TECHNICKÁ UNIVERZITA V LIBERCI
Fakulta textilní

Annual report 2019

Technical University of Liberec
Approved by AS FT TUL 28. 5. 2020

CONTENTS

1. Basic information about the faculty

Technical University of Liberec, Faculty os Textile Engineering (abbreviated FT TUL, FT)
www.ft.tul.cz
Studentská 2, 461 17 Liberec

The main activities of the Faculty os Textile Engineering of the Technical University of Liberec in 2019, especially in the field of pedagogical and creative activities, were implemented in accordance with the Strategic Plan of the Faculty os Textile Engineering of the Technical University of Liberec (which is formulated in the document Long-term plan of educational and scientific, research, development and innovation, artistic and other creative activities of the Faculty os Textile Engineering of the Technical University of Liberec for the years 2016-2020) and the Strategic Plan Implementation Plan for 2019.

1.1 Organisational scheme of the faculty

The organisational composition of the faculty is shown in the following table.

Table 1: Organisational composition of FT

Locations	Abbreviation.	Location
Department of Technology and Structures	KTT	Liberec
Department of Nonwovens and Nanofibrous Materials	KNT	Liberec
Department of Clothing	KOD	Liberec
Department of Design	KDE	Liberec, Jablonec nad Nisou
Department of Materials Engineering	KMI	Liberec
Department of Textile Evaluation	KHT	Liberec

The structure of the faculty as of 31 December 2019 is shown in the following diagram.

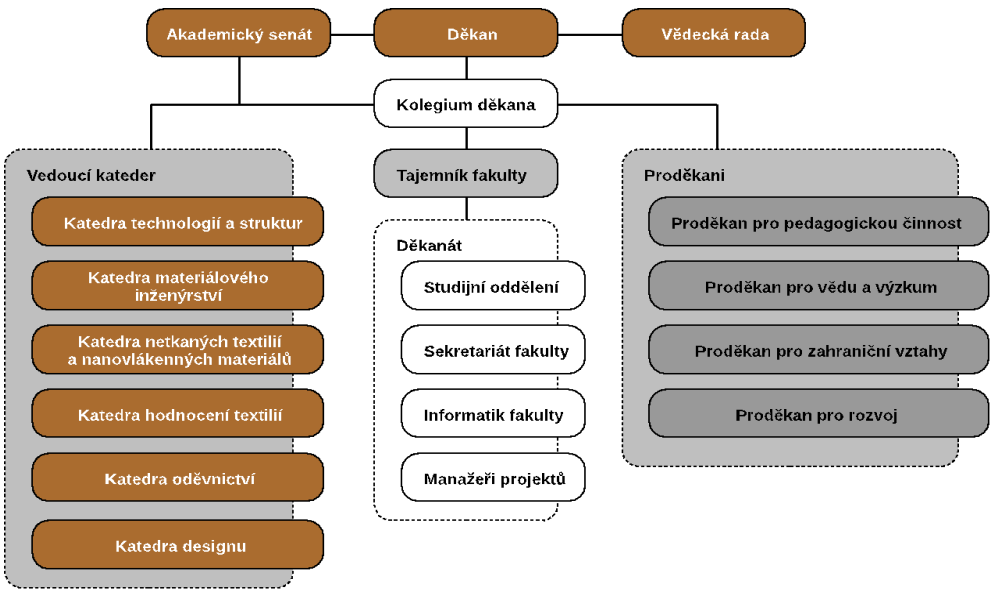

Fig. 1: Organizational chart of TUL as of 31 December 2019.

1.2 Composition of the faculty bodies

This chapter lists the personnel composition of the faculty management, the Academic Senate, the Scientific Council and the Disciplinary Council.

Faculty Management

Dean:	Ing. Jana Drašarová, Ph.D.	
Vice Deans:	Ing. Jindra Porkertová	for pedagogical activities
	Ing. Gabriela Krupincová, Ph.D.	for science and research
	Ing. Pavla Těšinová, Ph.D.	for Foreign Relations
	doc. Ing. Maroš Tunák, Ph.D.	for development
Head of Dean's Office:	Ing. Daniela Brzezinová	

Academic Senate:

The Chair:	Ing. Renáta Nemčoková (KOD)
1. The Vice-Chairman:	Ing. Alžbeta Samková
2. The Vice-Chairman:	Ing. Veronika Tunáková, Ph.D. (KMI)
Chamber staff:	Ing. Vlastimila Bergmanová (KDE)
	Ing. Irena Lenfeldová, Ph.D. (KTT)
	Ing. Miroslava Pechočiaková, Ph.D. (KMI)
	prof. Ing. Jakub Wiener, Ph.D. (KMI)
Chamber of Students:	Ing. Radek Jirkovec
	Ing. Michal Martinka
Head of Dean's Office:	Ing. Daniela Brzezinová (DFT) - not a member of the Senate

Members of the Academic Senate of TUL for FT TUL

Chamber staff:	doc. Ing. Vladimír Bajzík, Ph.D., Ing. Ondřej Novák, Ph.D.
Chamber of Students:	Ing. Zuzana Hrubošová until 04/2019, Ing. Jakub Erben from 05/2019

Scientific Council of the Faculty os Textile Engineering, TUL

Dean of FT TUL:	Ing. Jana Drašarová, Ph.D.	FT TUL
Internal members:	prof. Ing. Luboš Hes, DrSc.	FT TUL
	prof. RNDr. Oldřich Jirsák, CSc.	FT TUL
	Prof. Dr. Ing. Zdeněk Kůs	FT TUL
	doc. Svatoslav Krotký, ac.mal.	FT TUL
	prof. Ing. Jiří Militký, CSc.	FT TUL
	prof. Ing. Bohuslav Neckář, DrSc.	FT TUL
	prof. Ing. Petr Ursíny, DrSc.	FT TUL
	prof. Ing. Michal Vik, Ph.D.	FT TUL
	prof. Ing. Jakub Wiener, Ph.D.	FT TUL
	prof. Ing. Jaroslav Beran, CSc.	FS TUL
	doc. RNDr. Miroslav Brzezina, CSc.	FP TUL
	prof. Ing. Václav Kopecký, CSc.	FM TUL
	prof. Ing. Jiří Kraft, CSc.	EF TUL
	prof. PhDr. Tomáš Vlček, CSc.	FA TUL

External members:	prof. RNDr. Jaromír Antoch, CSc.	MFF UK Prague
	Prof. RNDr. Gejza Dohnal, CSc.	FS CTU Prague
	Ing. Libuše Fouňová	CLUTEX - cluster of technical textiles, o.s.
	Ing. Petr Janák, CSc.	INOTEX spol. s r.o., Dvůr Kr. n. L.
	prof. Ing. Lubomír Lapčík, Ph.D.	UTB Zlín
	prof. RNDr. Miroslav Raab, CSc.	Institute of the Academy of Sciences of the Czech Republic Prague
	doc. PhDr. Filip Suchomel, Ph.D.	AMU Prague
	prof. Ing. Michal Šejnoha, Ph.D., DSc.	FSv CTU Prague from 6. 10. 2017
	prof. Ing. Jaroslav Šesták, DrSc.	FyÚ AV ČR Prague
	prof. Ing. Jaromír Šňupárek, DrSc.	FChT UPA
	prof. Ing. Miroslav Václavík, CSc.	VÚTS, a.s., Liberec

Branch Councils for Doctoral Study Programmes

Board of DSP Textile Engineering (P0723D270002), Textile Engineering (P0723D270003)

The Chair:	prof. Ing. Jiří Militký, CSc.	FT TUL
Members:	Prof. RNDr. Jaromír Antoch, CSc	IFF UK
	doc. Ing. Lukáš Čapek, Ph.D.	FT TUL
	prof. RNDr. Oldřich Jirsák, CSc.	FT TUL
	Prof. Dr. Ing. Zdeněk Kůs	FT TUL
	prof. Ing. Michal Šejnoha, Ph.D., DSc.	FSv CTU
	doc. Ing. Maroš Tunák, Ph.D.	FT TUL
	prof. Ing. Jakub Wiener, Ph.D.	FT TUL

DSP Textile Engineering (P3106) in ČJ and AJ

The Chair:	prof. Ing. Jakub Wiener, Ph.D.	FT TUL
Members:	prof. RNDr. Jaromír Antoch, CSc.	IFF UK
	doc. Ing. Lukáš Čapek, Ph.D.	FT TUL
	prof. RNDr. Oldřich Jirsák, CSc.	FT TUL
	Prof. Dr. Ing. Zdeněk Kůs	FT TUL
	prof. Ing. Jiří Militký, CSc.	FT TUL
	prof. Ing. Michal Šejnoha, Ph.D., DSc.	FSv CTU
	doc. Ing. Maroš Tunák, Ph.D.	FT TUL

DSP Industrial Engineering (P0723D270001)

The Chair:	doc. Ing. Maroš Tunák, Ph.D.	FT TUL
Members:	doc. Ing. Vladimír Bajzík, Ph.D.	FT TUL
	doc. RNDr. Miroslav Brzezina, CSc.	FP TUL
	prof. RNDr. Gejza Dohnal, CSc.	FS CTU
	prof. RNDr. Oldřich Jirsák, CSc.	FT TUL

Ing. Karel Kupka, Ph.D.	TriloByte, s.r.o.
prof. Ing. Jiří Militký, CSc.	FT TUL
prof. RNDr. Jan Picek, CSc.	FP TUL
prof. Ing. Michal Vik, Ph.D.	FT TUL

College of the Dean

Dean:	Ing. Jana Drašarová Ph.D.	
Vice Deans:	Ing. Jindra Porkertová	
	Ing. Pavla Těšinová, Ph.D.	
	Ing. Gabriela Krupincová, Ph.D.	
	doc. Ing. Maroš Tunák, Ph.D.	
Chairman of AS FT:	Ing. Renata Nemčoková	
Secrets:	Ing. Daniela Brzezinová	
Heads of Departments:	Ing. Brigita Kolčavová Sirková, Ph.D.	KTT
	Ing. Jiří Chvojka, Ph.D.	CNT
	Prof. Dr. Ing. Zdeněk Kůs	CODE
	Ing. Blanka Tomková, Ph.D.	KMI
	Ing. Renata Štorová, CSc.	WHERE
	doc. Ing. Vladimír Bajzík, Ph.D.	KHT

FT TUL representative in the Council of Universities

The faculty representative in the RVŠ (Legislative Working Committee) is doc. Ing. Vladimír Bajzík, Ph.D.

2. Educational activities

This chapter summarizes the main parameters related to the first role of the faculty as part of the university, namely educational activities.

These are mainly performance parameters related to the implementation of teaching:

- accredited study programmes
  - Students
  - Alumni
  - Candidates

and descriptive parameters indicating further training activities

- linking educational activities with creative activities
  - realization of final student theses
  - involvement of students in research projects of various external providers
  - Involvement of students in specific research projects in the form of Student Grant Competition (SGS)
  - organizing the Student Scientific and Professional Activity Competition (SVOČ)
  - Organizing the International Ph.D. Students Day Workshop
  - support for student participation in competitions and exhibitions
- linking educational activities with internationalisation
  - study programmes in a foreign language
  - lecture internships of foreign experts
  - participation of FT students in foreign internships, placements, conferences, summer schools
- linking educational activities with the third role of the faculty
  - cooperation with future employers
  - cooperation in the development of study programmes
  - experts from the application sphere teaching in accredited study programmes
  - consultation and guidance of bachelor and master theses in cooperation with the corporate sector
  - professional lectures and seminars for students in cooperation with the corporate sector and graduates
  - excursions to companies
  - professional practice for students
  - motivational events for prospective students / cooperation with secondary schools.

2.1 Accredited study programmes

In 2019, **all submitted FT study programmes received NAU accreditation for a maximum period of ten years.**

All study programmes are accredited in English (except for the DSP Industrial Engineering). As of the 2019/2020 academic year, all students entering their first year of study will study according to the newly accredited study programmes. Upper year students will graduate under the old accreditations.

Table 2: Newly accredited study programmes

Stud code. program	Name of study programme (or specialisation)		Stand. period	Form of study
B0212A270001	**Design**	Textile technology and patterning	3	P
		Textile and clothing design		
		Glass and jewellery design		
B0212A270002	**Design**	Textile Technology and Patterning	3	P-AJ
		Design of Textiles and Clothing		
		Design of Glass and Jewelry		
B0414A270001	**Textile marketing**		3	P, K
B0414A270002	**Textile Marketing**		3	P-AJ
B0723A270001	**Textile technology materials and nanomaterials**	Design and creation of textiles	3	P, K
		Nonwovens and nanofibres		
B0723A270002	**Textile Technologies, Materials and Nanomaterials**	Construction and Production of Textiles	3	P-AJ
		Nonwovens and Nanofibers		
B0723A270003	**Manufacture of clothing and technical clothing**		3	P, K
B0723A270004	**Production of Clothing and Technical Products**		3	P-AJ
N0723A270001	**Textile Engineering**	Textile technology and materials	2	P, K
		Clothing technology and materials		
		Nonwovens and nanofibrous materials		
N0723A270002	**Textile Engineering**	Textile Technology and Materials	2	P-AJ
		Clothing Technology and Materials		
		Nonwovens and Nanofiber Materials		
N0723A270003	**Industrial Engineering**		2	P, K
N0723A270004	**Industrial Engineering**		2	P-AJ
P0723D270001	**Industrial Engineering**		4	P, K
P0723D270002	**Textile Engineering**		4	P, K
P0723D270003	**Textile Engineering**		4	P, K-AJ

Table 3: Accredited study programmes for completion of existing students

Stud code. Program code	Name of study programme	KKOV	Name of field of study	Stand. period	Form of study
B3107	**Textiles**	3107R006	Textile and clothing design	3	P, A
		3107R007	Textile marketing	3	P, K, A
		3106R016	Textile technology, materials and nanomaterials	3	P, K, A
		3107R015	Garment manufacturing and garment shop management	3	P, K, A
M3106	**Textile Engineering**	3106T012	Textile Engineering	5	P, A
N3106	**Textile Engineering**	3106T017	Clothing and textile technology	2	P, K, A
		3106T008	Non-woven and nanofibrous materials	2	P, K, A
N3957	**Industrial Engineering**	3911T023	Quality control	2	P, K, A
		3901T073	Product Engineering	2	P, K, A
P3106	**Textile Engineering**	3106V015	Textile Technology and Materials Engineering	4	P, K, A

Note: Form of study: full-time, K - combined, Aj or A - in English

2.1.1 Students

An overview of the number of students as of 31 December 2019 in accredited study programmes is presented in the following table. This is the output from the central SIMS registry. Evaluation of study programmes (see **Annex 1**)

Table 4: Students in accredited study programmes

Study programme	Students in the study programme								Total students
	BSP		MSP		NMSP		DSP		
	P	K	P	K	P	K	P	K	
B3107 Textile	202	66							268
B0212A270001 Design	50								50
B0414A270001 Textile marketing	83	32							115
B0723A270001 Textile technology, materials and nanomaterials	22	13							35
B0723A270003 Manufacture of apparel and technical clothing	17	15							32
N3106 Textile engineering					37	15			52
N0723A270001 Textile engineering					48	14			62
N3957 Industrial engineering					7	12			19
N0723A270003 Industrial engineering					18	13			31
P3106 Textile engineering							9	0	9
P0723A270001 Industrial engineering							0	0	0
P0723A270002 Textile engineering							40	12	52
Faculty total	**374**	**126**	**0**	**0**	**110**	**54**	**49**	**12**	**725**
Of which the number of women	**279**	**90**	**0**	**0**	**79**	**41**	**17**	**6**	**512**

Table 5: Students in accredited study programmes by citizenship

Type of study	Students with Czech citizenship	Students with foreign citizenship
Bachelor's Degree Programme (BSP)	385	115
Continuing Master's Degree Programmes (NMSP)	115	49
Doctoral Study Programme (DSP)	27	34
Total FT	**527**	**198**

The Faculty os Textile Engineering traditionally hosts a number of foreign students - for example, from Russia (52), Slovakia (35), Ukraine (20), Pakistan (13), Kazakhstan (13), Kyrgyzstan (2), India (15), Poland (6), Egypt (2) and South Africa (1), Turkey (14), China (6), Belarus (3), Canada (1), Uzbekistan (1), Serbia (1), Nepal (1), Ethiopia (1), Indonesia (1), Bangladesh (5), Colombia (1), Spain (1), Germany (1), Palestine (1), Nepal (1), Congo (1). The number of students with foreign citizenship is higher than the number of students with Czech citizenship, which is the result of the excellent international activities of the academic staff of FT TUL.

Advice and support for students in accredited study programmes

At the TUL FT, students in the first years of study mainly terminate their studies on their own

initiative or due to failure to fulfil their study obligations. A higher failure rate is observed among students of the combined form of study, whose number is traditionally high at FT TUL. For some students in the combined form of study, it is not easy to combine their own teaching and study activities with their work and personal responsibilities, especially nowadays, when companies have a shortage of workers and stop supporting the qualification growth of their employees. The failure of full-time students is most often due to the low level of knowledge and understanding of science that they come from secondary schools with, which is often combined with low motivation to study and low individual diligence. In September and November 2019, FT TUL participated in a survey by an external agency that examines the motivation and expectations of students in different faculties. An extensive survey of first-year students on all undergraduate programmes was conducted at enrolment and repeated after half of the first semester had been completed. A recommendation was made to better communicate the composition of the 1st semester curriculum.

Table 6: Unsuccessful students in accredited study programmes in %

Type of study programme	P [%]	K [%]	Total [%]
BSP (all disciplines)	55	61	57
MSP (all disciplines)	0	0	0
NMSP (all disciplines)	50	49	50
DSP (all disciplines)	22	40	29
Total			**53**

*Note: * = Study failure rate is the ratio of the number of studies started in year n to the sum of failed studies of this cohort in year n and n+1.*

FT TUL strives to reduce the academic failure rate of students. We try to compensate for the lower entry knowledge of students by higher time allocation of exercises and seminars in core courses, when the beginning of the semester can be devoted to repetition and the overall level of the course is not reduced. In addition, teachers are engaged in individual and group consultations. For courses with a high failure rate, we schedule the course in the following year so that the teaching does not conflict with compulsory courses and the student can fully re-attend. In the framework of the ROLIZ project, curricular support for courses with high failure rates is being developed in each department.

We try not to encourage prolonged study by, for example, stipulating that only a student who is studying properly during the standard period of study can receive a merit scholarship. In order to prevent prolongation of studies, students are continuously consulted by the staff of the study departments and the vice-dean for pedagogical activities in case of difficulties (academic, health, social). Students are advised to find solutions on the basis of an individual approach. Fees for overstaying are prescribed on the basis of the Vice-Chancellor's instruction.

The Vice-Dean for Pedagogical Activities and the clerks of the Study Department work closely with the Academic Counselling Centre and the TUL Support Centre. All teachers are informed about students with specific needs from the Academic Counselling Centre at the beginning of the semester and receive recommendations on how to work with these students individually. Gifted students have the opportunity to participate in scientific work in the departments, to go abroad within the Erasmus programme+ , to participate in a number of student competitions (SVOČ, company scholarships, competitions for the best final thesis).

2.1.2 Alumni

In 2019 (from 1 January 2019 to 31 December 2019), a total of 145 students graduated from accredited study programmes. Of these, 111 were women and 27 were foreigners.

Table 7: Graduates of accredited study programmes (period 1 January 2019 - 31 December 2019)

Study programme / field of study	Graduates in the study programme								Total Graduates
	BSP		MSP		NMSP		DSP		
	P	K	P	K	P	K	P	K	
BSP/TM	18	9							
BSP / TON	37	0							
BSP / VOMO	5	11							
BSP / TTMN	10	2							
Total BSP	**70**	**22**							**92**
NMSP / OTI					12	4			
NMSP / NNM					9	3			
NMSP/RJ					0	2			
NMSP/PI					6	9			
NMSP total					**27**	**18**			**45**
DS							7	1	
Doctoral total							**7**	**1**	**8**
Total FT									**145**

Note: Numbers of graduates without successfully completed short-term stays (data - outputs of the central SIMS registry).

Faculty cooperation with alumni

FT TUL supports cooperation with graduates at the departmental level. FT TUL organises tours of existing premises on the occasion of alumni reunions.

Graduates of the doctoral study programme

In 2019, eighteen State Final Doctoral Examinations (SDZ) were held. Fourteen students successfully passed the SDZ: Details of the examinations can be found on the Faculty's website under the link *State Doctoral Examination*.

Hafiz Faisal Siddique, M.Sc.,
Muhammad Sajid Faheem, M.Sc.,
Ing. Jakub Erben,
Ing. Andrea Klápšt'ova,
Daniel Karthik, M.Tech.,
Ing. Marcela Pechová,
Ing. Petra Jirásková,
Syed Qummer Zia Gilani, M.Sc.,
Ing. Tereza Heinisch,
Abdelhamid Rajab Ramadan Aboalasaad, M.Sc.,
Azam Ali, M.Sc.,
Muhammad Zaman Khan, M.Sc.,
Tariq Mansoor, M.Sc.,
Ing. Jana Novotná

In the same year, 8 students successfully defended their dissertations and received their Ph.D. degrees. Details of the doctoral procedures can be found on the faculty's website under the link *Dissertation defence*. Successful graduates are listed here.

Nareerut Jariyapunya M.Eng.
topic: Clothing Patternmaking Method for Stretch Fabrics
supervisor: Ing. Blažena Musilová, Ph.D
Muhammad Usman Javaid
topic: Knife Stabbing Resistance of Woven Fabrics
supervisor: Ing. Jana Salačová, Ph.D.
Ing. Karolína Voleská
topic: Carboxymethylcellulose in textile applications
supervisor: prof. Ing. Jakub Wiener, Ph.D.
Tao Yang, M.Eng.
topic: Advanced Fibrous Materials for Acoustic Performance
supervisor: doc. Rajesh Mishra, Ph.D., B. Tech.
Xiaoman Xiong, M.Eng.
topic: Aerogel Embedded High-performance Fibrous Materials
supervisor: doc. Rajesh Mishra, Ph.D., B. Tech.
Zuhaib Ahmad, M.Sc.
topic: Structure and Geometry of Single and Two Layer Stitched Woven Fabrics
supervisor: Ing. Brigita Kolčavová Sirková, Ph.D.
Muhammad Tayyab Noman, M.Sc.
topic: Stabilization of Sono Synthesized Photocatalyston Textiles and Development of Multifunctional Nanocomposites
supervisor: Ing. Jana Šašková, Ph.D.
Aravin Prince Periyasamy, M.Tech.
topic: Properties of Photochromic Textiles
supervisor: doc. Ing. Martina Viková, Ph.D.

2.1.3 Interest in studying

The following table provides statistical data on the number of students enrolled for studies, the number of students admitted for studies and the number of students enrolled for studies. This information is broken down by study programme.

Table 8: Number of applications

Study programme	Applications submitted [1)]	Number of applicants (natural persons)	Acceptance [2)]	Enrolled [3)]
Total BSP	690	394	400	245
Total DSP	24	20	19	13
NMSP total	299	178	153	96
SME total	0	0	0	0
TOTAL on FT	**1013**	**592**	**572**	**354**

Note: 1) Applications received by the faculty, 2) successful applications, 3) enrolled students.

Nature of the entrance examination

At FT TUL, admission examinations are provided exclusively by our own resources.

In 2019, the Dean stopped the first round of admissions to the old fields of study due to obtaining all new accreditations at NAU. After the consent of the applicants, the applications for the old fields of study were transferred to the corresponding newly accredited programmes. The second round was already open only for the newly accredited degree programmes.

Bachelor's degree: the Faculty os Textile Engineering accepts mainly applicants based on the results of their studies from secondary school. Successful completion of the talent test is a condition for admission to the Bachelor's programme in Design.

Continuing Master's studies: candidates were admitted to the continuing study programme without entrance examinations on the basis of the recommendation of the admissions committee.

Applicants are admitted without an entrance exam after an assessment of their previous secondary/college studies and any other activities until the capacity is filled. The first semester of study is designed as an extended admission process where applicants demonstrate their ability to study their chosen program at the university.

Doctoral studies: the admission procedure for doctoral studies took place in two rounds last year. Applications were accepted by the deadlines: 15 February 2019, 24 June 2019. The admission committee meeting took place on 26 February 2019 and 26 June 2019. The assessment of the applicant's overall qualifications for this type of study is based on documented successful completion of a university degree in engineering or a master's degree, a structured CV describing the applicant's skills, knowledge and competencies, including a cover letter elaborating on the expected dissertation topic. In the case of foreigners, nostrification of previous educational qualifications was also a prerequisite for admission. Summary information on the number of applicants, admitted and enrolled students is given in the following table.

Table 9: Admissions to the

Admission procedure	CZECH REPUBLIC	Foreigners	Total / accepted / not accepted	Minutes
Round 1	3	9	12 / 12 / 0	9
Round 2	3	5	8 / 7 / 1	5
Total	6	14	20 / 19 / 1	14

2.1.4 Development of educational activities

Teaching activities in 2019 were supported from other sources through MŠMT projects (2 development projects (MŠMT Institutional Support)).

In the field of education, the availability of study materials in electronic form in both Czech and English (using e-learning applications) has been and is being gradually improved. Participation in specialised trade fairs, where the offer of study programmes and cooperation opportunities was presented, was also important for increasing the reputation of the faculty.

EU operational programmes

The sustainability of all projects implemented under the OP HC programme has been completed. In 2019, the Faculty os Textile Engineering of TUL continued to actively participate the university-wide project OP VVV RoLiz 4.0 - *Development of human resources of TUL for increasing relevance, quality and access to education in the conditions of Industry 4.0*, reg. no. CZ.02.2.69/0.0/0.0/16_015/0002329.
The faculty is involved in the key activities KA01 - Project Management, KA02 - Improvement of Educational Activities, KA03 - Creation and Modernization of Study Programmes, KA04 - Labour Market Monitoring, Links to Graduates, KA06 - Availability of Counselling and Assistance Services, KA07 - Adaptation of the Learning Environment, KA08 - Quality System and KA09 - Effective Management Principles.
Another of the university projects in which the Faculty os Textile Engineering of TUL participates is the project *Effective Technology Transfer Process at TUL*, reg. no. CZ.02The activities implemented in the project were aimed at setting up an effective TT system at TUL. The aim is to support and develop the commercialisation system within TUL. The Faculty supports the involvement of technology scouts and other academic or scientific researchers in projects aimed at developing and actively introducing commercialisation procedures into daily practice.
Within the framework of the *International Mobility of Researchers at TUL* project, reg. no. CZ.02.2.69/0.0/0.0/16_027/0008493, which was launched in April 2018, the Faculty discussed the arrival of young researchers from abroad in order to expand and improve international cooperation.
The faculty also participated in university-wide projects of the OP VVV aimed at improving material and technical equipment for bachelor and master study programmes/fields - *Educational infrastructure of TUL for increasing relevance, quality and access to education in the conditions of Industry 4.0*, reg. no. CZ.02.2.67/0.0/0.0/16_016/0002553, *Support for the development of the learning environment at TUL*, reg. no. CZ.02.2.67/0.0/0.0/17_044/0008541. Both projects purchased instrumentation and software for the faculty's laboratories and classrooms.

Development programmes

The following projects were addressed in 2019:

1. Innovations in educational activities of the Faculty of Arts of TUL- Ing. Jindra Porkertová (Activities.)
2. Development of the quality of activities of the Faculty of Science of TUL - Ing. Jana Drašarová, Ph.D. (Activities.

2.2 Linking educational activities with creative activities

The link between educational and creative activities is a condition for continuous curriculum innovation, where it is the duty of every academic to enrich the teaching in his/her field with new knowledge, which he/she contributes to in the framework of his/her R&D and artistic creative activities. Students (especially SMEs and DSPs) are involved in projects and problem solving in complementary activities. In 2019, FT TUL also supported the involvement of students and young academic staff in the main activities based on the Strategic Plan of FT TUL. Bachelors, Masters and PhD students participated in R&D projects, e.g. Students of FT TUL also benefit from the interconnection of R&D and artistic activities with teaching, where they have the opportunity to creatively use new materials and advanced technologies.

2.2.1 Implementation of final student theses

The bachelor's and master's theses are always linked to creative activities carried out by R&D teams or artistic personalities of the faculty. In 2019, the final theses of these students were awarded:

Dean's Award:

Ing. Tereza Pocová	Analysis of the effect of twist on selected properties of bleached glass yarn
Ing. Tereza Jirovská	Methods of work standardization in theory and practice
Bc. Karolína Boňková	Effect of material composition of input raw material with different proportion of fibre waste on the quality of rotor yarn
Bc. Andrea Chaloupecká	Music in the clothing collection
Bc. Kamila Suchá	Evaluation of flat fabrics for bed sheets in terms of prevention of decubitus

Preciosa Foundation Award:

Bc. Ondřej Štěpánek	Climbing-themed accessories

The Rector's Award:

Bc. Anna Novotná	Laminated nanofibre layers for air filtration

Jiří Zelenka Award:

Ing. Klára Masnicová	Effect of material on filtration and separation properties of nanofibre membranes

2.2.2 Involvement of students in research projects of external providers

TUL FT continued to use the possibilities of financing students' scientific research activities from scholarship funds, enabling students to be partly employed on externally funded projects and complementary activities (see Chapter 4.1 Projects).

2.2.3 Involvement of students in Student Grant Competition (SGS) projects

This year, 15 SGS 2019 projects were tackled and successfully defended. These were small-scale projects led by PhD students and academic-led projects involving wider teams. Supervisors of PhD students were the guarantors of the substantive and formal level of the solutions and other members of the teams were mostly students of both the PhD and Master's degree programmes at TUL.

The outputs of the SGS 2019 projects are detailed in the final reports. A total of 36 papers were published at conferences or workshops (of which at least 9 are expected to be published as type D outputs in Scopus or Thomson Reuters), 30 J_{imp} journal publications were produced (of which 19 are already published, 8 accepted for publication, 3 under review). The outputs also include 2 chapters in book C, 1 functional sample F, 2 prototypes, parts of the dissertations of all involved DSP FT TUL students, 4 DPs and one catalogue of knitwear and fabric samples. The results of some of the projects were also presented at partner universities in the Czech Republic and abroad and in the case of project 21302 the results were also presented in the company with the aim of developing further mutual cooperation.

A paper summarizing partial results of the 21310 project was also presented at the 12th Textile Bioengineering and Informatics Symposium from September 8 to 11, 2019 in Suzhou, China (indexed in Scopus) and received the Best Student Paper Poster and student paper award (Wang, Yuanfeng; Karthik, Daniel; Yang, Kai; Yang, Tao; Xiong, Xiaoman; Baheti, Vijaykumar; Militký, Jiří: Electrical Heating Properties of Carbon Fabric/Green Epoxy Composites Filled with Fly Ash. *Textile Bioengineering and Informatics Symposium Proceedings 2019*, September 8 - 11, 2019, Suzhou China and has been recommended for publication in the impacted *Journal of Fiber Bioengineering and Informatics*).

Specific Research Projects of the Student Grant Competition:

1. *Development and characterization of composite materials for application in construction*, Ing. Miroslav Frydrych (21302)
2. *Structure and properties of jet yarn and its influence on the properties of flat textiles*, Ing. Ondřej Louda / Ing. Pavlína Bílá (21303)
3. *Electrolytic plating of fabrics*, Azam Ali, M. Sc. (21304)
4. *Analysis of mechanical properties of yarn by numerical homogenization*, Ing. Petr Henyš, Ph.D. (21305)
5. *Development and testing of 3D fibre formations for tissue engineering*, Ing. Radek Jirkovec (21306)
6. *Investigation of thermal properties of multilayer composites containing PEG/aerogel* by Kai Yang, M. Eng. (21307)
7. *Effect of plasma treatment of carbon fillers on the properties of epoxy composites*, Ing. Jana Novotná (21308)
8. *Functional characterization of textile garments to improve their overall performance properties,* Hafiz Faisal Siddique, M.Sc. (21309)
9. *Functional carbon structures for textile applications* by Yuanfeng Wang, M.Eng. (21310)
10. *Development of new multilayer fibre materials for tissue engineering*, Ing. Markéta Klíčová (21311)
11. *Conventional and microwave hydrothermal methods for textile coating* by Muhammad Zaman Khan, M.Sc. (21312)
12. *Fiber coating for water capture and environmental applications by* Asif Javed, M.Sc. (21313)
13. *Theoretical and experimental investigation of conduction-induced heat loss at different moisture and stretch levels in knitted and woven textiles with different compositions* by Tariq Mansoor, M.Sc. (21314)
14. *Utilization of novel eco-friendly agents for flame retardant finishes and textile composites and methods for their development* by Muhammad Sajid Faheem, M.Sc. (21315)
15. *Evaluation of thermal properties of stretch knitted fabric*, Amany Ahmed Salama Khalil, Eng. / Abdelhamid Rajab Ramadan Aboalasaad, M.Sc. (21316)

2.2.4 Organization of the Student Scientific and Professional Activity Competition (SVOČ)

The Faculty os Textile Engineering co-organized the 11th edition of the Competition in Student Scientific and Professional Activities (SVOČ) at the Technical Faculties of TUL in 2019 within the framework of the Institutional Programme for Public Universities for 2019-2020 (promoter of the Ministry of Education and Science) and the Institutional Plan of TUL for 2019-2020, priority objective 2 "Diversity and Accessibility". The competition was announced in four sections (Textiles, Mechanical Engineering, Mechatronics, Economics). The actual competition took place in the form of a student conference on 14 May 2019 in the premises of Building G of the Technical University of Liberec. A total of 34 students participated in the competition in the sections (Textile BSP+NMSP, Mechanical Engineering BSP+NMSP, Mechanical Engineering DSP, Mechatronics BSP+NMSP and Economics BSP, Economics NMSP+DSP).

An electronic proceedings of the Student Scientific and Professional Activity 2019 (*Student Scientific and Professional Activity 2019*. Proceedings, Technical University of Liberec, May 2019, ISBN 978-80-7494-471-0) was created. Each of the registered students gave a short presentation of their competition work before the evaluation committee. After all the presentations, the individual committees announced the 3 best papers from each section. The winners were awarded diplomas, financial and in-kind prizes.

First place in the Textile BSP+NMSP section went to Radim PLUCHA for his work *Nanofibre implant for the treatment of glaucoma disease*. The second place in the section went to Klára MASNICOVÁ for her work *Influence of material on filtration and separation properties of nanofibre membranes* and the work of Anna NOVOTNÉ *Laminated nanofibre layers for air filtration* took the third place. The competition results and photo gallery are published on the competition website (http://svoc.tul.cz/svoc_2019).

2.2.5 International Ph.D. Students Day

The next edition of the International Ph.D. Students Day took place on 12th November 2019. According to the attendance list, the student conference was attended by a total of 66 participants and 21 of them actively presented their contributions in the form of abstracts, posters and ppt presentations. The program including 3 invited talks is given on the website along with other information. An expert committee consisting of SGS FT TUL 2019 members, experts and guests selected the three best papers of this student conference which were also awarded financially (Ali Azam, Muhammad Sajid Faheem, Muhammad Zaman Khan). Some students excused themselves from presenting due to serious reasons and hence an alternative date was fixed in January the following year.

2.2.6 Support for student participation in competitions and exhibitions

Markéta Klíčová: 1st place in the national round of the EIT Health (European Institute of Innovation & Technology) competition and a ticket to the international final in Paris, November 2019.

2nd place in the student competition at the conference Biomaterials and their Surfaces XII (oral presentation of dissertation results), September 2019.

TOP 10 Diploma Theses in the prestigious national competition Werner von Siemens Prize (diploma thesis prepared at KNT and supervised by RNDr. Jana Horáková, Ph.D.), February 2019.

Jakub Erben: *1st Prize of The International Théophile Legrand Textile Innovation Award* - Fibrous three dimensional scaffolds for preparation of thymus organoid - T cells immunotherapy

Students of BSP Design actively participated in three competitions (2 of which were abroad) and 8 exhibitions (2 of which were abroad). Student awards at competitions:

- Kateřina Servusová, National Student Design Award 2019, Good Student Design Award

Students of BSP Design participated in the following **exhibitions and competitions in the Czech Republic and abroad**:

- BAKALAUREATS 2019. Exhibition of final student works. Exhibited design. Gallery N. Liberec, 2019.
- SPARK and GLASS. Collective exhibition of student works. Exhibited design. Gallery N, Jablonec nad Nisou, 2019.
- TEXTIL-ODĚV 2019. Collective exhibition of student works. Exhibited design. Gallery N, Jablonec nad Nisou, 2019.
- Servusová Kateřina, National Student Design Award 2019.
- Dvořáková, Alena. Exhibition Theme of Spark. UPM Prague. Exhibited Design. 2019.
- Nová, Jitka. Exhibition Theme of Spark. UPM Prague. Exhibited Design. 2019.
- Pomeislová, Martina. Exhibition Theme of Spark. UPM Prague. Exhibited design. 201.9
- Mercedes - Benz Prague Fashion Week, September 2019.
- Skalická Alžběta. The 28th International Silver Jewelry Competition SREBRO. Exhibited design. Legnica Poland 2019.
- Tame Philomena. Young Textile Art Triennial 2019 Lodz. Art installation. Poland 2019.
- Lucie Lind. Young Textile Art Triennial 2019 Lodz. Installation of artwork. Poland 2019.

DSP students are encouraged to participate in conferences mainly within the SGS.

2.3 Linking educational activities with internationalisation

The extent of internationalisation and international excellence of TUL is described in detail in Chapter 5 Internationalisation. The main impacts on educational activities are mentioned here.

2.3.1 Study programmes in a foreign language

The Faculty os Textile Engineering has all of its study fields (in bachelor's, master's and doctoral study programmes) accredited in both Czech and English. Study in English is conducted in the doctoral programme and in the follow-up master's programmes - second-year students study the programme "Clothing and Textile Engineering" to complete the existing students and first-year students study the newly accredited programme Textile Engineering. In the Bachelor's programme we have our first female student, although there is interest in studying in English, applicants have problems in getting their previous education recognised and in obtaining visas. The faculty is working with the Rectorate's Office of International Relations to recruit self-pay students for selected courses of study.

2.3.2 Lectureships of foreign experts

There were 18 visits of foreign experts from Mauritius, Turkey, India, Thailand, Slovenia, Romania, Portugal and Tunisia. Of these, 16 experts gave lectures to students and staff of the TUL FT. Of the total, 2 Turkish staff were trained during the stay. Overview of lecture stays:

1. Gonca Alan, Usak University, Turkey, 7 - 11 October 2019 - lectures on "Nonwovens and Recycling in Textiles, Novel approaches in management of solid textile wastes, Alternative usage areas for sustainable recycled textile structures", Erasmus+ teaching stay KA103
2. Dmitry Ryklin, Vitebsk State Technological University, Belarus, November 25 - November 29, 2019 - lectures "Yarns evenness and its evaluation (mass diagrams, yarn faults, length-variation curves, spectrograms, Uster Statistics)", support of international mobility of ZHR
3. Sergey Medvetski, Vitebsk State Technological University, Belarus, November 25 - November 29, 2019 - lectures "Up-to-date blowrooms for short staple fibers processing (opening, cleaning, blending)", support of international ZHR mobility
4. Natee Srisawat, Rajamangala University of Technology Thanyaburi, Thailand, October 28 - November 7, 2019 - lecture "Polymer and Fiber Sections, Textile Chemistry and Fiber Engineering", other form of funding
5. Piyanut Jingjit, Rajamangala University of Technology Thanyaburi, Thailand, October 28 - November 7, 2019 - lecture "Project based learning", different form of funding
6. Klara Kostajnšek, University of Ljubljana, Slovenia, 12.8.-23.8.2019 - lecture "Weaving on a laboratory scale, planning new woven produsts development", Erasmus+ teaching stay KA103
7. Javed Sheikh, Indian Institute of Technology New Delhi, India, June 17 - June 28, 2019 - "Sustainable Textile Chemical Processing, Natural Dyeing, Eco-Friendly Functionalization Of Textile Materials" Erasmus+ Teaching Fellowship KA107
8. Bijoy Kumar Behera, Indian Institute of Technology New Delhi, India, June 3 - June 14, 2019 - lectures "Textile Structures For Composites, 3D Woven Structures, 3D Hollow And Solid Structures For Composites, Modeling Of Composite Properties And Simulation, End Use Applications", Erasmus+ teaching stay KA107
9. Sofien Benltoufa, University of Monastir, Tunis, May 1 - May 30, 2019 - "The importance of

comfort parameters on marketing of performance and protective clothing. Psychological comfort. Fabric Engineering of wearers comfort. Testing of thermal and water vapour transfer. The effect of fabric structures on the comfort parameters. Mathematical modelling of heat and mass transfer", Erasmus+ teaching placement KA107

10. Sabrina Ramsamy-Iranah, 25 November - 6 December 2019 - lectures "Introduction to adaptive clothing for PWDs, development of functional garments for PWDs, textile comfort, textile structures and textile design", support for international mobility of PWDs
11. Unmar Roshan, University of Mauritius, Mauritius, December 2 - December 13, 2019 - lectures "Hierarchical structure of textiles, structure-property relationships, geometrical models of fibre, yarn, knitted, woven structures, fabric design and structure relationship", support of international mobility of ZHR
12. Gabriela Iuliana Lupu, "Gheorghe Asachi" Technical University of Iasi, Romania, May 27 - May 30, 2019 - lecture "Technical Nonwovens / agrotextiles or Nanostructures obtained through electrospinning", Erasmus+ teaching stay KA103
13. Ana Lacramioara Leon, "Gheorghe Asachi" Technical University of Iasi, Romania, May 27 - May 30, 2019 - lecture "Textile creativity between tradition and digitalization", Erasmus+ teaching stay KA103
14. Seval Uyanik, Gaziantep University, Turkey, 23 April - 26 April 2019 - Erasmus+ training KA103
15. Mehmet Dasdemir, Gaziantep University, Turkey, June 25 - June 28, 2019 - lectures "Introduction to Applications of Nonwoven, Medical Nonwoven Products, Nonwoven Filters and Their Properties, Hygiene Nonwoven Products and Wipes", Erasmus+ teaching stay KA103
16. Senhorinha Teixeira, Universidade do Minho, Portugal, March 21 - 22, 2019 - lecture "Comfort modelling projects going on at UMinho", Erasmus+ teaching placement KA103

2.3.3 Participation of students in foreign work experience, internships, conferences, summer schools

This participation is covered by the mobility programme Erasmus+ KA103, Erasmus+ KA107, by the contribution of the Foreign Department directly to the students, or from the funds of the departments (see chapter 5.4 Mobility for more details).

In 2019, 26 study or work stays abroad took place during the summer semester of the academic year 2018-19: 20 students under Erasmus+, 6 students under other scholarship activities for a total of 64 months. In addition, 14 study or work placements abroad during the winter semester of the academic year 2019-20: 8 students under Erasmus+, 6 students under other scholarship activities for a total of 28 months. In total, 40 students travelled for 92 person-months in 2019.

2.4 Linking educational activities to the third role of the faculty

The intensification of cooperation with future employers is implemented at TUL through the sustainability of OP VK projects. The main mission of the activities is to increase the sectoral employment of graduates of the TUL FT. The most important goal is to set up interdisciplinary cooperation. This goal is gradually achieved by *innovations in the subject curriculum* of accredited programmes with regard to the needs of practice, support for *student mobility* within the study, diversification of professional *practice* and soft-skills competences of students, based on feedback from students, graduates and employers. A great benefit for students is the possibility

of *excursions*, study *internships* or *work placements and the solution of thesis or bachelor theses*, where the topics are based directly on the companies. Every year, FT TUL gives space to representatives of textile companies to present job opportunities in their companies, either in the framework of workshops in the companies associated with excursions or specialized seminars and *job fairs*. Job offers are advertised in front of the study department and on the faculty website. There is still a functioning database where students can obtain information about ongoing cooperation between companies and FT TUL.

2.4.1 Collaboration in the development of study programmes

FT TUL in cooperation with industrial partners strives to ensure that experts from practice participate in the education of students. The cooperation with companies associated under the Clutex z.s. cluster is based on a long-standing basis, but these companies have also appreciated the more open approach of the faculty, the offer of joint research and development projects and also, for example, the opportunity to comment on newly emerging study programmes and fields of study so that the graduate better meets the requirements of the labour market, and to participate in the possible revision of existing study programmes or professional courses in cooperation with FT TUL (involvement in the ROLIZ project). The linkage is implemented through a personnel link. Ing. Krupincová, Ph.D. Vice-Dean for Science and Research of FT TUL is a member of the Administrative Committee of Clutex, participates in regular meetings of the Committee as well as General Meetings and other meetings within Clutex. Ing. Libuše Fouňová Clutex manager is a member of the SC of FT TUL, is a member and chairman of the SZZ held at FT TUL within the BSP and NMSP, is an opponent of professional final student theses.
Further professional discussions take place at other forums, which are convened for this purpose by regional governments or directly initiated by companies and the management of secondary schools in the textile sector. The discussions are held in accordance with the Sectoral Agreements already signed or under preparation.

2.4.2 Experts from the application sphere teaching in accredited study programmes

In 2019, a number of experts from practice participated in teaching in accredited study programmes by leading and guaranteeing selected courses focused on project-based learning and the transfer of knowledge and R&D results into practice:

- doc. Ing. Václav Klička Ph.D. - Project
- Ing. Petr Štoček - Textile Sales Strategy, Innovative Marketing and Sales Management
- Prof. RNDr. Gejza Dohnal, CSc. - Planning of industrial experiments
- Mgr. Oldřich Palata - History of Art and Clothing Culture, Contemporary Art and Design, Aesthetics
- Ing. Jiří Koucký, CSc. - Glass and jewellery manufacture
- Ing. Zdeněk Štěpán - Glass and costume jewellery art
- Ing. Petr Tylínek - Textile Stylistics
- doc. ac. mal. Emilie Frydecká - History of Decoration, Graphics for Designers
- Zdeněk Kindl - Computer Graphics 1,2
- PhDr. Kateřina Nora Nováková, Ph.D. - Costume Jewellery
- Mgr. Denisa Smetanová - Interior Design
- Mgr. Ivana Hubáčková - Principles of partnership cooperation

2.4.3 Consultation and guidance of bachelor and diploma theses

Most of the cooperation is not formalized, it is necessary to add consultants from companies to the assignment of the final works. The current best practice, in the case of final student theses solved with a specific industrial enterprise, is the management of the thesis by an academic employee of the TUL Faculty of Science with the cooperation of an expert from the company as a consultant or opponent of the thesis.
Bachelor theses in Textile and Fashion Design were supervised by Doc. Emilie Frydecká, ak.mal. and MgA. Lada Semecká.
The KHT was led by Ing. Daniela Prskavcová supervised the diploma thesis of student Radomir Popek, at KOD Ing. Jiří Stuchlík supervised the bachelor thesis of Petra Runkasová.

Many other experts were consultants of the final theses (e.g. Prof. Josef Steidl, Mgr. Václav Novotný...).

2.4.4 Professional lectures and seminars for students

Experts working in the application sphere (or distinguished graduates) or in other scientific research organisations in the Czech Republic or abroad (see Chapter 3.2.3) were involved in the educational activities of the TUL Faculty of Science in the form of specialised seminars focused on selected topics in accordance with the main objectives of the TUL Faculty of Science and the TUL Faculty of Science. These seminars took place both in the teaching of individual subjects and separately for different groups of students across the disciplines studied.

- Ing. Milivoj Žák - Fashion, trends in clothing trade
- Ing. Ivo Havel - H&D, a.s. Prostějov - Outsourcing production, international trade
- Mgr. Václav Novotný - Direct Alpine - outsourcing production, foreign trade
- J. Pavelka - GrozBeckert - sales representative for the Czech Republic - needles
- Ing. Jaroslav Kučera- Park Avenue Prostějov - consultation
- Ing. Karel Boněk, Rieter CZ s.r.o., lecture within the subject Spinning, topic Spinning on rotor spinning machines

foreign experts are listed in section 3.2.3.

2.4.5 Excursions to companies

In 2019, professional excursions to these companies were organised:

- KNT organized a multi-day excursion to companies dealing with nonwovens.
- KTT organized the following excursions: Saint Gobain Adfors CZ, s.r.o., Litomyšl (28 March 2019) subject Weaving; Kumpers Textil s.r.o., Plavy (5 April 2019) subject Spinning; Schoeller Křešice, s.r.o. (29 March 2019) subject Spinning

2.4.6 Professional practice for students

At FT TUL, the DSP includes a compulsory professional practice for 6 months. The compulsory internship and the final presentation were successfully completed by 12 students in 2019. Other DSP students worked at foreign institutions in partial fulfilment of this obligation in accordance with their Individual Plan, with completion scheduled for a later date in their studies.

Professional practice is compulsory in all newly accredited bachelor's degree programmes. In each of the three years of study year students must work a minimum of 80 hours.

Supporting practical teaching and approaching practice for students of Textile and Fashion Design:

- workshop for students glass - jewellery at the glassworks Hut Štefánek, Desná
- clothing technology workshop - support of studio teaching

2.5 Motivational events for prospective students / Cooperation with secondary schools

FT TUL held open days for those interested in studying in February and November 2019. The November DOD is organized university-wide, the faculty had the opportunity to make their own presentations and had the faculty premises open for those interested in excursions in laboratories and semi-processes. Some high schools visit the FT TUL laboratories and special semi-operations as part of field trips outside of the open house dates.

On Tuesday, 17 September, young fashion designers from the Czech Republic and Slovakia came to Liberec. On the campus of the Technical University of Liberec, the sixth edition of the Clothing and Textile, Liberec 2019 competition was held with the subtitle Without Textile There Would Be No Clothing. The competition is organized by the Association for Organizing the Clothing and Textile Competition, Liberec in cooperation with the Secondary Industrial School of Textiles and the Faculty os Textile Engineering of the Technical University of Liberec. On the catwalk in the auditorium, the audience could see over sixty fashion collections made by primary and secondary school students in five different categories. Renata Štorová, Head of the Department of Design at the Faculty os Textile Engineering of the Technical University of Liberec, was also on the expert jury. An exhibition of art designs by primary school pupils was held in the foyer. The number of over 200 designs speaks of its great success. There was also the annual textile workshop prepared by the Liberec SPŠT. The event was supported by the Education Fund of the Statutory City of Liberec and the budget of the Liberec Region. As part of the programme, students of secondary and primary schools took part in a field trip to the departments of TUL.

Motivational events for prospective students

An important activity is the search for and long-term work with gifted individuals in primary and tertiary education, especially those who are likely to become scientists in technical and natural science fields developed at the Technical University of Liberec. In 2019, the following activities were implemented to motivate secondary school students to further their studies in technical fields:

- Open days of TUL, FT
- excursions for secondary school students
- the sixth edition of the competition Clothing and Textile, Liberec 2019 with the subtitle Without Textile there would be no clothing with the participation of most secondary schools with textile and clothing focus in the Czech Republic
- participation in popularization events - Night of Scientists, Science Fair...

3. Academics, staff

In 2019, 115 employees worked at the TUL Faculty of Science, 74 of whom were academic staff, including staff for science and research. There were 8 professors, 11 associate professors, 30 assistant professors, 4 assistant professors and 18 lecturers employed at TUL. An overview of the number of staff is given in the following tables. In 2019, six academic staff with foreign citizenship (number of natural persons) worked at FT TUL.

Table 10: Academic, scientific and other staff (headcount)

Faculty os Textile Engineering	Academic staff								Scientific and professional staff			Other employees	TOTAL employees
	TOTAL academic staff	Professors	Associate Professors	Professional assistants	Assistants	Lecturers	R&D staff involved in teaching activities	Extraordinary professors	Postdocs ("postdoc")	Researchers not falling into other categories	Other scientific, research and development		
Total	67,9	5,6	11,7	29,3	3,7	17,6			1,0	5,9	1,6	39,0	**115,4**
of which women	43,0		4,1	22,0	2,8	14,0			1,0	2,0	1,0	25,3	**72,4**

Table 11a: Age structure of academic staff

Faculty os Textile Engineering	Academic staff													
	Total academic staff		Professors		Associate Professors		Professional assistants		Assistants		Lecturers		R&D staff involved in teaching activities	
	Total	Women	Total	Women	Total	Women	Total	Women	Total	Women	Total	Women	Total	Women
up to 29	**0**	**0**												
30-39	**17**	**10**	1				9	5	3	2	4	3		
40-49	**26**	**20**	2		2		15	13	1	1	6	6		
50-59	**13**	**10**			5	3	2	2			6	5		
60-69	**7**	**6**			2	2	4	3			1	1		
over 70	**8**	**0**	5		2						1			
Total	**71**	**46**	**8**	**0**	**11**	**5**	**30**	**23**	**4**	**3**	**18**	**15**	**0**	**0**

Table 11b: Age structure of scientific staff

Faculty os Textile Engineering	Scientific and professional staff						Other employees		Total	of which women
	Postdocs ("postdoc")		Researchers not falling into other categories		Other R&D staff					
	Total	Women	Total	Women	Total	Women	Total	Women		
up to 29			1	1	2	2	1	1	**4**	**4**
30-39	1	1	5	3			5	3	**28**	**17**
40-49					1		13	10	**40**	**30**
50-59							6	6	**19**	**16**
60-69							7	4	**14**	**10**
over 70							2	1	**10**	**1**

Total	**1**	**1**	**6**	**4**	**3**	**2**	**34**	**25**	**115**	**78**

Table 12: Number of academic jobs by range of working hours and highest qualification attained

Time ranges	Academic staff								Researchers		Total	of which women
	prof.		doc.		DrSc., CSc., Dr., Ph.D., Th.D.		Other					
	Total	Women	Total	Women	Total	Women	Total	Women	Total	Women		
up to 0.3	1				2	2	1	1	1	1	**5**	**4**
0,31-0,5			1	1	1	1	1	1	3	3	**6**	**6**
0,51-0,7	3				2	1	2	2			**7**	**3**
0,71-1	4		10	4	25	19	18	14	6	3	**63**	**40**
more than 1											**0**	**0**
Total	**8**	**0**	**11**	**5**	**30**	**23**	**22**	**18**	**10**	**7**	**81**	**53**

In 2019, he was appointed:

- Professor in Textile Technology and Materials Engineering doc. Ing. Michal Vik, Ph.D. (professorial lecture on the General form of the equation for evaluation of whiteness of secondary emitters in the CIE CAM02 colorimetric system at the public meeting of the Scientific Council of TUL on 5 November 2018).

On 7 January 2019, the selection committee recommended the admission of: 5 candidates for the position of research and research officer for the KMI FT TUL (1 position).

On 13 February 2019, the selection committee recommended the admission of: 2 candidates for the positions of assistants for the KNT FT TUL (2 positions).

On 23 May 2019, the Selection Committee recommended the recruitment of 1 candidate for the post of Assistant Professor for KDE (1 post). On 29 May 2019, the Selection Committee recommended the recruitment of 2 candidates for the post of Lecturer for KDE (1 post). On 6 August 2019, the selection committee recommended the admission of 1 candidate to the post of Assistant Professor for KNT FT TUL (1 post - 40% time).

In 2019, there was 1 competition for 1 candidate to fill the post of Research Officer - Postdoc KOD (1 post - under the MOTUL project). On 14/10/2019, the Selection Committee recommended the admission of 4 candidates for the above post. The MOTUL project is aimed at improving the quality of research activities at TUL by improving the training of the University's researchers and expanding and improving international cooperation. Research activity is one of the important performance indicators by which the University is evaluated. The deepening of cooperation with foreign partners will bring the possibility of personal growth of researchers, entire research teams, as well as significantly contribute to the achievement of highly rated results that will be reflected in the institution's evaluation. The KMI Postdoc 2 position has been cancelled due to repeated delays in granting visas to the selected candidate. This position was offered to other faculty and filled to address a different topic, as it was not otherwise possible to ensure the smooth running of the project.

During 2019, the following selected candidates worked within the MOTUL project and were included in the activities of the departments:

- Postdoc KTT Danas Sutula (joined in 2018) and the focus of his work was to model the thermal loading of tissues using the finite element method and validate the computational model using the experiment. The postdoc was involved in the KTT team and under the guidance of Assoc. Lukáš Čapek and worked for 12 months.
- Senior KMI Leonard Mwaikambo (joined 2018) and his expertise included the development of natural fibre reinforced composite systems using green matrices (biopolymeric, biodegradable and biocompatible) as a binder, knowledge of their production and use in industrial applications, which he developed during his six-month stay.
- Postdoc KMI Ahmed Hassanin (joining in 2019) his expertise was in textile reinforced composites, especially composites with new types of reinforcement (spacers, biodegradable reinforcements, etc.) or composites with modified matrices ("green" epoxy, matrices filled with nanoparticles, etc.). The postdoc was accepted for a six-month stay.
- Postdoc KOD Yordanka Angelova was accepted to work on the topic of comfort of fiber formations, in particular the study of the environment - clothing layer (textile sandwich structure) - human bond, the study of comfort of professional protective clothing, and textile components of car seats, the study of smart clothing applications to achieve optimal temperature and moisture transport through sandwich structures of clothing. At the end of 2019, preparations were made to hire the last employee of the MOTUL project, starting in January 2020 for a six-month period.

Table 13: Number of workers on the register as at 31 December 2019 - natural persons

Work.	Prof.	Doc.	OA	Assist.	lect.	Total ac. work.	Sciences. work.	Total ac.+scientific work.	OT	HSP	A rhyme.	Total	of which women
KTT	2	1	6	1	3	13	0	13	2	1	0	16	10
KMI	3	2	5	0	4	14	2	16	6	1	1	24	19
KHT	1	3	5	0	1	10	2	12	0	1	0	13	9
CODE	1	1	6	1	1	10	1	11	3	1	1	16	11
CNT	1	2	5	2	0	10	5	15	0	1	0	16	7
WHERE	0	2	2	0	9	13	0	13	5	1	0	19	12
DFT	0	0	1	0	0	1	0	1	1	5	0	7	6
SFT	0	0	0	0	0	0	0	0	0	4	0	4	4
Total	**8**	**11**	**30**	**4**	**18**	**71**	**10**	**81**	**17**	**15**	**2**	**115**	**78**

3.1 Education and training activities for employees

During the year, educational and training activities for employees were carried out at TUL.

- employees of KTT: "Nikon optical microscopy and NIS-Elements image analysis in industrial and material fields" Laboratory Imaging s.r.o. (Za Drahou 171/17CZ - 102 00, Prague 10)
- training to improve teaching skills (internal language school).

3.2 Motivational tools for rewarding employees

FT TUL does not have a Career Code for its academic staff, but there are Framework Criteria for Habilitation and Appointment to Professor Procedures. The presented criteria can be considered

as general recommendations representing the framework requirements for candidates for the habilitation procedure and the procedure for the appointment to professor at TUL FT. The opinion of the habilitation or evaluation committee is considered to be the decisive element in the procedures.

Personal evaluation (according to performance, on a project, monthly, semi-annually) is determined by the head of the department (or faculty department) depending on the results achieved by individual staff members. In 2019, at the proposal of the Dean, a special annual remuneration from the economic result was paid to the faculty staff by decision of the Senate. The amount of the individual employee's remuneration was decided on the basis of a proposal by the head of the department based on the annual summative evaluation.

FT TUL employees take advantage of the opportunities offered by TUL, such as: the possibility of placing a child in the university kindergarten ŠKATULKA and in the children's corner of TUL, accommodation in accommodation facilities (dormitories, hostels, start-up apartments), use of sports and rehabilitation offers of TUL.

3.3 Support for DSP students and young academics

Young researchers and, as prospective future colleagues, DSP students are especially supported. The following activities are financially supported:

- R&D activities from scholarship funds and specific research carried out in the form of Student Grant Competition (SGS);
- workshop for students of the doctoral programme of the Faculty of Textile and Mechanical Engineering of TUL;
- participation in competitions and exhibitions;
- participation in student scientific and professional activities (SVOČ);
- professional practice;
- Publication grants;
- foreign mobility (internships, placements, summer schools, conferences, teaching stays) is supported within the Erasmus+ university mobility programme, Erasmus+ KA107 faculty projects outside the European Union, CEEPUS.

Motivational tools for rewarding students

FT TUL pays merit scholarships to successful BSP and NMSP students. In 2019, scholarships in the total amount of 480 thousand CZK were paid. CZK, including the Red Diploma scholarships, out of the total scholarships paid.

In order to support students in doctoral study programmes, TUL pays scholarships from the contribution of the Ministry of Education and Science, which in 2019 amounted to CZK 3 591 thousand. CZK.

In 2019, the faculty paid an accommodation grant of CZK 1 439 thousand. CZK and a social scholarship in the amount of CZK 53 thousand. CZK.

4. Scientific research, development, innovation, artistic and other creative activities

FT TUL carries out creative activities according to §1 of Act No. 111/1998 Coll., on higher education in the following areas:

- basic research (funded by a grant, from GAČR funds)
- Applied research (funded by a contribution, TAČR funds, projects of ministries of the Czech Republic, collective research, contract research
- innovation activities (in the framework of complementary activities, in the form of contracts)
- artistic creative activity.

The creative activities of FT TUL are based on the Strategic Plan. In particular, research activities that are in line with rapidly developing research trends are supported. The scientific and research work is mainly related to those directions in which the Faculty has traditionally had a high level and quality staff background and where there is a high probability of obtaining financial support from various grant competitions. The development of the Faculty of Science in the field of science and research is mainly oriented towards these areas:

1. **New materials**. Research, development of applications of new materials in the field of clothing and technical textiles, development of composite structures containing inorganic fibres, nanoparticles and textile reinforcements, construction and evaluation of smart textiles.
2. **Metrology and new methods of quality assessment.** Modelling properties of fibre and textile formations using computer aided design, development of methods for assessing comfort of textiles, assessment of quality parameters, comfort of textiles and defects in textiles.
3. **Advanced textile technology.** Modifications and development of technologies for processing new materials, new energy sources and new transport media in textiles, interdisciplinary applications of textiles, use of optical fibres and shape memory materials for technical products, developments in textile sensors and sensors suitable for use in textiles. Environmental aspects of new technologies.
4. **The use of nanotechnology.** Research, development and application of nanotechnology in textiles, production and use of nanofibers and nanofiber structures, application of nanoparticles for special effects.
5. **Applying the results of artistic creativity in product design and innovation.** Application of the results of research into new materials and technologies in product design and innovation. Development of new methods and forms of design creation. Reconciling the artistic and technological components of design, preserving the artistic concept of designs while applying scientific methods and procedures.

The following are monitored as the main performance parameters of creative activities:

- projects solved
- publishing activity
- exhibition activities.

4.1 Solved projects

Scientific research projects focused on basic and applied research including experimental development are an integral part of the Faculty's activities. Funded projects enable extensive

development of R&D activities and form a significant part of the Faculty of Science budget. In 2019, the projects of the following providers were addressed: MIT 10, TAČR 6, MV 1, MŠMT 5. (excluding SGS)

4.1.1 EU Operational Programme Projects - Science and Research

Projects implemented within the framework of OP VaVpI (pre-seed - Nanofibre materials for tissue
Engineering and Innovative Products and Environmental Technologies) were completed in 2015 and are now in the sustainability period (a Financial Gap Update and Sustainability Monitoring Report is submitted for each reporting period for the projects).

The Faculty is actively participating in the project OP VVV Educational Infrastructure of TUL for increasing relevance, quality and access to education in the conditions of Industry 4.0, reg. no. CZ.02.2.67/0.0/0.0/16_016/0002553, thanks to which a number of new devices will be purchased. The activities of the faculty are mainly implemented within KA03 - Material and technical equipment.

The implementation of the project Hybrid Materials for Hierarchical Structures, reg. no. CZ.02.1.01/0.0/0.0/16_019/000843, continues. The project is carried out in cooperation with the Faculty of Engineering and the Institute for Nanomaterials, Advanced Technologies and Innovations. The aim of the project is interdisciplinary research that will help to achieve excellent results.

4.1.2 MIT projects

TRIO programme

1. FV10098 - MediTex - research and development of new types of advanced materials with high potential for application in specialty textiles for healthcare and aftercare. Principal investigator. Ing. Antonín Havelka, CSc.
2. FV10111 - SeniorTex - smart modular garments and special textile products with integrated electronic microsystems to improve the health care of the aging population and people with disabilities. Principal investigator: the VÚB a.s., co-investigator: the Faculty os Textile Engineering, doc. Ing. Antonín Havelka, CSc.
3. FV10356 - Hybrid security devices. Sintex a.s., co-supervisor: Faculty os Textile Engineering, prof. Ing. Prof. Jiří Militký, CSc.
4. FV10416 - Nanofibrous covers for skin defects. Principal investigator: the Faculty os Textile Engineering, prof. RNDr. David Lukáš, CSc.
5. FV20287 - Texderm - Textiles and clothing with increased comfort for the specific needs of children with skin problems. Principal investigator: the Faculty os Textile Engineering, doc. Ing. Antonín Havelka, CSc.
6. FV40323 - Vidtex - smart textiles and garments with high performance properties to increase safety in transport, especially visibility. Principal investigator: the Faculty os Textile Engineering, doc. Ing. Antonín Havelka, CSc.
7. FV40025 - Processing of waste and recycled textile fibres - Principal investigator: Rieter CZ s.r.o., co-principal investigator: the Faculty os Textile Engineering, Ing. Gabriela Krupincová, Ph.D.

OP PIK, Applications programme

1. CZ.01.1.02/0.0/0.0/15_019/0004528 SENIOR - Special clothing and textile products of high utility properties based on a new generation of intelligent materials that will increase the efficiency of health and social care for the elderly. Principal investigator: the VÚB a.s., co-investigator: the Faculty os Textile Engineering, doc. Ing. Antonín Havelka, CSc.
2. CZ.01.1.02/0.0/0.0/15_019/0004588 Sky Paragliders a.s. - research and development of new technical fabric for air rescue systems. Principal Investigator: the Faculty os Textile Engineering, prof. Ing. Jiří Militký, CSc.

OP PIK, Cooperation programme (within the Clutex - Technical Textiles Cluster, z.s.)

1. CZ.01.1.02/0.0/0.0/16_079/0008314 - Collective Research - Clutex II. The Faculty os Textile Engineering provided consulting services for the solution of some subprojects.
2. CZ.01.1.02/0.0/0.0/17_103/0011803 - Collective research - Clutex III. The Faculty os Textile Engineering provided consultancy services for some sub-projects
3. OPPI 5.1 spk 01/001 - Technical Textiles Cluster - 2nd stage provided FT TUL with consulting services for the solution of scientific research projects.

4.1.3 TAČR projects

1. J01000292 - Advanced Hybrid Tapes for Composites Manufacturing by Precision Winding, Principal Investigator: Technical University of Liberec, Faculty os Textile Engineering - Mohanapryia Venkataraman, M.Tech., M.F.Tech., Ph.D.
2. TF06000048 - SMARTTHERM - Intelligent thermoregulating fibres and functional textile coatings based on heat resistant encapsulated PCM. Principal Investigator: INOTEX spol. s r.o., Co-investigator: Faculty os Textile Engineering, prof. Ing. Jiří Militký, CSc.
3. TH04030390 - Complete removal of nitrogen and phosphorus from wastewater using purpose-made textile biomass carriers. Principal investigator: TUL - Faculty os Textile Engineering, Ing. Brigita Kolčavová Sirková, Ph.D., Institute for Nanomaterials, Advanced Technologies and Innovations, co-investigator.
4. TH04010031 - Hollow polymer fibre heat exchangers for the automotive industry. Principal investigator: Brno University of Technology, co-principal investigator: TUL - Faculty os Textile Engineering, Ing. Brigita Kolčavová Sirková, Ph.D.
5. TG01010117 - PROSYKO - Proactive commercialization system at TU Liberec
   a) Sub-project: Textile Composite Material Containing Conventional Polymer Fibres and Nanofibres, Principal Investigator. Jiří Chvojka, Ph.D.
   b) Sub-project: absorbable replacements of lateral ligaments of the knee joint, Principal investigator: the Technical University of Liberec, Sub-project leader: doc. The principal investigator of the project, Prof. Ing. Lukáš Čapek, Ph.D.

4.1.4 Projects of the Ministry of the Interior - Security Research Programme

- VI20172020059 - Smart fabrics against CBRN agents. Principal investigator: the State Institute of Nuclear, Chemical and Biological Protection, v.v.i. TUL - Faculty os Textile Engineering - doc. Ing. Pavel Pokorný, Ph.D., Professor of Textiles, Faculty os Textile Engineering, Ph.D.

4.1.5 Projects of the Ministry of Education, Youth and Sports - Inter-Exellence Programme

- Inter-Eureka - 170921 - Wearable IoT Solver: GiTy a.s. Masaryk University, TUL - Faculty os Textile Engineering - doc. Ing. Antonín Havelka, CSc.

4.1.6 Projects of the Ministry of Education, Youth and Sports - Mobility Programme

1. 8J19UA011 - Research and development of nanoparticle modified textiles for the protection of human health and electronic devices. Principal investigator: TUL - Faculty os Textile Engineering, doc. Ing. Vladimír Bajzík, Ph.D.
2. 8JCH1064 - Design of multilayer micro/nano fibre structures for air filtration. Principal investigator: TUL - Faculty os Textile Engineering, prof. Ing. Prof. Jiří Militký, CSc.

4.2 Project applications prepared and submitted

Table 14: Project applications ready in 2019

Provider	Applicant(s)	Name of the project application	Solver
GACR - standard	UK FF Hradec Králové + FT TUL	Nanofibrous polymers with restricted access material function for on-line chromatographic extraction of complex matrices	Ing. J. Chvojka, Ph.D.
Min. of Culture - NAKI	UMP + FT TUL	Textile printing industry in the Czech lands. Identification, analysis, conservation-restoration and sustainable preservation of printed textiles of the 19th and 20th centuries	prof. Ing. J. Wiener, Ph.D.
TAČR - TREND	ILC Factory a.s. + FT TUL	Excercise Family	doc. Ing. M. Viková, Ph.D.
Ministry of Education, InterAction	FT TUL	3D woven nano composites for high-tech applications - THREDW	doc. R. Mishra, Ph.D., B.Tech.
GP TUL - PURE	FT TUL	Interaction of laser radiation with fiber structure	prof. Ing. J. Wiener, Ph.D.
GP TUL - RISING STARS	FT TUL	Study of the liquid-gas phase transitions in textile hybrid structures	Ing. A. A. Mazari, Ph.D.
GP TUL - RISING STARS	FT TUL	Anti-adhesive nanofibrous layers for new application in regenerative medicine	Ing. J. Erben
Min. of Health - AZV	3rd Faculty of Medicine of Charles University + Institute of Life Physics and Genetics + FT TUL	Nanofibre intraocular drainage implant for the treatment of glaucoma	Ing. J. Chvojka, Ph.D.
Min. of Health - AZV	FT TUL + UK	Prevention of intestinal anastomotic leak and postoperative adhesions using nanofibrous biodegradable materials	RNDr. J. Horáková, Ph.D.
H2020 - BBI	Foreign partners + FT TUL	Hemp fabrics for fashion, home and technical textiles from 100% bio-based fibres and finishing molecules using the flax value chain	Ing. B. Kolčavová Sirková, Ph.D.
H2020 - Twinning	FT TUL + foreign partners	N4HPI - Network for High Perfomance Implants	doc. Ing. L. Čapek, Ph.D.
INTERREG V-A Czech Republic - Poland	FT TUL + foreign partners	Nanotechnology on the CZ-PL border area	Ing. J. Chvojka, Ph.D.
2019 Total			**12**

4.3 Publication activity - R&D outputs

Publication activities of individual faculty members are of great importance in the scientific research and innovation activities of the faculty and are a reflection of its scientific and pedagogical potential. This activity is an important criterion for evaluating the quality and effectiveness of R&D&I activities in general. The evaluation of publication activity serves as a criterion for the allocation of financial resources to the faculty, for accreditation procedures, for the career development of individual staff members, etc. The publication activity of the staff is reported annually in CEP, the RIV database.

Methodology 17+

In October 2019, the Government Office published on the R&D&I Information System all the reports that serve as the basis for the second year of the evaluation of research organisations according to Methodology 17+.

The evaluation of selected results carried out by the Research, Development and Innovation Council Department through Expert Panels using remote reviews is one of the bases for the evaluation of research organisations according to the M17+ Methodology under **Module 1**. The published reports summarising the findings of this evaluation by discipline group are complemented by detailed comments from the chairs of the Expert Panels and an accompanying list of results.

Authors or co-authors from the Faculty os Textile Engineering of TUL were involved in 18 submitted results (16 in Engineering and Technology, 2 in Natural Sciences, criterion "social relevance") in 2016-2017, 5 results were evaluated with grade 2 (excellent result), 3 results with grade 3 (very good result), 4 results with grade 4 (average result), 5 results with grade 5 (below average result) and 1 result not evaluated.

Bibliometric analyses prepared by the Research, Development and Innovation Council Department in detail for individual research organisations are the main basis for their evaluation according to the M17+ Methodology under **Module 2**. They follow on from the Sectoral Bibliometric Analyses commented by the Expert Panels, which were carried out for research organisations on the basis of the Web of SErasmuscience database.

A total of 354 TUL results for 2016-2017 were analysed, of which 132 results include at least one co-author from the Faculty os Textile Engineering. In the decile ranked by journal Article Influence Score, 2 (1.5%) results are recorded, 15 (11.5%) in the first quartile, 17 (13.1%) in the second, 68 (52.3%) in the third and 30 (23.1%) in the last quartile.

"At the request of TUL, a special analysis of the WoS category MATERIAL SCIENCE, TEXTILES, which belongs to the field of Material engineering, has been prepared in 2019 (link).

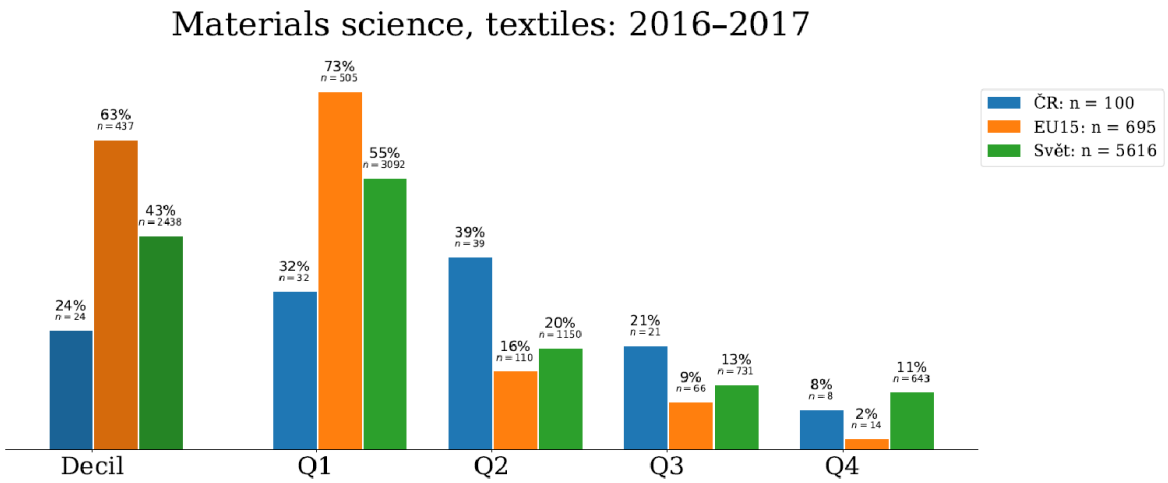

Fig. 2: Web of Science documents of TUL for the year 2016-2017 in Materials Science - Textiles.

At first glance, it is clear that this qualitative profile is worse than that of the industry as a whole. The panellist discusses this in more detail in his commentary. From his conclusions, with which I agree, I quote:"

"The subfield of MATERIALS SCIENCE, TEXTILES is undoubtedly an important field within the Czech Republic, in quantitative indicators significantly ahead of the international standard. Most of the publications come from a single institution, which is the Technical University of Liberec. Their quality according to the criteria used unfortunately lags behind the international standard. The other two institutions, namely Charles University and the University of Pardubice, show much fewer publications, but of the highest quality."
"Also, the share of international cooperation is less significant in this subfield than in the whole field 2.5. This fact may be related to the fact that research and development of textile materials is still tied to the domestic economy and therefore not very attractive for international cooperation. There is no significant correlation between the quality of publications and the share of international cooperation. Very roughly speaking, less than half of the publications were produced in international cooperation."

Publication activity in 2019

FT TUL proceeded to a detailed evaluation of the results in international rankings. Thomson Reuters' InCites analytical tool (http://incites.isiknowledge.com/), based on citations of publications indexed in the Web of Science (WoS), enables advanced analysis of publication activities and the impact of research work at the level of individuals, teams, departments, institutions and individual disciplines.

Technical University of Liberec has 262 outputs recorded in the Web of Science database for 2019 (as of 30 March 2020). Materials Science - Textiles is one of the WoS research subareas in which TUL and especially the Faculty os Textile Engineering is active. InCites offers the opportunity to compare the scientific outputs of the Faculty os Textile Engineering of the Technical University of

Liberec in this research sub-area with organizations not only in the Czech Republic, but also in Europe and the world. In 2019, 63 documents are recorded in this subfield for TUL (of which 60 documents are from authors or co-authors of FT TUL), which ranks FT TUL 10th in the number of documents compared to other (approx. 1810) organizations in the world.

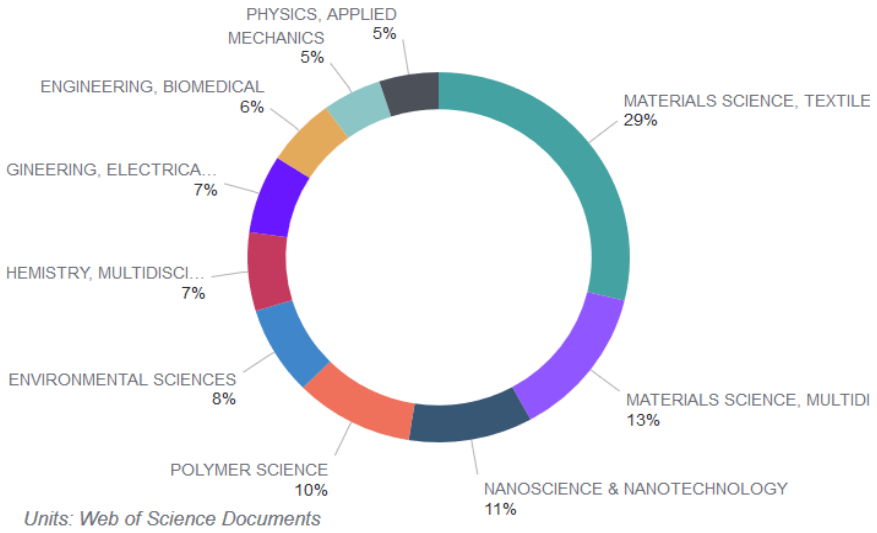

Fig. 3: Share of documents in WoS fields in 2019 of the TUL organization (top 10).

In 2014-2018, TUL (FT TUL) with a total number of 251 papers in the Materials Science - Textiles research subfield ranks 7th in comparison to other (approx. 2819) organizations in the world (37.8% of papers in Q1 and 28.0% in Q2).

The total number of papers in Materials Science - Textiles for the Technical University of Liberec in the years 1980-2019 is 470 and ranks the university 21st out of 3912 organizations (of which 30.0% of papers in Q1 and 28.6% in Q2).

4.4 Exhibition activities - artistic outputs

The Working Committee of the Council of Higher Education Institutions for Schools and Faculties of Arts initiated, together with the Ministry of Education, Youth and Sports of the Czech Republic, the creation of a register of results of creative artistic activity (RUV) and a methodology for the evaluation of outputs. On the basis of this, the works created by teachers and possibly also students of these schools are to be classified into categories and combinations of categories with different scores. There are several reasons for this: the desire to map creative activities within the field of the arts in relation to universities, the need to formulate trends and lines of development, the statement of the performance of universities with accredited arts curricula, cross-species comparisons in the field of artistic output, and comparisons with research as a whole.

The success of the TUL Faculty of Arts and the staff of the Department of Design is obtaining the status of an adjoining faculty with the possibility to apply the results of artistic creative activity in the RUV. For the period 2019, 25 artistic outputs in two segments have been submitted for certification for FT TUL: Design (sub-segments: Fashion, Textile, Jewellery and Glass, Porcelain, Ceramics) and Fine Arts (sub-segment: Fine Arts). Information on the results of the individual institutions involved in this project is available from www.iruv.cz.

Within the framework of artistic creative activities, the Faculty of Design of the Technical University of Ljubljana guarantees the activities of the university's Gallery N in Jablonec nad Nisou, where it organizes exhibitions of its own work, student work and many invited guests. Design Department staff also participate as exhibitors in other exhibition activities. The programme of Gallery N includes various artistic directions, Czech and foreign works and presentation of both well-known authors and student works of other universities. In 2019, the presentation focused on the work of other universities of a similar nature.

Within the framework of the activities of Gallery N, the Department of Design of the Faculty of Fine Arts of TUL organized eight exhibitions in 2019 in the field of: design, applied art, artistic craft, fine art, photography. Gallery N 2019 programme:

- January - Exhibition of TEXTILE and CLOTHING, semester works of BSTON students. Opening with fashion show.
- March - Exhibition Textile studios, VŠVU Bratislava.
- May - Exhibition BAKALAUREATES 2019. Exhibition of the final works of BSTON.
- May - Exhibition GLASS and SPARK, exhibition of semester works of BSTON students.
- September - Exhibition ANOTHER COUNTRY, Jiří Jiroutek and Pavel Plánička, photographs.
- October - eXISTENCE, Product Design Studio in Železný Brod.
- November - Exhibition NAD NISOU, Zdena Šafka Řeháková, painting-
- December - Exhibition BOLZANOVA, Department of Photography FAMU, Department of Alternative Theatre DAMU.

Academic staff of KDE participated in exhibitions or as guarantors of exhibitions in the Czech Republic (17) and abroad (2):

- Krotký, Svatoslav. NANO-OBJECTS. Prague. 2019.
- Krotký, Svatoslav. Guarantor. BAKALAUREATS 2019. Jablonec n. N.. 2019.
- Šikolová, Ludmila. SKLO-ŠPERK 2019. Guarantor of the exhibition of BS Design students. Jablonec n. N. 2019
- Šikolová, Ludmila. TOPIC SPARK. Jewellery exhibition. Prague. 2019.
- Šikolová, Ludmila. Contemporary European jewellery from the collections of the Museum of Bohemian Paradise in Turnov 2019. Prague. 2019
- Šikolová, Ludmila. SALON6. Železný Brod. 2019.
- Plíva, Oldřich. GLASS PLEASURES 1946 - 2019, Prague. 2019.
- Plíva, Oldřich. LHOTSKÝ and guests 2019. Železný Brod. 2019.
- Plíva, Oldřich. PAD Paris 2019. Paris. France. 2019.
- Plíva, Oldřich**.** RETROSPECTION - ART GLASS EXHIBITION Lviv 2019. Ukraine. 2019.
- Kadlecová, Zuzana. Painters of Pojizeří 2018. Exhibition of paintings. Semily, 2019.
- Kadlecová, Zuzana. BODYSOUL.Painting exhibition. Semily. 2019
- Střílková Válková, Jana. TOPIC SPERK. Jewellery exhibition. Prague. 2019.
- Střílková Válková, Jana. NEW GENERATION. Jewellery exhibition. Semily, 2018.
- Střílková Válková, Jana. Contemporary European jewellery from the collections of the Museum of Bohemian Paradise in Turnov 2019. Prague. 2019.
- Střílková Válková, Jana. SALON6. Železný Brod. 2019.
- Střílková Válková, Jana. reGeneration 4, Turnov. 2019.
- Veselá, Zuzana. Zuzana Veselá - Saint-Tropez collection. Prague. 2019.
- Veselá, Zuzana. Guarantor. Mercedes -Benz Prague Fashion Wee 2019. Prague. 2019.

5. Internationalisation

In 2019, FT TUL continued its internationalisation, which is based on the long-term supported activities anchored in the Long-Term Plan. The Faculty has developed long-term cooperation with most of the foreign universities dealing with textile issues from all over the world. International contacts are deepened by solving joint projects, preparing and organizing mutual meetings, seminars and conferences, preparing joint publications, exchange of students and teachers. Long-term cooperation exists with practically all major textile universities in the world. The following are monitored as the main performance parameters of creative activities:

- international excellence
- cooperation agreements (MOUs)
- organisation of international seminars and conferences
- mobility - departures, arrivals (according to funding - Erasmus+ KA103, Erasmus+ KA107, CEEPUS, Vysegrad funds, bilateral agreements between universities and interstate agreements)
- joint scientific research projects.

5.1 International Excellence FT TUL

The Faculty os Textile Engineering is a full member of the International Association of Textile Faculties "AUTEX". A representative of the Faculty os Textile Engineering is a member of the committee for the revision of the accreditation of the joint study programme of the association Autex called E-Team NMSP "Textile Engineering" accredited in Ghent, Belgium.
As a member of the Association of Textile - Clothing - Leather (ATOK), it participates in the meetings of EURATEX (European Apparel and Textile Confederation). FT TUL participates in activities related to the international cooperation with the EU "European Technology Platform - Fibers Textiles Clothing" in eight thematic groups

1. Circular economy - Innovative textile material approaches focussing on sustainability
2. Resource efficiency - Advanced textile surface processiong technologies
3. Textile Industry 4.0 - Advanced manufacturing technologies for fibers-based materials
4. Innovative textile and composite solutions for construction and sustainable infrastructure
5. Smart textile solutions for functional closthing, weables and innovative medical technology
6. Digital fashion

Involvement in editorial boards of journals

Materials Science - Textiles is one of the research subareas of the Web of Science, in which FT TUL is active and is a key area for the faculty in the field of R&DaI. There are 24 journals indexed in the Journal Citation Reports for 2019 in the Materials Science - Textiles subfield. In seven journals, FT TUL has representation on the editorial board (according to AIS 2×Q1, 4×Q2, 2×Q3), i.e. the faculty has representation of academic staff on the editorial boards of prestigious international textile journals that cover the full breadth of the textile field.

FT TUL has been a **co-publisher of the professional journal** *Fibres and Textiles* (Slovakia), ISSN: 1335-0617 (http://vat.ft.tul.cz) indexed in the SCOPUS database (https://www.scopus.com/sourceid/17198) since 1994. Members of the editorial board - doc. Ing. Maroš Tunák, Ph.D., Ing. Veronika Tunáková, Ph.D., and honorary members of the editorial board - Ing. Jana Drašarová, Ph.D., prof. Ing. Jiří Militký, CSc.

Faculty members are **members of a number of scientific committees of various journals and conferences, professional organizations, and administrative committees**:

prof. Ing. Jiří Militký, CSc.

- president of Czech Monitoring Committee of FEANI Brussels, Belgium
- Honorary Lifetime Contribution Award (TBIS) member
- Vice-Chairman of International Executive Committee, (TBIS)
- Member of editorial boards of journals (The Journal of the Textile Institute (England), Autex Research Journal (Poland), Research Journal of Textiles and Clothing (England), Fibers and Textiles in Eastern Europe (Poland), Przeglad Wlokieniczny (Poland), Journal of Fiber Bioengineering & Informatics (Hong Kong), Journal of Textile Engineering (Hindawi), Vlákna a textil (Slovakia), The Information Bulletin of the Czech Statistical Society (Czech Republic).

prof. Ing. Michal Vik, Ph.D.

- CIE Commission Internationale de L'éclairage (Official division 1: Vision and colour member)
- OSA (Optical Society of America)
- ICCTM (International Committee on Cotton Testing Methods)
- CNK CIE (Czech National Committee of the International Commission on Illumination)
- Member of the Editorial Board of the "Světlo" Magazine
- membership in the CSO (Czech Society for Lighting)
- CIA (Czech Institute for Accreditation) - expert
- BSI (British Standardisation Institute) - expert
- Member of TC 1-95 CIE

doc. Ing. Martina Viková, Ph.D.

- ICCTM (International Committee on Cotton Testing Methods)
- AIC (International Colour Association)
- CSO (Czech Society for Illumination)
- Membership in CIE Technical Committees TC1-95, TC 1-97

Ing. Jiří Havlíček, CSc.

- Member of the Administrative Committee of the Association of Textile, Clothing and Leather Industry ATOK
- Court-appointed expert in Textiles and Economics

RNDr. Jana Horáková, Ph.D.

- Member of the European Society for Biomaterials
- Member of the Society for Bioimplantology ČLS JEP

doc. Ing. Lukáš Čapek, Ph.D.

- Member of the Société de Biomécanique
- Vice-President of the Czech Society for Biomechanics

Ing. Jana Ornstová

- President of the national Czech section of the International Federation of Knitting Technologists

prof. Ing. Luboš Hes, DrSc.

- Member of the European Committee for Standardization CEN/TC 248, ISO/TC 38 (WG 17)
- Member of the Fiber Society, Princeton, USA

- Member of Textile Institute Manchester
- IMEKO (International Society for Technical Measurements) Prague, Czech Republic, Czech representative in TC 12 (Temperature Measurement)
- Member of the editorial boards of the Journal of Industrial Textiles (USA), Textile Research Journal (USA), Journal of Natural Fibers (USA), Fibers and Textiles in Eastern Europe (Poland), Journal of Engineered Fibers and Fabrics (England).

Ing. Gabriela Krupincová, ph.D., CSc.

- Vice President of the Administrative Committee CLUTEX - Cluster of Technical Textiles, o.s.

doc. Dr. Ing. Dana Křemenáková

- Member of the committee of the expert advisory body of the Ministry of Education and Science for mobility within bilateral and multiratelar scientific and technical cooperation

Ing. Pavla Těšinová, Ph.D.

- FT representative for the meeting of the International Association of Textile Faculties "AUTEX"
- Member of the Committee for the revision of the accreditation of the joint study programme of the Autex Association called E-Team NMSP "Textile Engineering"
- Member of the Editorial Advisory Board of Textile & Leather Review
- Member of the Working Group on Entrepreneurship and Innovation, Research and Development for the preparation of the Development Strategy of the Liberec Region 2021+

Ing. Hana Pařilová, Ph.D.

- active work in TNK 31 (technical standardization committee), approval of adopted standards, revision of current standards

Ing. Jana Šašková, Ph.D.

- Member of the Board of the Society of Textile Chemists and Colourists

Prof. Dr. Ing. Zdeněk Kůs

- Member of the Board of the Faculty of Medicine of TUL, Faculty of Science of TUL, ZČU, ZSF of JČU, Board of MU CTU
- Vice-Chairman of the TAČR
- Member of the Monitoring Committee of OP VAVpI
- Member of the OPIE Monitoring Committee
- Member of the Planning Commission of the OP JAK Programme
- Member of the Council of the Engineering Academy of the Czech Republic
- FT representative in SV CTPT

Ing. Petra Komárková, Ph.D.

- member of the editorial board of Tekstilec (Slovenia)

National and international university awards

Oldřich Jirsák: Diploma of Mensa ČR for significant contribution to the intelligence of the nation, promotion of intellectual culture and spreading the good name of the Czech Republic in the world. He also received the Order of Laurel for his lifetime contribution to science and research. The Chamber of Commerce of the Czech Republic annually awards the Order of Laurel to prominent domestic and foreign personalities who positively influence our society.

Jakub Erben: 1st Prize of The International Théophile Legrand Textile Innovation Award -

Fibrous three dimensional scaffolds for preparation of thymus organoid - T cells immunotherapy. He won the prestigious international competition with nanofibre tissue scaffolds that serve as the basis for the formation of thymus organoid.

Lubos Hes: Doctor honoris causa from the National Institute of Technology, Jalandhar (NITJ).

International evaluation of the university or its unit, including foreign accreditation

All study programmes of FT TUL are accredited by the European Federation of Engineering National Associations "FEANI" (graduates can obtain the EURING degree after fulfilling other conditions (engineering practice). The professional organization "The Textile Institute Manchester" accredits the study programmes BSP "Textile", NMSP "Textile Engineering" and DSP "Textile Engineering" until 2021.

5.2 Cooperation agreements

Long-term cooperation exists with virtually all major textile universities in Europe and cooperation with major universities around the world is developing. The following table includes contracts exclusively with FT.

Table 16: International cooperation agreements in force in 2019

The Continent	America	Europe	Asia	Africa	New Zealand
Contracting partners in the EU	-	47	-	-	-
Contracting partners worldwide	1	22	23	6	1

New cooperation agreements (MOUs or Inter-institutional agreements) have been signed with the following institutions:

- Universitat Autonoma de Barcelona (UAB), Spain
- Ecole Natinale d'Ingenieurs de Tarbes , France
- National Taipei University of Technology , Taiwan

For the purpose of applying for Erasmus+ KA107 for 2020, Letters of Intent were secured in 2019 from: Japan Kyoto Institute of Technology and Shinshu University, Ueda; Polytechnic University of Tirana, Albania; Waikato Institute of Technology, New Zealand; Ramajamangala University of Technology Thanyaburi, Thailand. Existing cooperation with these universities will be deepened.

Contracting partners in the EU

1. Pädagogische Hochschule Wien, Austria
2. Universiteit Gent, Gent, Belgium
3. KU Leuven, Faculty of Engineering Technology, Belgium
4. Technical University of Gabrovo, Gabrovo, Bulgaria
5. Trakia University, Stara Zagora, Bulgaria
6. University of Zagreb, Croatia
7. VIA University College, Denmark
8. TTK University of Applied Sciences, Estonia
9. Tampere University of Technology, Tampere, Finland
10. ENSISA, Mulhouse, France
11. ENSAIT, Rubaix, France
12. Ecole Natinale d'Ingenieurs de Tarbes, France
13. Ecole Des Mines D'Ales, France
14. RWTH Aachen University, Aachen, Germany

15. Albstadt-Sigmaringen University, Albstadt, Germany
16. Technical University of Dresden, Insitut for Textilengineering, Dresden, Germany
17. University of Applied Sciences, Zwickau, Germany
18. University of Applied Sciences, Monchengladbach, Germany
19. Fachhochschule Bielefeld University of Applied Sciences, Germany
20. Hochschule Hof, Germany
21. Hochschule Reutlingen, Germany
22. Piraeus University of Applied Sciences, Greece
23. Budapest University of Technology and Economics, Budapest, Hungary
24. Galway-Mayo Institute of Technology, Ireland
25. Kaunas University of Technology, Kaunas, Luthiania
26. Koszalin University of Technology, Koszalin, Poland
27. Academy of Fine Arts in Wroclaw, Wroclaw, Poland
28. Academy of Art Lodz, Lodz, Poland
29. Lodz University of Technology, Lodz, Poland
30. Kazimerz Pulaski University of Technology nd Humanities in Radom, Poland
31. Katowice School of Technology, Poland
32. University of Beira Interior, Covilha, Portugal
33. University of Minho, Guimaraes, Portugal
34. ESAD, Senhora da Hora, Portugal
35. Universidade da Madeira, Portugal
36. Gheorthe Asachi Technical University of Iasi, Iasi, Romania
37. Aurel Vlaicu University of Arad, Romania
38. Alexander Dubcek University of Trencin, Trencin, Slovakia
39. Academy of Fine Arts and Design Bratislava, Slovakia
40. University of Maribor, Maribor, Slovenia
41. University of Ljublajana, Slovenia
42. Universitat Politecnica De Catalunya, Spain
43. Escola Messana, Spain
44. Universitat Politècnica de València, Spain
45. Escuela de Arte y Superior de Diseno de Burgos, Spain
46. Universitat Autonoma de Barcelona, Spain
47. Textilhogskolan, Hogskolan I Boras, Sweden

Fig. 4: Cooperation agreements in the EU

Contracting partners worldwide

1. Polytechnic University of Tirana, Albania
2. Vitebsk State Technological University, Belarus
3. University of Science and Technology of China (USTC), Hefei, China
4. University of Science and Technology of China, Zhejiang, China
5. Textile School, Wuhan Textile University, Wuhan, China
6. National Research Institure, Giza, Egypt
7. Bahir Dar University Institute of Technology for Textile, Garment and Fashion Design, Bahir Dar, Ethiopia
8. Indian Institute of Technology Delhi, India
9. Sardar Vallabhbhai Patel Insitute of Textile Management, Coimbatore, India
10. Anna University, Chennai, India
11. The Technological Institute of Textile and Sciences, Bhiwani, India
12. NIT Jalandhar, Jalandhar, India
13. Defence Bioengineerign and Electromedical Laboratory, Bangalore, India
14. Defence Research and Development Organisation, Bangalore, India
15. DKTE Society´s Textile and Engineering Institute, Ichalkaranji, India
16. Kumaraguru College of Technology, Coimbatore, India
17. Department of Textile Technology, MLV Textile Engineering College, Bhilwara, India
18. Governmental College of Engineering and Technology, Serampore, West Bengal, India
19. Faculty of Textile Science and Technology, Shinshu University, Shinshu, Japan
20. Kyoto Institute of Technology, Japan
21. Auezov South Kazakhstan State University, Kazakhstan
22. University of Mauritius, Réduit, Mauritius
23. Waikato Institute of Technology, New Zealand
24. University of Bergen, Norway
25. National Textile University, Faisalabad, Pakistan
26. Balochistan University of Information Technology, Engineering and Management Sciences, Quetta, Pakistan
27. Durban University of Technology, Durban, South Africa
28. Rajamangala University of Technology, Krungthep, Thailand
29. Rajamangala Universtiy of Technology Thanyaburi, Thailand
30. Faculty of Science, Chulalongkorn University, Thailand
31. National Taipei University of Technology, Taiwan
32. National Engineering School of Monastir, Tunis
33. Hacettepe University, Ankara, Turkey
34. Istanbul Aydin University, Istanbul, Turkey
35. Uludag University, Bursa, Turkey
36. Cukurova University, Adana, Turkey
37. Dokoy Eylul University, Izmir, Turkey
38. Ege University, Izmir, Turkey
39. Erciyes Universtiy, Kayseri, Turkey
40. Mimar Sinan Fine Arts University, Guzel, Turkey
41. Gaziantep University, Sehitkamil/Geziantep, Turkey
42. Pamukkale University, Denizli, Turkey
43. Istanbul Technical University, Istanbul, Turkey
44. University of Gaziantep, Turkey
45. Atilim University, Turkey
46. Bursa University of Technology, Turkey
47. Marmara University, Turkey

48. Suleyman Demirel University, Turkey
49. Faculty of Engineering, Busitema University, Uganda
50. Birmingham City University, United Kingdom
51. The Scottish College of Textiles, Edinburgh, United Kindgom
52. Ukrainian Engineering and Pedagogical Academy, Kharkov, Ukraine
53. The University of Alabama at Birmingham, Birmingham, USA

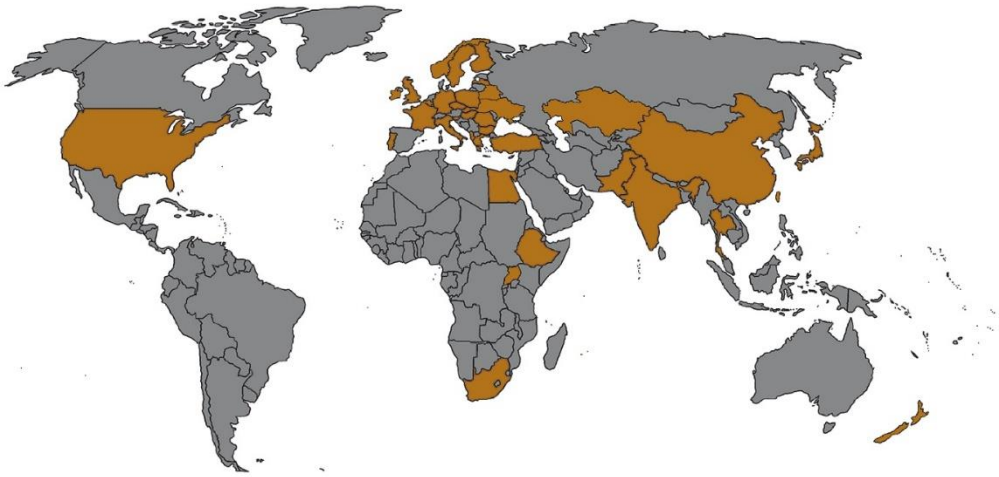

Figure 5: Cooperation agreements around the world.

5.3 Scientific conferences and seminars

Organisation of conferences

Textile Research Symposium 17 - 19 June 2019

International conference organized on the basis of Czech-Japanese cooperation with international participation co-organized by The Textile Machinery Society of Japan The conference was attended by 96 active participants and 28 participants from among the employees and students of FT TUL and also foreign companies (Japan and Turkey). In total, the conference was attended by representatives of 10 countries (Czech Republic, Japan, China, Poland, Belgium, Turkey, India, USA, South Africa and Pakistan). A book of two-page abstracts was published. 96 papers were published in the proceedings, of which 56 papers were presented as lectures and 40 papers were presented as posters. (http://trs2019.ft.tul.cz).

Participation in the organisation of conferences

- Ing. Pavla Těšinová, Ph.D. member of the International Scientific Committee of the Autex 2019 conference
- prof. Ing. Jiří Militký, CSc. and doc. Rajesh Mishra member of the International Scientific Committee of the TBIS 2019 conference

Summer school

International Summer School of Patternmaking 2019 - The Department of Textile Technology of the Faculty of Textile of the Technical University of Liberec organized the third edition of the 14-day International Summer School of Patternmaking in August 2019. The basic mission and objective of the summer school of patterning is to explain the process of production of flat textiles

- woven and knitted fabrics from the first idea associated with the application of the fabric to its final production using the two main textile technologies of weaving and knitting. 7 participants from all over the world attended this year's course: Romania, Czech Republic, Slovenia, Canada, USA, Germany.

Summer School of Composites with Textile Reinforcement - 14 Chinese students from ZSTU Zhejiang in Hangzhou participated in this event from 15 to 18 July 2019.

5.4 Mobility

Foreign (internships, placements, summer schools, conferences) is supported mainly within the university mobility programme Erasmus+ KA103, faculty mobility programme Erasmus+ KA107, CEEPUS. Mobility within the framework of inter-institutional agreements and inter-state agreements are also accepted and in some cases supported by a scholarship from the sending state or the receiving foreign university.

Erasmus+ KA103, Erasmus+ KA107

The Eramus+ KA 103 projects focus on the mobility of individuals on the basis of inter-institutional agreements between institutions. It is possible to carry out study and work stays for students in the Programme Countries (the 28 EU Member States, the EEA countries Iceland, Liechtenstein and Norway, as well as Turkey and the former Yugoslav Republic of Macedonia). Academics can benefit from teaching stays and, together with research staff, can also be supported in training. Within the Erasmus+ KA107 project, teaching, study and training stays for students and staff can be implemented. All study visits are subject to credit recognition upon return to the home university in the framework of cooperation with Partner Countries (other non-programme countries).
A total of 32 courses were opened for foreign students with teaching in English , especially for Erasmus+ students in Textile Engineering and a new course in Design with 10 courses including studio design.

The 2017 Erasmus+ KA107 project application for a two-year duration was approved for 18 months for incoming students from Japan and India; 9 months for outgoing students to the same countries; 14 days for both incoming and outgoing teachers from India.
The selection of participants was always central to the home institution and the host institution approved the proposal as part of the signing of the Learning Agreement/Teaching Agreement. In all cases, the proposed candidates were approved and subsequently mobilised. At FT TUL, the selection was published on notice boards and the FT website and the selected participants were confirmed by the Dean's College.
In the framework of KA107 Japan - Shinshu University (SUN): students from SUN participated in teaching and laboratory work on defined topics in the Department of Apparel, Department of Materials Engineering and Department of Nonwovens and Nanofibrous Materials. All students were positively evaluated by their tutors, including their language level. One FT TUL student went to SUN and has been involved in the collective and research enough to develop his dissertation topic.
In the framework of KA107 India - Department of Textile Technology, Indian Institute of Technology - Delhi (IIT): this mobility was fulfilled according to the approved plan and in addition the increased disbursement after the first year of the project was fulfilled. The selection criteria

for incoming Indian IIT students were communicated not only at IIA but also in person during the teaching placement and both ways. As a result, the students who arrived were very well equipped in language and engaged without any problems in the teaching and laboratory work associated with their thesis in the Department of Technology and Structures and the Department of Materials Engineering, FT TUL. Erasmus+ KA107 enabled the ranks of the incoming IIT students to be extended to include PhD students. So far, only students of the postgraduate and bachelor's degree form have been coming. It was also possible to include two research groups, not only the usual group led by Prof. Behera, but also another led by Prof. Ishtiaq. The lecturers filled the classes with lectures from their areas of expertise namely comfort of textiles, nanofibre manufacturing, nanotechnology, fibre trajectories in yarn and yarn in fabric and introducing the institutions of both sides to each other for students and academics.

Erasmus+ project KA107 application from 2018 for a two-year duration of 8 months for incoming students from Tunisia; 40 days of teacher mobility with Tunisia. Additional funding was approved to support international mobility not approved in the KA107 application with Japan, Mauritius, New Zealand, Thaiwan, Ukraine, USA, Kazakhstan, Belarus. These funds will be spent under the same conditions as KA107.

The 2019 Erasmus+ KA107 project application for a two-year duration was submitted for mobility with Japan. The application was not approved for capacity reasons. Additional funding was approved to support international mobility for students not approved in the KA107 application under the same conditions of disbursement, including an open call for applications.

All outgoing students are given full credit for the credits they complete at the host institution abroad. Before arrival, students will already receive a proposal for future recognition within the university process maintained in IS STAG by means of a "Learning Agreement of Study" or "Learning Agreement of Traineeship" document. It is an established practice of FT to consult recognition with supervisors of disciplines, courses and relevant Vice-Dean. In particular, compulsory courses, compulsory electives and exceptional courses that are not compatible are recognised under their original designation as electives. The document proving the recognition in iS STAG is called "The sending institution's transcript of records - proof of recognition" and is given to the student together with the record of the completion of the study abroad in IS STAG.

All foreign students arriving for full-time study in the Czech language are seamlessly integrated into study groups together with Czech students. Short-term foreign students with teaching or training in English are mainly involved in projects in existing working groups in the departments and are also included in the studies of Czech students in courses taught in English for Czech students, such as "Textile Engineering", "Fundamentals of Clothing Comfort". The university and the faculty provide administrative services throughout the study period and the ESN student club helps to provide leisure activities outside the classroom.

Internships for incoming international students

Based on negotiations with foreign organisations, in 2019 FT opened its laboratories to their students for joint research projects in the form of summer work placements and internships organised individually, funded by Erasmus+ or other scholarships. The topics were announced on the basis of cooperation between the departments. In total, 58 work placements/internships were carried out by foreign students for a total of 136 student-months.

CEEPUS

Another mobility programme that was in force in 2019 is CEEPUS, which is a Central European university exchange programme aimed at regional cooperation within university networks. FT TUL is involved in the network "Ars-Techne: Design and Development of Multifunctional Products" CIII-SI-0217-00-1617 and 1718, which is sponsored by the University of Maribor. Other countries involved are Slovakia, Austria, Serbia, Croatia and Poland. In total, there are 13 universities. There was one arrival of a student for a study stay.

Teaching students in the E-Team programme

FT participates in regular teaching in the Master in Textile Engineering program sponsored by Ghent University, Belgium within the activities of the Autex Association. In 2019, two teachers went on a one-week teaching placement funded by Erasmus+ to the Technical University Lodz, Poland, namely:

- prof. Jakub Wiener - "Dyeing of textiles, printing, textile chemistry, finishing of textiles"
- doc. Rajesh Mishra - "Introduction to Nanotechnology, Nanoscale Phenomena, Mechanical Properties in Nanoscale Materials, Carbon Based Nanomaterials, Nanofibers, Nano Particles, Nanocellulose, Nanocomposites, Excercises".

In 2019, FT students and staff travelled abroad to the USA, Japan, Chile, Germany, Greece, Egypt, Turkey, Spain, Taiwan, Indonesia, UK, Sweden, Denmark, Belgium, Australia, Poland, India, Portugal, France, Sweden, Belgium.

There were 18 visits of foreign experts from Mauritius, Turkey, India, Thailand, Slovenia, Romania, Portugal and Tunisia. Of these, 16 experts gave lectures to FT students and staff (see Chapter 2.3.2). Out of the total, 2 Turkish staff members were trained namely:

- Esra Taskan Ozkan, Bitlis Eren University, Fine Arts/Textile and Fashion Design Department, 7 October - 11 October 2019 - Erasmus+ training KA103
- Mucella Guner, Ege University, Turkey Sep 18, 2019 - training, other form of funding.

Foreign specialists participated not only in teaching within the framework of specialized seminars, but also in active international cooperation in solving R&D projects. internships of foreign students were realized not only within Erasmus, but also within the framework of bilateral agreements and the TUL mobility fund. Students and staff came in 2019 from Turkey, Poland, Japan, Thailand, Spain, Portugal, France, Germany, Taiwan, USA, Bolivia, Tunisia, China, India, Slovenia, Romania, South Africa.

Table 17a: ***Student outgoing***

Provider of financial support	Number of months - request for support	Number of students *outgoing*	Number of months implemented
Erasmus+ KA103 No.2018-1-CZ01-KA103-022920	85	22	64
Support for international mobility of ZHR TUL to compensate for Erasmus+ KA107	-	6	14
CEEPUS CIII-SI-0217-00-1718	13	-	-
Other scholarship support, summer schools (SGS, PGS, departments, etc.)	-	12	14
Total	-	40	92

Table 17b: ***Student s incoming***

Provider of financial support	Number of months - request for support	Number of students *incoming*	Number of months implemented
Erasmus+ KA103 No.2018-1-CZ01-KA103-022920	-	60	220
Erasmus+ KA107 No.2017-1-CZ01-KA107 2017-1-CZ01-KA107-034883.	19	8	19
Erasmus+ KA107 No. 2018-1-CZ01-KA107-047257	12	1	2
CEEPUS CIII-SI-0217-00-1718	13	-	-
Freemover mobility (without specific scholarship support)	-	57	125
Total	-	126 of which 58 internships	366 of which 136 student-months on internships

Table 17c: ***Staff tr outgoing ips***

Provider of financial support	Number of days - request for support	Number of employees *outgoing*	Total number of days
Erasmus+ KA103 No.2018-1-CZ01-KA103-022920	150	28	180
Erasmus+ KA107 No.2017-1-CZ01-KA107 2017-1-CZ01-KA107-034883.	14	2	14
Erasmus+ KA107 No. 2018-1-CZ01-KA107-047257	26	-	-
Support for international mobility of ZHR TUL to KA107	106	2	32
CEEPUS CIII-SI-0217-00-1617	20	-	-
Total	-	32	226

Table 17d: ***Staff incoming***

Provider of financial support	Number of days - request for support	Number of employees *incoming*	Total number of days
Erasmus+ KA103 No.2018-1-CZ01-KA103-022920	-	8	42
Erasmus+ KA107 No.2017-1-CZ01-KA107 2017-1-CZ01-KA107-034883	28	2	24
Erasmus+ KA107 No. 2018-1-CZ01-KA107-047257	73	1	30
Support for international mobility of ZHR TUL to KA107	140	4	24
CEEPUS CIII-SI-0217-00-1617	20	-	-
Other, own	-	3	21
Total	-	18	141

6. The third role of the university / External cooperation processes

We understand the third role of the university as the intersection of the university world into the external world. The importance of the third role lies in the inseparability of science and education from the third role of the university.
It's being monitored:

- the supra-regional and national nature of cooperation
- cooperation with regional governments
- cooperation in R&D
- cooperation in education
- transfer of knowledge into practice
  - concluded contracts, implemented cooperation
  - professional training for companies
  - popularization and information events.

6.1 Supra-regional and national nature of cooperation

The Faculty os Textile Engineering of the Technical University of Liberec is the only one in the Czech Republic that provides higher education across the entire textile field. The faculty cooperates extensively with industrial enterprises and deals with a number of projects funded by various types of grants. In the long term, it creates conditions for successful cooperation with many universities and institutions oriented towards textile and material engineering.

The Faculty os Textile Engineering is a member of the Association of Textile, Clothing and Leather Industry ATOK, Czech Technological Platform for Textiles ČTPT z.s., Technical Textiles Cluster Clutex z.s. It has been cooperating with other members of these groups for a long time.

6.2 Cooperation with regional governments

FT TUL together with Clutex z.s. participated and participates in updating the documents of the regional strategy RIS 3 in the Liberec, Hradec Kralove and Pardubice regions. FT TUL participates in the implementation of the Sectoral Agreement for the textile, clothing, leather and footwear industry in the Hradec Králové, Liberec and Moravian-Silesian regions and together with other actors is working to expand activities to other regions.

In cooperation with Clutex, z.s., FT TUL tries to support and develop cooperation in the field of textile education also at the level of secondary schools and vocational schools within the framework of active participation in the meetings of working educational regional committees and within the framework of meetings of the management of secondary schools and vocational schools focused on textile and clothing issues. For several years now, under the auspices of FT TUL, Clutex z.s. and the Association for the organisation of the Clothing and Textile Competition, Liberec, a competition for young talents has been held in several categories, where thematic designs and collections prepared by pupils of primary schools and secondary schools are selected by an expert jury composed of leading experts, designers, representatives of municipalities and professional departments.

6.3 Cooperation in R&D

The strengthening of relations between the Faculty os Textile Engineering and the application sphere (enterprises in the textile and clothing industry and customers of their products) is systematized through the projects of the OP VK. Communication and cooperation between the Faculty os Textile Engineering and the textile and clothing enterprises and their customers has been improved and intensified. As a result, the faculty is better perceived by the application sphere, more joint scientific research projects and better use of R&D results in practice. The information and advisory service is focused on active meetings with potential cooperation partners from the application sphere. Topics of possible cooperation were discussed with them - joint projects, sharing of R&D capacities, consultations, common themes for bachelor and master theses, possibilities for internships and student placements, etc. (see chapter 4.1 Projects addressed).

The cooperation with the companies associated under the Clutex z.s. cluster is based on a long-standing basis, but these companies have also appreciated the more open approach of the faculty and the offer of joint research and development projects. A Contact Point was established, whose main task is to provide information about the Faculty of Science and Technology and R&D activities to interested companies, as well as to TUL staff and students and other interested parties. Thanks to its establishment and training of faculty staff, communication and cooperation between TUL FT and textile and clothing companies and their customers has been improved and intensified. As a result, the faculty is better perceived by the application sphere, more joint scientific research projects and better use of research and development results in practice. The information and advisory service is focused on active meetings with potential cooperation partners from the application sphere.

6.4 Cooperation in education

The preparation and direction of the focus of the existing disciplines and study programmes accredited within the bachelor, master and doctoral study programmes implemented at TUL is regularly discussed not only with the members of Clutex z.s., but also with ATOK and CTPT z.s.

FT TUL in cooperation with industrial partners strives to ensure that experts from practice participate in the education of students. A great benefit for students is the possibility of excursions, study placements or internships and the solution of diploma or bachelor theses, where the topics are based directly on textile companies. Cooperation with companies associated under the Clutex z.s. cluster Companies, and not only members of Clutex z.s., participate in professional meetings organised by FT TUL, including the regular annual job fair T forum, which is organised under the umbrella of IAESTE. The web interface related to the offer of internships, traineeships and jobs is constantly updated (see chapter 5.2 Linking educational activities with the third role of the faculty).

6.5 Putting knowledge into practice

A significant result is a shift in the thinking of the academic staff of the faculty, where there was an awareness of the need for mutual cooperation with the application sphere with the need to comply with the implemented standards, especially with regard to IP and its commercialization. The support for academic staff is the newly established Centre for Technology Transfer Support,

which provides, in addition to consulting, legal services and interpretation of internal standards that regulate this issue. At the same time, FT TUL has been actively involved in the solution of projects such as OP3V Pre-seed or has been involved and is involved in the solution of projects such as TAČR Gama with professional sub-projects, and FT TUL staff are actively involved in the project OP3V Effective process of technology transfer at TUL CZ.02.2.69/0.0/0.0/16_014/0000631, which aim to develop this part and actively introduce commercialization procedures into daily practice.

Technology and know-how transfer

Within the framework of cooperation with industrial partners and R&D&I institutions from the Czech Republic and abroad, contractual cooperation is established related to the solution of contract research according to the partner's requirements, provision of consultations and consultancy with regard to the partner's requirements and efforts to transfer knowledge and experience into practice, transfer of know-how and IP according to the needs and requirements of the partner, solution of specific tasks related to expertise and laboratory analyses according to the current needs of the partner. Contract research is in most cases financed from the sponsors' own funds, only to a limited extent are instruments allowing the use of subsidy support, e.g. in the form of innovation vouchers, used.
The TUL FT prefers to conclude framework cooperation agreements, which allow to cover generally all possible forms of cooperation and then other agreements that correspond to the specific form of cooperation (work contracts, service contracts, contracts for the provision of contract research, co-ownership agreements on joint IP, licensing agreements, lease agreements, agreements on joint project solutions, advertising and joint promotion agreements). FT TUL has 54 active framework cooperation/service agreements with partners, additional follow-on agreements addressing specific assignments as required by both parties, and agreements related to day-to-day operations. In 2019, there were 5 new framework agreements for cooperation or for services and consultancy, 2 work contracts, 1 contract research agreement, 3 co-sponsorship agreements and several operational agreements.
Another indicator of the success of the cooperation with the application sphere is the volume of income from complementary activities (implementation of expert consultations, processing of laboratory tests including evaluation, expert market research and innovations in selected areas) in the total amount of CZK 2 090 thousand. CZK.

Contract research

The societal contribution of the TUL FT has an impact across a wide range of fields of companies and institutions with which the cooperation is implemented. FT TUL, in accordance with its mission and vision, focuses on cooperation with textile and clothing manufacturers (e.g. SVITAP, Perla) and also on cooperation with entities that apply fibre structures (e.g. healthcare, automotive, security segments, ... Jonson Controls, Zentiva, Škoda Auto). The benefits of contract research collaboration for FT TUL are:

- expanding opportunities for collaboration in new application areas;
- growth of opportunities to connect with companies on applied research projects (which companies prefer based on the strategy of the Czech Republic within the framework of the calls of TAČR and MIT);

- thanks to the prestige gained, FT TUL is actively involved in the creation of national strategies for the textile and clothing industry (see Cooperation with associations and platforms of manufacturers ATOK, Clutex, CTPT).
- From the point of view of the mission of the TUL Faculty of Arts, a significant benefit is the expansion of cooperation with future employers (innovation of the subject curriculum of accredited programmes with regard to the needs of practice, support for student mobility within the study, diversification of professional practice and soft-skills competences of students, the possibility of excursions, study internships or work experience and the solution of diploma or bachelor theses, where the topics are based directly on companies.

The scope of contract research is limited by the capacity of the faculty. The volume of funding is increasing slightly. In accordance with the strategy of FT TUL, the capacity is divided among the activities ordered by the sponsor from the Czech Republic (FT TUL carries out an average of 5 contract research activities per year). Due to its uniqueness within the world scientific community, FT TUL has also a long-term cooperation on activities commissioned by a foreign sponsor. The volume of resources is comparable to national activities and in accordance with the strategy and capacity of FT TUL, both directions of cooperation are coordinated with respect to the staff capacity of FT TUL.

Opportunities are sought on the basis of contacts of individual FT TUL staff in the national and international professional community. The administration of the TUL FT provides consultations and advice (support) for the creation of contracts and negotiation of contractual conditions (legal department, technology transfer department, vice-dean for R&D). The activities are recorded in the annual reports of the TUL FT and also in the central records of the TUL (Human Resources Department, Accounts Department). Profits are accumulated and used to finance the non-economic activities of the TUL FT.

Additional activities

As income from non-public sources (other than grants or contract research), the TUL FT records income from the following activities (in order of frequency): expert analyses, consultations, testing, royalties and donations for R&D. The total amount of funds received is constant in order of magnitude and, in line with the TUL FT development strategy, proportionate to the size and capacity of the unit under evaluation. The most important benefit of this cooperation is the possibility of establishing new contacts with potential sponsors of contract research and subsequently planning joint projects.

Opportunities are sought on the basis of contacts of individual FT TUL staff in the national and international professional community. The administration of the TUL FT provides consultation and advice (support) for the drafting of contracts and negotiation of contractual terms and conditions (legal department, technology transfer department, vice-dean for R&D). The activities are recorded in the annual reports of the TUL FT and in the central records of the TUL (Human Resources Department, Accounts Department). Profits are accumulated and used to finance the non-economic activities of the TUL FT.

Professional training for companies

In case of interest of industrial partners, tailor-made trainings are prepared as a part of the knowledge transfer, where the emphasis is placed on the needs of the target group, the priorities

of the client and the capabilities of TUL's experts. The concept is prepared so that the interpretation can be supplemented with a practical part. The training takes place on the premises of FT TUL and the practical part is implemented in specialized laboratories and semi-processes of the faculty. Alternatively, the training is carried out at the partner's premises and the practical part is directed to the partner's own premises, taking into account the limitations associated with this. The aim is to refresh or supplement the professional terminology and selected technologies, to familiarize training participants with new developments in the field and possibilities of mutual cooperation, and to obtain feedback related to selected activities of FT TUL. In 2019, the following trainings were implemented:

- Structure and properties of fibres - Glanzstoff Bohemia s. r. o.
- Spinning, quality evaluation - Novibra Boskovice s. r. o.
- Testing of clothing textiles and comfort - Adler Czech, s.r.o.
- Textile fibres, special fibres, fibre properties - Schoeller Křešice s. r. o.

Popularization and information events

In addition to organizing and co-organizing professional conferences, seminars and workshops, FT TUL is also actively involved in selected promotional events:

- XXIII. T-FORUM 2019 - Liberec, a job exchange for students and other interested academic staff to establish new or concretize existing cooperation with exhibiting companies.
- Activities of the University Gallery N, Jablonec n.N.
- The activity of the faculty "mini-gallery" called G3P (Gallery Third Floor) building B. G3P is an exhibition project of the Department of Design. The program is to present the original work of students and graduates of the TON. The goal is to provide art students with the valuable experience of realizing their own exhibition. Another goal of the gallery is to introduce the work of the young generation to students, staff of FT and TUL and the public.

Experts participated with their lectures and presentations:

- Prof. Hes - Lecture in ITB Dresden "Principles of Clothing Comfort", at the request of ved. ITM
- Prof. Hes - Lecture at the University of Zagreb : "Principles of Clothing Comfort"
- Ing. Tomáš Kalous. Presentation of the line for alternating softening in cooperation with FS-KTS and FP.
- Ing. Markéta Klíčová: Invited lecture for Prague City Tourism
- Ing. Markéta Klíčová: printed interview in ConvaTec Radim magazine
- Ing. Markéta Klíčová: interview for CEITEC magazine (online)
- Ing. Markéta Klíčová: interview for Visegrad Female Leaders (online)
- Ing. Markéta Klíčová and Ing. Jakub Erben: admission to Harvard (Wyss Institute for Biologically Inspired Engineering at Harvard University)
- Ing. Jakub Erben.
- Ing. Jakub Erben.

7. Quality assurance and evaluation of implemented activities

The Faculty strives to evaluate all its activities and uses established procedures and methodologies partially implemented in the internal regulations of TUL. Feedback is evaluated at all levels of management. Internal audit (specific research, management level) was partly used to

ensure the quality of faculty activities. Issues related to the use of funds, compliance with management rules and related problems were discussed at meetings of the management, departmental representatives and the College of the Dean . The Faculty Senate was actively involved in activities related to the evaluation of the level of relations between the faculty units, quality control of the website, and compliance with collegial relations between teachers or students.

In 2019, the evaluation of the quality of activities was supported by the involvement of TUL FT management staff in the evaluation of Methodology 17+, Modules 3-5. ***The self-evaluation report that assesses the FT TUL social for the years 2014 - 2018*** is ***in special*** report.

7.1 Management and College meetings

The closer management of the TUL FT (dean, vice-deans, secretary) usually met once a week, more often if necessary. The Dean's College usually met once every 14 days, more frequently as needed. The basic legal norms of TUL were demonstrably conveyed at the meetings. Minutes were taken of all meetings of the colleges. The Dean convened operational meetings directly with stakeholders when necessary and to address urgent tasks.

7.2 Meeting of the Faculty Scientific Council

The 13th meeting of the VR FT TUL was held on 27 May 2019.
Agenda:

- FT Annual Activity Report 2018
- information on accredited study programmes
- Changes in the guarantors of study programmes at TUL
- changes OR FT TUL
- initiation of the procedure for the appointment as professor of doc. Rajesh Mishra, Ph.D., B. Tech.
- commencement of habilitation proceedings Ing. Petr Henyš, Ph.D.
- information on the per rollam result
- Various

The 14th meeting of the VR FT TUL was held on 2 December 2019
Agenda:

- Habilitation proceedings Ing. Petr Henyš Ph.D.
- Opening of the habilitation proceedings Ing. Brigita Kolčavová Sirková, Ph.D.
- Change of BSP guarantor Textile technologies, materials and nanomaterials
- Miscellaneous

The materials for discussion, including resolutions, are published on the website of FT TUL.

7.3 Session of the Academic Senate

During the year 2019, there were 6 meetings of the AS FT TUL and 2 electronic votes. The topics and resolutions discussed by the Senate result from the activities of the Faculty. The AS FT TUL approved the Annual Report on the Management and Activities of FT TUL for 2018, the

distribution of the faculty's financial resources for 2019 submitted by the Dean, including Appendix No. 1. It also approved the conditions of the admission procedure at FT TUL for the academic year 2020/2021 and the proposed change of the FT TUL Scientific Council member. In December 2019, the AS FT TUL approved the Implementation Plan of the Strategic Plan of Educational and Creative Activities of the Faculty Textile of the Technical University of Liberec for 2020. The AS FT TUL discussed at the meetings the documents submitted by the Vice-Deans and the Dean: The Dean's Directive - organization of studies in the doctoral study programme Textile Engineering and Industrial Engineering, planned changes of the guarantors of the fields of study to be completed. At the Senate meetings, the requirements of the FT departments regarding the purchase of new equipment and technical matters of the departments were discussed and debated. As of January 2019, the composition of the TUL AS for FT has been changed, namely in the chamber of academic staff. The seat vacated by the termination of membership has been filled by another candidate, in order of election result.

7.4 Branch Council

The Doctoral Study Programme Board for Textile Engineering carried out basic conceptual, control and evaluation activities for the doctoral study programme, usually using the per rollam voting procedure. The Branch Council met on 9 April 2019 to discuss the status of the PhD programme, the overview of supervisors and experts with the right to examine at the SDZ and dissertation defences, the conditions and organisation of the PhD programme, the admission procedure, the proposal of new supervisors and consultants and the overall concept of the prepared accreditation of the PhD programmes.

No students applied in the first round (announced by 15 February 2019) and the second round (announced by 24 June 2019) of the admission procedure to the doctoral study programme Industrial Engineering. For this reason, the regular meeting of the OR FT TUL of the doctoral study programme Industrial Engineering was not convened at the end of 2019, and the disciplinary board is informed about the current status by per rollam.

8. Conclusion

On the basis of the above information, it can be concluded that in 2019, the Faculty of Arts of TUL worked in accordance with the Long-term Plan of Educational and Scientific, Research, Development and Innovation, Artistic and Other Creative Activities of the Faculty of Arts of TUL for the years 2016-2020 and its update.

Educational activities

As of 31 December 2019, there were 725 students (500 BSP, 164 NMSP, 61 DSP) studying at TUL. 354 applicants entered the first year. In 2019 (from 1 January 2019 to 31 December 2019), a total of 145 students graduated from accredited study programmes. Eighteen state final doctoral examinations (SDZ) were held in 2019. Fourteen students successfully passed the SDZ. In the same year, 8 students successfully defended their dissertation and received their Ph.D. degree. Teaching activities in 2019 were supported from other sources through the institutional support projects of the Ministry of Education and Science. FT is actively involved in the university-wide project OP VVV RoLiz 4.0 - Development of human resources of TUL for increasing the relevance, quality and access to education in the conditions of Industry 4.0. In 2019, the FT **received**

accreditation for a maximum period of ten years for the Bachelor's degree programmes in Design, Clothing and Technical Apparel Production, Textile Marketing and Textile Technologies, Materials and Nanomaterials; for the follow-up Master's degree programmes in Textile Engineering and Industrial Engineering and for the Doctoral degree programme in Textile Engineering. All these programmes are accredited for teaching in English. First year students have been enrolled in the newly accredited study programmes from the academic year 2019/2020.

In 2019, FT TUL implemented a number of other *educational activities for students outside the implementation of accredited study programmes*, especially professional seminars for FT TUL students in cooperation with the corporate sphere and TUL graduates, excursions to companies, lecture internships of experts from abroad and Czech universities. In 2019, a total of 34 students entered the *SVOČ competition* in the sections (Textiles, Mechanical Engineering, Mechatronics, Economics). Within the *student grant competition*, 15 projects were solved at FT TUL. In the field of artistic creative activity, students and graduates under the guidance of teachers of the Department of Design of FT TUL successfully present themselves at *national and international exhibitions*. Students of BSP Textile and Fashion Design participated in 11 exhibitions.
There were 18 visits of foreign experts from Mauritius, Turkey, India, Thailand, Slovenia, Romania, Portugal and Tunisia. Of these, 16 experts gave lectures to students and staff of the TUL FT. Of the total, 2 Turkish staff were trained during the stay.

Creative activities

The scientific and research work is based mainly on those directions in which the faculty has traditionally had a high level and quality staff background.

In 2019, the projects of the following providers were addressed: the MIT 10, TAČR 6, MZ 1, MŠMT 5. (excluding SGS), 12 project applications were prepared. FT proceeded to detailed evaluation of results in international rankings. Materials Science - Textiles is one of the WoS research sub-areas in which the Faculty os Textile Engineering of the Technical University of Liberec is active. In 2019, 63 documents are recorded in this sub-area for TUL (of which 60 documents are from authors or co-authors of FT TUL), which **ranks FT TUL 10th in the number of documents compared to other (approx. 1810) organizations in the world**.

For the period 2019, 25 artistic outputs in two segments have been submitted for certification: design (sub-segments: Fashion, Textile, Jewellery and Glass, Porcelain, Ceramics) and fine arts (sub-segment: Fine Arts).Within the framework of the activities of Gallery N, the Department of Design of the Faculty of Arts of the University of Ljubljana has organised 8 exhibitions in the field of design, applied arts, painting, photography and graphics. KDE staff participated in 19 exhibitions.

Academics, staff

In 2019, 115 employees worked at the TUL Faculty of Science, 74 of whom were academic staff, including staff for science and research. There were 8 professors, 11 associate professors, 30 assistant professors, 4 assistant professors and 18 lecturers employed at TUL. Six academic staff with foreign citizenship worked at FT TUL in 2019 (number of natural persons).
In 2019, he was appointed professor in the field of Textile Technology and Materials Engineering by Assoc. Ing. Michal Vik, Ph.D.
In 2019, 6 competitions were held for academic staff positions at the TUL. Support for personal development of staff is directed to support publication activities and mobility.

Internationalisation

The Faculty os Textile Engineering is a full member of the International Association of Textile Faculties "AUTEX". A representative of the Faculty os Textile Engineering is a member of the committee for the revision of the accreditation of the joint study programme of the association Autex called E-Team NMSP "Textile Engineering" accredited in Ghent, Belgium. The faculty has a long-term cooperation with most of the foreign universities dealing with textile issues from all over the world. International contacts are deepened by joint projects, preparation and organization of mutual meetings and seminars, preparation of joint publications, exchange of students and teachers. Long-term cooperation exists with practically all major textile universities in the world.

All study programmes of FT TUL are accredited by the European Federation of Engineering National Associations "FEANI" (graduates can obtain the EURING degree after fulfilling other conditions (engineering practice). The professional organization "The Textile Institute Manchester" accredits the study programmes BSP "Textile", NMSP "Textile Engineering" and DSP "Textile Engineering" until 2021.

New cooperation agreements (MOUs) or Erasmus+ Inter-institutional Agreements were signed with 3 institutions and cooperation with existing partners was ongoing. FT TUL hosted one international conference in 2019 and co-organised others. In the framework of student mobilities, 40 departures for 92 person-months and 126 arrivals for 366 person-months were realized. Academic and R&D staff made 32 departures for 226 person-days and 18 arrivals for 141 person-days supported by faculty or university mobility projects or their own resources. Another 30 employees went on a foreign business trip within the Hyhi CZ.02.1.01/0.0/0.0/16_019/0000843 project and 3 employees arrived.

The third role of the university

The Faculty os Textile Engineering of the Technical University of Liberec is the only one in the Czech Republic that provides higher education across the entire textile field. The Faculty os Textile Engineering is a member of the Association of Textile, Clothing and Leather Industry ATOK, Czech Textile Technology Platform CTPT, Technical Textiles Cluster Clutex o.s. It has been cooperating with other members of these groups for a long time.

FT TUL has 54 active framework contracts for cooperation with partners, other follow-up contracts addressing specific assignments according to the requirements of both parties and contracts related to day-to-day operations. In 2019, 5 framework agreements for cooperation or for the provision of services and consultancy, 2 work contracts, 1 contract research agreement, 3 co-investigator agreements and several operational agreements were newly concluded. In 2019, 4 professional trainings were held according to companies' requirements and specifications and a number of popularization and information events.

In Liberec on XX. XX. 2020 Ing. Jana Drašarová, Ph.D., Dean

Annex 1

SELF-EVALUATION REPORT

Study Programmes

Evaluation of study programmes - reports of study programme guarantors

In 2019**, all submitted FT study programmes received NAU accreditation for a maximum period of ten years.** Therefore, for the 2019 annual report, evaluations in the newly accredited degree programmes can only be made for the part of the first semester of teaching that is still in progress at the end of 2019. *A system is in place for further evaluation - see. Table 1, which lists the study programmes, individual guarantors and the number of students who have started their studies.*

Table: Newly accredited study programmes

Stud code. program	Name of study programme	Guarantor	Number of students in 1 semester (enrolled)	
			P	K
B0212A270001	**Design**	Vik Michal, prof. Ing. Ph.D.	50	-
B0212A270002	**Design**	Vik Michal, prof. Ing. Ph.D.	0	-
B0414A270001	**Textile marketing**	Bajzík Vladimír, doc. Ing. Ph.D.	83	32
B0414A270002	**Textile Marketing**	Bajzík Vladimír, doc. Ing. Ph.D.	0	0
B0723A270001	**Textile technology materials and nanomaterials**	Pokorný Pavel, doc. Ing. Ph.D.	22	13
B0723A270002	**Textile Technologies, Materials and Nanomaterials**	Pokorný Pavel, doc. Ing. Ph.D.	0	0
B0723A270003	**Manufacture of clothing and technical clothing**	Kůs Zdeněk, prof. Dr. Ing.	17	15
B0723A270004	**Production of Clothing and Technical Products**	Kůs Zdeněk, prof. Dr. Ing.	0	0
N0723A270001	**Textile Engineering**	Wiener Jakub, prof. Ing. Ph.D.	40	14
N0723A270002	**Textile Engineering**	Wiener Jakub, prof. Ing. Ph.D.	8	-
N0723A270003	**Industrial Engineering**	Tunák Maroš, doc. Ing. Ph.D.	18	13
N0723A270004	**Industrial Engineering**	Tunák Maroš, doc. Ing. Ph.D.	0	0
P0723D270001	**Industrial Engineering**	Tunák Maroš, doc. Ing. Ph.D	0	0
P0723D270002	**Textile Engineering**	Militký Jiří, prof. Ing. CSc.	3	0
P0723D270003	**Textile Engineering**	Militký Jiří, prof. Ing. CSc.	6	0