration (€ 17 600, grant)
Total grant amount	EU Contribution € 5 800 000
Grant amount belonging to the Faculty	€ 268 700 (grant)
Project Manager	Eric Boudon – project coordinator Prof. Vladan Koncar, PhD – scientific manager, ENSAIT

	Prof. Francois Boussu, PhD – dissemination manager, ENSAIT
Project Coordinator at the Faculty	Prof. emerit. Ana Marija Grancarić, PhD
Other Faculty employees involved in the project and their role on the project	Prof. Darko Ujević, PhD – Dissemination of project activities Prof. Budimir Mijović, PhD – Senior Researcher Prof. Stana Kovačević, PhD – Senior Researcher Asistance professor Blaženka Brlobašić Šajatović, PhD – Senior Researcher, Asistance professor Anita Tarbuk, PhD – Senior Researcher
Students of the Faculty involved in the project and their role on the project	Ivona Jerkovic, PhD student – Project Researcher
Project coordinators at partner institutions	ENSAIT, <i>École nationale supérieure des arts et industries textiles</i> -Eric Boudon ARMINES, <i>Association pour la Recherche et le Développement des Méthodes et Processus Industriels</i> - Christophe Binetruy POLIMI, <i>Politecnico di Milano</i> - Chiara Bisagni RTU, <i>Rīgas Tehniskā Universitāte</i> - Kaspars Kalnins TUD, <i>Technische Universität Dresden</i> - Wolfgang Trümper ALSTOM TRANSPORT SA - Pascal Ghys ASSOCIATION ARIA - Phillippe Julie COEXPAIR - Pierre Severin DYLCO - Xavier Thierry ESI GmbH - Anthony Pickett ESI Group - Alain Trameçon P-D GLASSEIDE GMBH OSCHATZ - Karsten Kittler LATVIJAS FINIERIS - Kaspars Zudrags MECACORP - Philippe Pineau REDEN - Marco Ezendam STEIGER - Sylvain Oriol TENCATE Advanced Composites, BV - Sebastiaan Wijskamp VOLVO - Maria Walenius Henriksson
Short summary of the project (500 to 2000 characters including spaces)	MAPICC 3D is four years (large-scale) collaborative project focused on production of textiles and composite technologies based on thermoplastic materials. The aim is to realise the preforms directly, avoiding all joining steps to deal with the weight reduction of structures. Fully automated and highly adaptable processes should ensure a highly reliable production rate comprised between 5 and 20 minutes per m ² , at low cost, accordingly to the complexity of textile structure. Innovation is development of composites suitable for OEMs in transport, building and energy applications, able to replace metal based structures.

Project Code	2015-1-RO01-KA203-015198
Project Title	Knowledge Platform for Transferring Research and Innovation in Footwear Manufacturing
Acronym	Knowledge4Foot (K4F)
Sources of funding	EU, Erasmus+ KA2
Applicant/Holder	UNIVERSITATEA TEHNICA GHEORGHE ASACHI DIN IASI, Faculty of Textile, Leather and Industrial Management, Romania
Partner (s)	CONFEDERATION EUROPEENNE DE L'INDUSTRIE DE LA CHAUSSURE, Bruxelles, Belgium INSTITUTUL NATIONAL DE CERCETARE-DEZVOLTARE PENTRU TEXTILE SI PIELARIE, Bucharest, Romania THE RESEARCH COMMITTEE OF THE TECHNICAL UNIVERSITY OF CRETE, Crete, Greece Virtual Campus Lda, Porto, Portugal Centro Tecnológico do Calçado de Portugal, S. João da Madeira, Portugal INSTITUTO TECNOLOGICO DEL CALZADO Y CONEXAS, Elda, Spain SVEUCILISTE U ZAGREBU TEKSTILNO-TEHNOLOSKI FAKULTET, Zagreb, Hrvatska CREATIVE THINKING DEVELOPMENT, Rafina, Greece
Project implementation period	1st Sept 2015 – 1st Sept 2018
Total value of the project	229.576 €
Value of the project relating to the Faculty	18.469 €
Intensity of support for the project	100% (grant)
Total grant amount	229.576 €
Grant amount belonging to the Faculty	18.469 €
Project Manager	Prof. Aura Mihai, PhD
Project Coordinator at the Faculty	Prof. emerit. Ana Marija Grancarić, PhD
Other Faculty employees involved in the project and their role on the project	Doc. dr. sc. Anita Tarbuk – manager, teacher Suzana Kutnjak-Mravlinčić, BSc - teacher Irena Topić, BSc – teacher Lea Botteri, BSc - associate
Students of the Faculty involved in the project and their role on the project	Barbara Radenica - intensive learning programme, student project 1 - associate Zrinka Tomašić - intensive learning programme, student project 2

	<p>- leader Danica Habulan - intensive learning programme, student project2 - associate Mia Makšan – intensive learning programme, student project 3 -leader Ida Leskošek - intensive learning programme, student project 4 -associate Dora Hranilović - intensive learning programme, student project5 - associate</p>
<p>Project coordinators at partner institutions</p>	<p>CONFEDERATION EUROPEENNE DE L'INDUSTRIE DE LA CHAUSSURE – Carmen Arias Castellano INSTITUTUL NATIONAL DE CERCETARE-DEZVOLTARE PENTRU TEXTILE SI PIELARIE – Luminita Albu, PhD THE RESEARCH COMMITTEE OF THE TECHNICAL UNIVERSITY OF CRETE – Prof. Nikolaos Bilalis, PhD Virtual Campus Lda – Carlos Carlavaho, eng. Centro Tecnológico do Calçado de Portugal – Rita Souto Bizarro INSTITUTO TECNOLOGICO DEL CALZADO Y CONEXAS – Rosa Ana Perez Frances CREATIVE THINKING DEVELOPMENT – Dimosthenis Papakonstantinou</p>
<p>Short summary of the project (500 to 2000 characters including spaces)</p>	<p>Knowledge4Foot project aims to foster the excellence in training for footwear manufacturing by linking the three areas of Education, Research and Business and demonstrate good practices of cooperation and how they bridge the worlds of education and work. More specifically, the project focuses on increasing the added value of European footwear by enhancing the research and development skills of workers. Specifically, the project created a curriculum and platform for internships/project-based learning, which allows interns to transfer their acquired skills and knowledge to the footwear sector. For this purpose, the project included the following activities:</p> <ol style="list-style-type: none"> 1) Setting-up a new Knowledge Platform for transferring research and innovation for footwear manufacturing where the students receive project-based training into a virtual environment by simulating various developing stages of the research projects and having as starting point the real identified needs of leather and footwear companies; 2) Developing active collaboration among education, business community and research in order to assess the skills needs on innovation, research, development and technological transfer; 3) Designing a common curriculum and related e-learning content which incorporates creative thinking, problem solving approach and project-based learning for virtual




internship in a Knowledge Platform for transferring research and innovation. Based on companies needs for training programmes for managers, engineers/technicians and designers in the footwear sector, the Knowledge4Foot project contributes at developing sustainable solutions to attuning curricula for placement/internship in order to develop skills and competencies in area of project-based work focused on research, innovation and technological transfer. Thus, the project has a significant impact on the development of education and training across Europe thanks to the development of the Knowledge4Foot online platform that collected all outputs and data compiled in this relation.

Project Code	IP-2018-01-7028
Project Title	Shielding from electromagnetic fields with electrically conductive textile materials
Acronym	SEMECTEX
Sources of funding	CSF
Applicant/Holder	University of Zagreb Faculty of Electrical Engineering and Computing
Partner (s)	University of Zagreb Faculty of Textile Technology
Project implementation period	01.12.2018. - 30.11.2022
Total value of the project	969.136,00 kn
Value of the project relating to the Faculty	-
Intensity of support for the project	-
Total grant amount	-
Grant amount belonging to the Faculty	-
Project Manager	Prof. Krešimir Malarić, PhD
Project Coordinator at the Faculty	-
Other Faculty employees involved in the project and their role on the project	Prof. Tanja Pušić, PhD – researcher Assist. prof. Bosiljka Šaravanja - researcher
Students of the Faculty involved in the project and their role on the project	-
Project coordinators at partner institutions	-
Short summary of the project (500 to 2000 characters including spaces)	The aim of proposed research is the analysis of existing textile materials with conductive copper or silver threads for electromagnetic shielding. Research would include development of measurement methods of shielding effectiveness of conductive textile shields on frequencies from 900 MHz to 2.4 GHz as well as their possible application on humans. Furthermore, the durability and life cycle of the mentioned textile materials during use and care will be assessed. Durability of shield effectiveness will be estimated through impact of control parameters in dry and wet conditions. Conductive textile materials will be also applied for a certain cloth and interior products.

Project Code	Bilateral CRO-SLO project
Project Title	<i>Modification of textiles by plasma and nanoparticles for development of protective and healthcare textiles</i>
Acronym	„~“
Sources of funding	Ministry of Science and Education
Applicant/Holder	University of Zagreb Faculty of Textile Technology, Croatia
Partner (s)	/
Project implementation period	01.01.2014. - 31.12.2015.
Total value of the project	2.000,00 euro
Value of the project relating to the Faculty	2.000,00 euro
Intensity of support for the project	100%
Total grant amount	100%
Grant amount belonging to the Faculty	/
Project Manager	Sanja Ercegović Ražić
Project Coordinator at the Faculty	„~“
Other Faculty employees involved in the project and their role on the project	Ružica Čunko – researcher Slobodan Milošević – researcher Zlatko Kregar - researcher Tomislav Rolich - researcher Maja Somogyi Škoc – researcher
Students of the Faculty involved in the project and their role on the project	/
Project coordinators at partner institutions	/
Short summary of the project (500 to 2000 characters including spaces)	In the research of targeted textile modification, plasma technology will be used with the aim of developing methods that will result in the strongest possible binding of modifiers to the textile substrate. As a basic substrate for processing, cellulose fabrics of defined structural characteristics will be used, on which, for the purpose of targeted modification of properties, various physico-chemical treatments will be carried out. Plasma systems operating at different frequencies and at different

pressures (low-pressure, atmospheric) will be used, and process optimization will be performed by controlling the plasma processing parameters. Plasma from different types of gases first will be used for cleaning, physico-chemical activation and ablation of the textile substrate surface. Such pre-treatments will have a significant impact on the modification of the textile substrate, on its morphological, chemical and physical properties, and that different modification effects will be achieved under the same treatment conditions. Evaluation of the effectiveness of the performed procedures and the achieved effects will be carried out using sophisticated methods of analysis - SEM, FTIR-ATR, XPS, AFM, ICP-MS. Nanoparticles of inorganic substances (silver compounds, zinc oxide and titanium dioxide) will be applied on textile material in two-stage and one-stage processes. Depending on the process and the applied plasma system, inorganic substances will be prepared in the form of solutions or dispersions, concentrations necessary to achieve the best possible antimicrobial effects against selected microbiological species. Based on previous knowledge and experience in the application of plasma systems for the purpose of functionalization of textile surfaces and targeted modification of properties, we believe that the proposed research can make a new contribution to the development of multifunctional textile materials for protective clothing of good comfort. The primary goal is to optimize the parameters of the modification process to achieve effective antimicrobial protection.

Project Code	Bilateral CRO-SLO project
Project Title	<i>Development of biodegradable and antimicrobial cellulose composites from waste material</i>
Acronym	„~“
Sources of funding	Ministry of Science and Education
Applicant/Holder	University of Zagreb Faculty of Textile Technology, Croatia
Partner (s)	/
Project implementation period	01.01.2020. - 31.12.2022.
Total value of the project	2.000,00 euro
Value of the project relating to the Faculty	2.000,00 euro
Intensity of support for the project	100%
Total grant amount	100%
Grant amount belonging to the Faculty	/
Project Manager	Sanja Ercegović Ražić
Project Coordinator at the Faculty	„~“
Other Faculty employees involved in the project and their role on the project	Ana Sutlović - researcher Tomislav Ivanković (PMF) - researcher
Students of the Faculty involved in the project and their role on the project	Jelena Peran - doctor student - researcher
Project coordinators at partner institutions	/
Short summary of the project (500 to 2000 characters including spaces)	According to the increasing requirements regarding environmental protection and waste management, which is in our Country implemented in a small percentage, there is a growing need to develop a new materials from waste that can be reused as raw material for new materials. In addition, the development of biodegradable materials represents an important step forward in the implementation of waste management and the justification for conducting research in this direction. From this aspect, the idea is related to the development of materials for personal use that will be mostly used for personal care. Both leaders of the applied bilateral project are employed



at institutions that have long-term successful scientific-research cooperation. They successfully realized their first applied bilateral project called Development of protective and medical textiles by plasma and nanoparticle modifications, in the period from 2014 to 2015, within which scientific publications (Journal of Physics D, Applied physics) and even better cooperation were realized. The results of the research will be presented at scientific conferences and published in relevant foreign and domestic journals, and their verification will be possible on the basis of published data on the essential elements of the research implementation. The obtained results can be an incentive for new, knowledge-based production of new biodegradable materials that will play a primary role in replacing existing harmful non-degradable products intended for personal care and protection.

Project Code	612248-EPP-1-2019-1-BG-EPPKA2-KA
Project Title	ICT IN TEXTILE AND CLOTHING HIGHER EDUCATION AND BUSINESS
Acronym	ICT-TEX
Sources of funding	European Commission Executive Agency for Education, Audiovisual and Culture (EACEA)
Applicant/Holder	Technical University of Sofia, Textile Engineering, Bulgaria
Partner (s)	University of Zagreb Faculty of Textile Technology
Project implementation period	01.01.2020. - 31.12.2022.
Total value of the project	999 185,00 €
Value of the project relating to the Faculty	70 500,00 €
Intensity of support for the project	100%
Total grant amount	70 500,00 €
Grant amount belonging to the Faculty	70 500,00 €
Project Manager	<u>Diana Germanova-Krasteva</u> (do 01.03.2021.)/ Angel Terziev
Project Coordinator at the Faculty	Sanja Ercegović Ražić
Other Faculty employees involved in the project and their role on the project	Martinia Ira Glogar - teacher Vesna Marija Potočić Matković - teacher Anica Hursa Šajatović - teacher Milica Rihatrec - technical stuff
Students of the Faculty involved in the project and their role on the project	/
Project coordinators at partner institutions	/
Project web:	ICT-TEX project (ict-tex.eu)
Short summary of the project (500 to 2000 characters including spaces)	Industry has been changing very fast in the last 7-10 years, defined as the 4 th Industrial revolution. The greatest change covers not just the development of the technology and technics, but revolutionary inclusion of digital technologies in any business and human activity. Thus, the business needs new type of workers that are “born” with electronic devices and that have entrepreneurial spirit. These new features of the industry are set in different EU documents,

but the main one is the EU Strategy for Industrial Renaissance from 2014.

Textile and clothing Industry is one of the EU important industries with a large inclusion of the labor force. That's why the new competencies are very important for the workers in this business. According to this, the main aim of the project is to develop a curriculum and syllabuses that meet the requirements (resp. digital and entrepreneurial competencies) of the business to the specialists working in the field of textile and clothing design and production. The target groups are both young people who are still looking for their professional realization, and those who already work but need to improve their qualifications. The verification of the applicable terms of the Syllabuses and Curricula will be tested in real training in the Universities and in the Business. Thus, the curricula and syllabuses will be practice driven one inspired by the expertise and experience in the leading textile and clothing business and universities in Europe.

Analyses and course materials will be available through both the partners' sites and the project website. The participants will be able to use and include those materials in their master's programs either entirely or partially.

Project Code	professional project
Project Title	<i>Development of criteria for environmental protection label „Environmentally Friendly“ for the leather</i>
Acronym	„“
Sources of funding	Ministry of environmental protection and energetic
Applicant/Holder	University of Zagreb Faculty of Textile Technology, Croatia
Partner (s)	/
Project implementation period	24.04.2017. - 24.06.2017.
Total value of the project	38.000,00 HRK
Value of the project relating to the Faculty	38.000,00 HRK
Intensity of support for the project	100%
Total grant amount	100%
Grant amount belonging to the Faculty	/
Project Manager	Sanja Ercegović Ražić
Project Coordinator at the Faculty	„“
Other Faculty employees involved in the project and their role on the project	Jadranka Akalović - associate
Students of the Faculty involved in the project and their role on the project	/
Project coordinators at partner institutions	/
Short summary of the project (500 to 2000 characters including spaces)	<p>The project was designed with the purpose of developing of criteria for the environmental label "Environmentally Friendly" for the leather in the Republic of Croatia. The primary objectives of the above criteria are defined:</p> <ul style="list-style-type: none"> • Reduction of harmful emissions in wastewater • Reduced content of harmful substances in the finished skin • Waste management • Corporate social responsibility • Reduction of environmental pollution through the use of energy from renewable sources. <p>Criteria (7) for the award of the national environmental</p>

label for the product "leather" have been developed:

1. Raw leather - origin and tanning
2. Raw leather processing - leather processing (with emphasis on emissions)
3. Hazardous substances in treated (finished) leather
4. Restricted substances (RSL) in treated (finished) leather
5. Solid waste generated during leather processing
6. Corporate social responsibility with regard to working conditions
7. Energy.

Specific assessment and verification requirements are specified for each criteria. In terms of assessment, an important factor is the application of the standard HRN EN ISO 14001.