

**FACULTY
OF CHEMICAL TECHNOLOGY
UNIVERSITY OF PARDUBICE
ANNUAL ACTIVITY REPORT
2023**

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INTRODUCTION

Dear colleagues, Dear supporters of the Faculty of Chemical Technology at the University of Pardubice

The presented annual report on the activities of the Faculty of Chemical Technology for the year 2023 summarises the most significant events in the life of the faculty and evaluates our achievements on the path to achieving set goals. Thanks to the diligent work of both the staff and students, we can take pride in a number of significant and smaller successes in the areas of education, scientific activity, and our third role.

In 2023, we offered 65 bachelor's, master's, and doctoral study programmes to prospective students, including 14 programmes in English. Additionally, three new bachelor's programmes were prepared for accreditation: a professionally oriented programme in Modern Printing and Visualisation Technologies, and academically oriented programmes in Chemistry for Science and Management of Sustainable Businesses. A total of 164 bachelor's, 116 master's, and 17 doctoral students successfully completed their studies at the faculty in the given year. Many of them received various awards for the scientific or practical contributions of their final theses.

We engaged in several research projects, with the most significant achievement being Professor Michal Holčápek's receipt of a highly prestigious grant from the European Research Council (ERC). The Faculty of Chemical Technology also played a crucial role in establishing the first spin-off company of the University of Pardubice, named Lipidica, which aims to implement one of the greatest discoveries—the method developed by Professor Holčápek's team that can detect pancreatic cancer in its early stages. This company also received the Neuron Prize for extraordinary integration of science and business in 2023. Professor Holčápek was awarded the Rudolf Lukeš Prize for his significant contributions in the field of mass spectrometry, which is presented by the Czech Chemical Society in collaboration with the Experientia Foundation. Additionally, it is undoubtedly a success that in the prestigious national competition for scientists, Czech Head, Dr. Barbora Kamenická won the Doctorandus Prize for technical sciences.

The faculty is also responsibly fulfilling its third role by striving to bring the results of its experts' scientific work closer to the public, thus contributing to the popularisation of science. For example, we organised the finals of the competition titled "Search for the Best Young Chemist in the Czech Republic" under the auspices of the Czech Chemical Industry Association and the Ministry of Education, Youth and Sports of the Czech Republic, aimed at eighth and ninth-grade students. In cooperation with the Alumni Scientiae Bohemicae association, and with financial support from the Ministry of Education, Youth and Sports, we held the eighth edition of the high school competition called "Chemistry Race" ("Chemiklání").

In 2023, the faculty was honoured by the presence of several foreign visitors. The most significant of these was the visit of the Nobel Prize laureate in Chemistry, French chemist Jean-Marie Lehn, who gave a lecture titled "Steps towards Complex Matter: Chemistry!"

However, there are many more successes to report. Naturally, achieving these successes has required and will continue to require us to deal with changes and challenges that affect us all. It has been, and will continue to be, necessary to focus attention on managing the effectiveness of our activities. Growing demands for the standardisation of higher education necessitate the adoption of new rules, as was the case this year with the standards for doctoral study supervisors. However, we believe that we can view these and other challenges as opportunities and that we can overcome them together. Only through our combined efforts can we ensure that our faculty not only retains but also strengthens its good reputation both in the Czech Republic and abroad. Therefore, we would like to thank all staff and students for everything they have done for the Faculty of Chemical Technology at the University of Pardubice.

Management of the FChT



UNIVERSITAS
PARDUBICENSIS

FACULTAS

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1 BASIC INFORMATION ABOUT THE FACULTY

1.1 Name, abbreviation and registered office

Faculty of Chemical Technology, abbreviated to “FChT”

Registered office: Studentská 573, 532 10 Pardubice

1.2 Mission, vision and strategic objectives

The mission, vision and strategic objectives of the faculty as an integral part of the University of Pardubice are based on the university-wide concept and strategic objectives. Implementation of the Strategic Plan of the Faculty of Chemical Technology at the University of Pardubice in 2023 was based on the Strategic Plan of the University of Pardubice for the period from 2021 and its concretisation for 2023. It built on the following priority objectives and strategic priorities which were defined by the Strategic Plan of the Faculty of Chemical Technology at the University of Pardubice for the period from 2021 and its concretisation for 2023:

Priority objective 1: Student competencies for the 21st century

Strategic priorities:

- S1.1 Implementation of study programmes on a level comparable to those abroad.
- S1.2 Development of the quality of study programmes with an emphasis on use of the acquired knowledge and skills for future employment.
- S1.3 Use of new technologies and modern aids for provision of education.
- S1.4 Strengthening of student global competences necessary for their future employment.
- S1.5 Internationalisation of bachelor’s and master’s degree programmes.
- S1.6 Increasing the quality and deepening the internationalisation of doctoral studies.
- S1.7 Strengthening quality assessment of study programmes and strategic management of educational activities.
- S1.8 Expanding the range of lifelong learning courses.
- S1.9 Interfaculty and interdisciplinary cooperation within the framework of educational activities.
- S1.10 Availability of information resources.
- S1.11 Systematic care for students and systematic work with graduates.

Priority objective 2: High-quality and respected scientific research and creative activities

Strategic priorities:

- S2.1 Application of the faculty system for assessment of the quality of R&D&I.
- S2.2 Development of high-quality or strategic disciplines in which the faculty implements doctoral degree programmes.
- S2.3 Reinforcement of excellence in selected subdisciplines of FORD.
- S2.4 Strategic management of R&D&I and orientation of the faculty towards fields with international level.
- S2.5 Development of modern and internationally comparable infrastructure.
- S2.6 Linking the scientific-research and creative activities of the faculty with their practical application with emphasis on commercialisation of the obtained results.
- S2.7 Permanent emphasis on student involvement in scientific research activities.

S2.8 Promotion of collaboration between faculty departments. Promotion of inter-faculty cooperation.

S2.9 Reinforcement of the principles of open science.

Priority objective 3: Human resources

Strategic priorities:

S3.1 Reinforcement of the system of individual and career development of employees, including motivation supporting and developing their work activities and performance.

S3.2 Implementation of a regular comprehensive appraisal system for staff in line with their performance and achievements.

S3.3 Support for professional development and training of employees, acquisition of knowledge, skills and key competences.

S3.4 Reinforcement of strategic human resources management.

Priority objective 4: International dimension and internationalisation

Strategic priorities:

S4.1 Development of strategic partnerships and international cooperation in education and R&D&I.

S4.2 Support for student and staff mobility.

S4.3 Implementation of attractive study programmes and teaching of subjects in English.

S4.4 Support for strategic management of internationalisation.

S4.5 Implementation of the results of quality assessment of internationalisation.

Priority objective 5: Tradition and development of the faculty

Strategic priorities:

S5.1 Preservation of traditions and development of the faculty with a society-wide impact.

S5.2 Implementation of a marketing strategy with the aim of developing the identity and strengthening the reputation of the faculty.

S5.3 Reinforcement of mutual cooperation with an emphasis on synergy between faculty departments.

S5.4 Reinforcement of the “third role” of the faculty within the Czech Republic.

S5.5 Infrastructure fit for the 21st century.

1.3 Faculty management and its organisational structure

Faculty management until 30 November 2023

Dean: prof. Ing. Petr Němec, Ph.D.

Vice-Deans: prof. Ing. Petr Kalenda, CSc.
(until 30 September 2023)

prof. Ing. Petr Mošner, Dr.

doc. Ing. Alena Komersová, Ph.D.

prof. Ing. Liběna Tetřevová, Ph.D.

Secretary: Ing. Martin Šprync

Vice-Dean for Education, Statutory Representative of the Dean

Vice-Dean for Research and Development

Vice-Dean for External Relations

Vice-Dean for Internal Affairs

Faculty management from 1 December 2023

Dean: prof. Ing. Petr Němec, Ph.D.

Vice-Deans: prof. Ing. Petr Mošner, Dr.

Vice-Dean for Education, Statutory Representative
of the Dean (from 25 October 2023)

doc. Ing. Petr Česla, Ph.D.

Vice-Dean for Research and Creative Activities

doc. Ing. Alena Komersová, Ph.D.

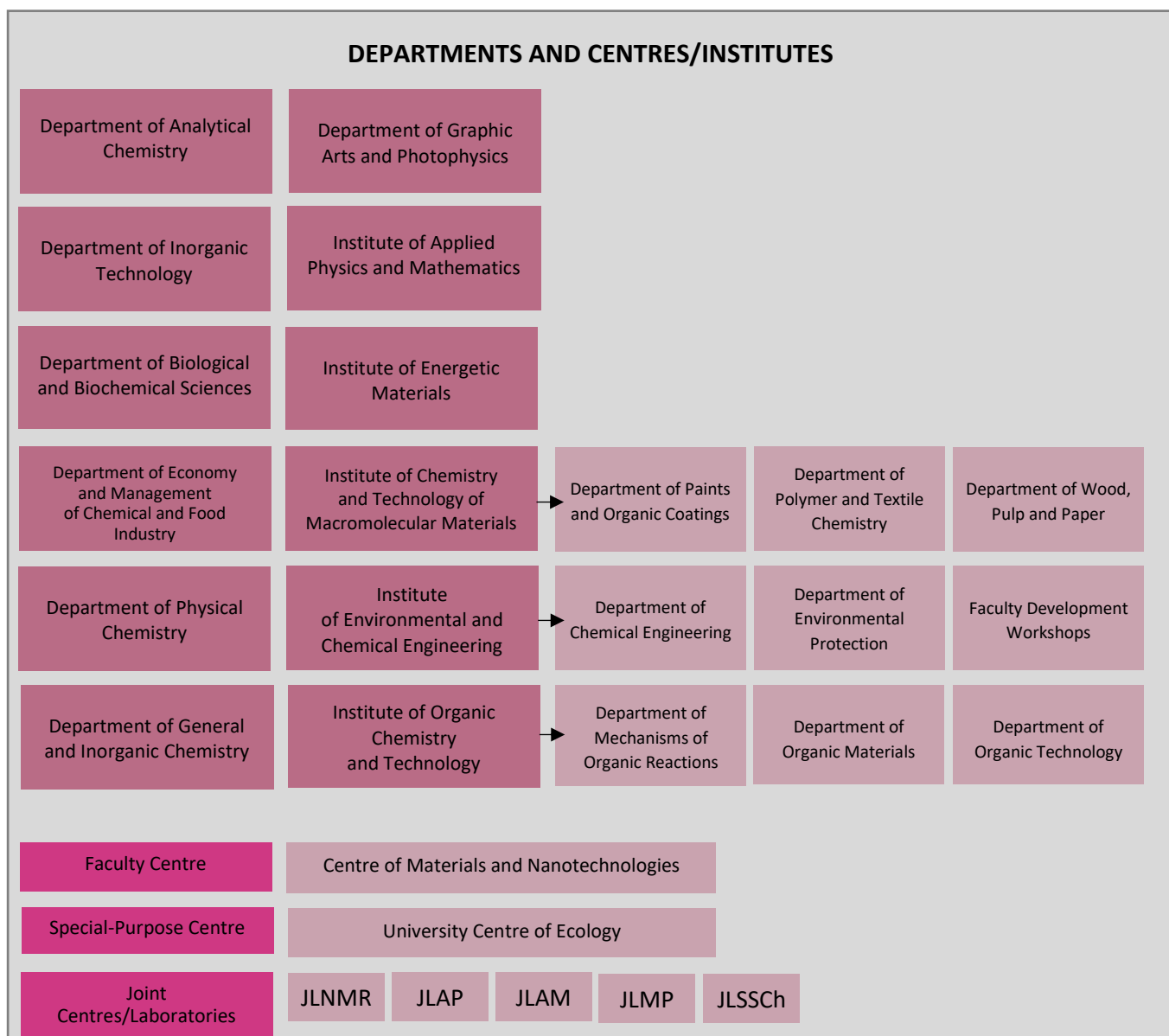
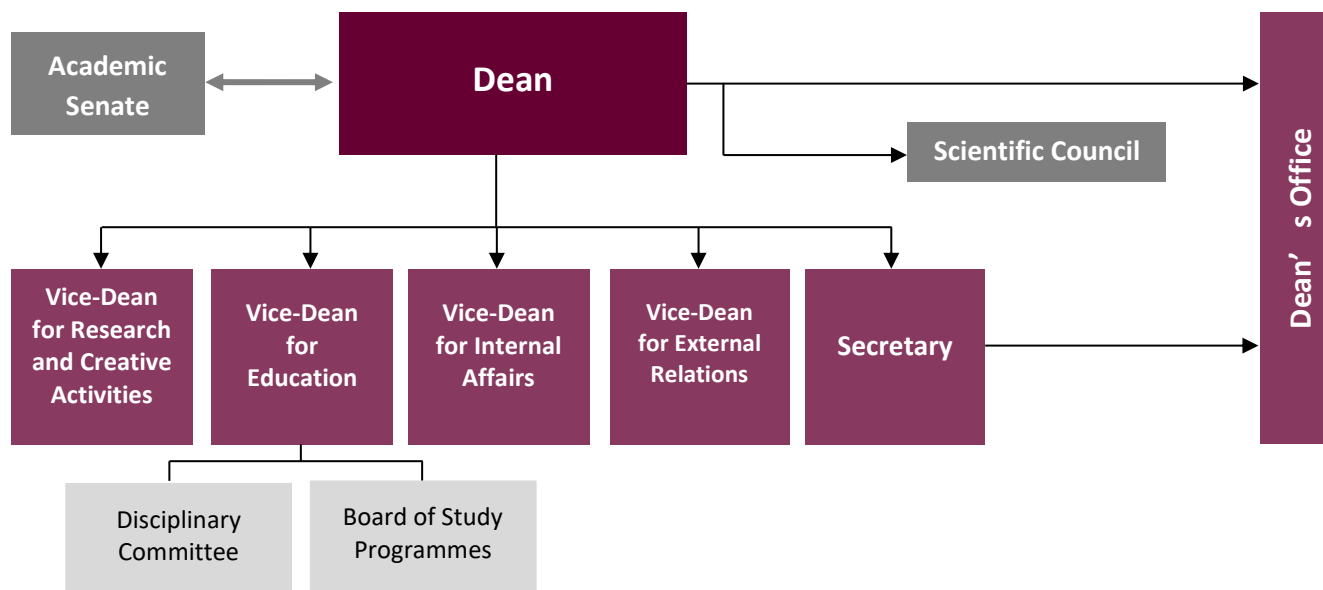
Vice-Dean for External Relations

prof. Ing. Liběna Tetřevová, Ph.D.

Vice-Dean for Internal Affairs

Secretary: Ing. Martin Šprync

Organisational Chart of the Faculty



Legend:

JLAP Joint Laboratory of Analysis and Evaluation of Polymers
JLSSCh Joint Laboratory of Solid State Chemistry
JLMP Joint Laboratory of Membrane Processes
JLNMR Joint Laboratory of NMR Spectroscopy
JLAM Joint Laboratory of Applied Medical Science

1.4 Academic Senate

Presidium:

doc. Ing. Martin Adam, Ph.D., Chair
doc. Ing. Pavel Čičmanec, Ph.D.
Ing. Marie Nevyhoštěná

Members:

doc. Ing. Martin Adam, Ph.D.
Ing. Jaroslav Barták, Ph.D.
doc. Ing. Pavel Čičmanec, Ph.D.
Ing. Aleš Eisner, Ph.D.
Bc. Jana Hrušková
prof. Ing. Roman Jambor, Ph.D.
Ing. Petr Knotek, Ph.D.
Ing. Petr Leinweber
Ing. Marie Nevyhoštěná
Ing. Patrik Pařík, Ph.D.
Bc. Martin Šanda
Bc. Josef Velebný
doc. Ing. David Veselý, Ph.D.
prof. Ing. Jaromír Vinklárek, Dr.
prof. Ing. Tomáš Weidlich, Ph.D.

1.5 Scientific Council

Chair: prof. Ing. Petr Němec, Ph.D., Dean of the Faculty of Chemical Technology
Internal members: prof. Ing. Libor Čapek, Ph.D.
prof. Ing. Čestmír Drašar, Dr.
prof. Ing. Michal Holčapek, Ph.D.
prof. Ing. Aleš Imramovský, Ph.D.
prof. Ing. Roman Jambor, Ph.D.
prof. Ing. Petr Kalenda, CSc.
doc. Ing. Alena Komersová, Ph.D.
prof. Ing. Miroslav Ludwig, CSc.
prof. Ing. Jiří Málek, DrSc.
prof. Ing. Petr Mošner, Dr.
doc. Ing. Jiří Pachman, Ph.D.
doc. RNDr. Tomáš Roušar, Ph.D.
prof. Ing. Aleš Růžička, Ph.D.
prof. Ing. Miloš Sedlák, DrSc.

prof. Ing. Petra Šulcová, Ph.D.
prof. Ing. Liběna Tetřevová, Ph.D.
prof. Ing. Ladislav Tichý, DrSc.
prof. Ing. Karel Ventura, CSc.
prof. Ing. Jaromír Vinklárěk, Dr.
prof. Ing. Tomáš Weidlich, Ph.D.

External members:

prof. RNDr. Jiří Berek, CSc.	Faculty of Science, CU Praha
prof. Ing. Roman Čermák, Ph.D.	Dean of the Faculty of Technology, TBU in Zlín
Mgr. Karolína Gondková	Director of Higher Education, MEYS CR, Praha
prof. RNDr. Libor Grubhoffer, CSc., Hon. D.Sc., Dr.h.c.	Biology Centre CAS, p.r.i.
prof. Ing. Jiří Hanika, DrSc., Dr.h.c.	Institute of Chemical Process Fundamentals of CAS, p.r.i., Prague
prof. Ing. Kamila Kočí, Ph.D.	Institute of Environmental Technology, TUO Ostrava
prof. Ing. Zdeňka Kolská, Ph.D.	Faculty of Science, JEPU Ústí nad Labem
Ing. Josef Liška	CEO of Synthesia, a.s., Pardubice
Ing. David Pohl, Ph.D.	Chairman of the Board of Synthos, a.s., Kralupy nad Vltavou
prof. Ing. Václav Švorčík, DrSc.	Faculty of Chemical Technology, UCHT in Prague
Ing. Daniel Tamchyna, MBA	CEO of Spolchemie, Association for Chemical and Metallurgical Production,, a.s., Ústí nad Labem
prof. Ing. Martin Weiter, Ph.D.	Vice-Rector, BUT in Brno

1.6 Disciplinary Committee

Chair: prof. Ing. Petr Kalenda, CSc.
Members: Anna Gondková, student of a bachelor's degree programme
Ing. Michal Kašpar, student of a doctoral degree programme
Ing. Petr Resl, student of a doctoral degree programme
doc. Ing. David Veselý, Ph.D., Head of IChTMM
prof. Ing. Miloš Sedlák, DrSc., Head of IOChT

1.7 Representation in the Higher Education Council

The faculty is represented in the Higher Education Council by prof. Ing. Petra Šulcová, Ph.D. (member of the Presidium) and doc. Ing. Marek Bouška, Ph.D. (member of the Assembly).

1.8 Changes in the field of internal regulations

The internal regulations of the faculty which govern the activities of the faculty are in particular constituted by directives, orders, measures and notices. The following internal regulations were issued in 2023.

Name of internal regulation	Ref. No.
STATUTE of the Faculty of Chemical Technology	
Directive No. 1/2023: Recognition of FChT Employees on Milestone Birthdays and Retirement	sfcht/429/22
Directive No. 2/2023: Rules, Procedures, and Conditions for Course Enrollment at the Faculty of Chemical Technology, University of Pardubice	sfcht/187/23
Directive No. 3/2023: Rules for the Change between Study Programmes at the FChT	sfcht/186/23
Directive No. 4/2023: Admission Procedure for the Academic Year 2024/2025	sfcht/333/23
Directive No. 5/2023: Recognition of Parenthood Period	sfcht/338/23
Directive No. 6/2023: Schedule of the Final State Examinations for the follow-up master's study programmes in the Academic year 2023/2024	sfcht/364/23
Directive No. 7/2023: Schedule of the Final State Examinations for Bachelor's Programmes in the Academic Year 2023/2024	sfcht/365/23
Directive No. 8/2023: Evaluation of FChT Employees in Group 1 (Pay Grades 1 and 2), Group 2, and Group 3	sfcht/388/23
Directive No. 9/2023: Doctoral Degree Supervisor Standard	sfcht/402/23
Amendment No. 2 to Directive No. 3/2017: Principles for Organising PhDs studies by Specialised Councils and for Defence of Dissertation Theses at the Faculty of Chemical Technology of the University of Pardubice	sfcht/148/23
Amendment No. 3 to Directive No. 3/2017: Principles for Organising PhDs studies by Specialised Councils and for Defence of Dissertation Theses at the Faculty of Chemical Technology of the University of Pardubice	sfcht/405/23
Amendment No. 1 to Directive No. 4/2017: Course Recognition at the Faculty of Chemical Technology, University of Pardubice	sfcht/342/23
Amendment No. 1 to Directive No. 1/2018: Rules for the Preparation of Dissertation Theses at the Faculty of Chemical Technology, University of Pardubice	sfcht/404/23
Amendment No. 2 to Directive No. 5/2020: Criteria for Habilitation and Professorial Appointments at the Faculty of Chemical Technology, University of Pardubice	sfcht/149/23
Amendment No. 1 to Directive No. 4/2022: Schedule of State Final Examinations for Bachelor's Programs in the Academic Year 2022/2023	sfcht/16/23
Amendment No. 1 to Directive No. 5/2022: Admission Procedure for the Academic Year 2023/2024	sfcht/87/23
Amendment No. 2 to Directive No. 5/2022: Admission Procedure for the Academic Year 2023/2024	sfcht/105/23
Amendment No. 3 to Directive No. 5/2022: Admission Procedure for the Academic Year 2023/2024	sfcht/141/23
Amendment No. 4 to Directive No. 5/2022: Admission Procedure for the Academic Year 2023/2024	sfcht/222/23
Dean's Measure No. 1/2023: Support for Publishing in Open Access Journals at FChT	sfcht/81/23
Dean's Measure No. 2/2023: Rules for Awarding Medals and Awards of the Faculty of Chemical Technology of the University of Pardubice	sfcht/90/23
Announcement No. 1/2023: Doctoral Conference in English	sfcht/122/23

Announcement No. 2/2023: Conditions and Amount of the Dean's Student Prize at the Faculty of Chemical Technology, University of Pardubice in 2023	sfcht/132/23
Announcement No. 3/2023: Graduation 2023	sfcht/154/23
Announcement No. 4/2023: Holidays for Students of Doctoral Study Programmes	sfcht/157/23
Announcement No. 5/2023: Additional Admission to the First Year of Bachelor's Study for the Academic Year 2023/24	sfcht/164/23
Announcement No. 6/2023: Additional Admission to the First Year of Doctoral Study in the Academic Year 2023/2024	sfcht/165/23
Announcement No. 7/2023: Establishment of Sub-Inventory Committees	sfcht/167/23
Announcement No. 8/2023: Commencement 2023	sfcht/183/23
Announcement No. 9/2023: Cancellation of Classes for FChT Students at UPCE	sfcht/215/23
Announcement No. 10/2023: Matriculation of First-Year Students at FChT	sfcht/340/23
Announcement No. 11/2023: Cancellation of Classes for First-Year Bachelor's Students	sfcht/341/23
Announcement No. 12/2023: Conference of Doctoral Students in English	sfcht/387/23

2 STUDY PROGRAMMES, ORGANISATION OF STUDIES AND EDUCATIONAL ACTIVITIES

2.1 Accredited study programmes

The FChT had a total of 65 accredited study programmes in 2023. These included 14 bachelor's, 20 master's and 31 doctoral study programmes. From the above-mentioned study programmes, 2 master's and 12 doctoral study programmes were offered in English.

In the academic years 2022/2023 and 2023/2024, the FChT had the following accredited study programmes.

Originally accredited study programmes						
Code	Name of study programme	Name of field of study	Standard length of study (years)			CCFE code
			Bc.	NMgr.	Ph.D.	
B2802	Chemistry and Technical Chemistry	Chemistry and Technical Chemistry	3			2802R011
B2901	Chemistry and Technology of Foodstuffs	Evaluation and Analysis of Foodstuffs	3			2901R003
B3912	Special Chemical and Biological Fields	Laboratory Assistant	3			5345R020
N2808	Chemistry and Technology of Materials	Organic Coatings and Paints		2		2808T022
		Technology of Polymer Manufacturing and Processing		2		2801T009
P1418	Inorganic Chemistry	Inorganic Chemistry			4	1401V002
P1419	Analytical Chemistry	Analytical Chemistry			4	1403V001
P1420	Physical Chemistry	Physical Chemistry			4	1404V001
P1421	Organic Chemistry	Organic Chemistry			4	1402V001
P2832	Chemistry and Chemical Technology	Inorganic Technology			4	2801V001
P2833	Chemistry and Technology of Materials	Surface Engineering			4	2808V027
		Chemistry and Technology of Inorganic Materials			4	2808V003
		Engineering of Energetic Materials			4	2808V035
P2837	Chemical and Process Engineering	Chemical Engineering			4	2807V004
		Environmental Engineering			4	3904V005

Newly accredited study programmes					
Code	Name of study programme	Standard length of study (years)			
		Bc.	Mgr.	Ph.D.	
B0488A050003	Economics and Management of Chemical Industry Enterprises	3			
B0512A130006	Analysis of Biological Materials	3			
B0531A130012	Pharmacochemistry and Medicinal Materials	3			
B0531A130013	Surface Protection of Building and Construction Materials	3			
B0531A130014	Graphic Arts and Printing Technology	3			
B0531A130016	Inorganic and Bioinorganic Materials	3			
B0531A130017	Polymer Materials and Composites	3			
B0531A130024	Evaluation and Analysis of Foodstuffs	3			
B0531A130025	Chemistry	3			
B0588A130001	Chemistry and Technology of Environmental Protection	3			
B0914P360019	Laboratory Diagnostics in Medicine	3			
N0413A050010	Economics and Management of Chemical Industry Enterprises		2		
N0512A130006	Analysis of Biological Materials		2		

N0531A130013	Graphic Arts and Printing Technology		2	
N0531A130027	Engineering of Energetic Materials		2	
N0531A130028	Analytical Chemistry		2	
N0531A130029	Inorganic and Bioinorganic Chemistry		2	
N0531A130030	Evaluation and Analysis of Foodstuffs		2	
N0531A130031	Material Engineering		2	
N0531A130032	Materials Chemistry		2	
N0531A130035	Physical Chemistry		2	
N0531A130047	Organic Chemistry and Technology	Organic Chemistry	2	
		Technology of Organic Specialities	2	
N0531A130052	Chemistry and Technology of Paper and Pulp		2	
N0531A130053	Organic Coatings and Paints		2	
N0531A130054	Technology of Polymer Manufacturing and Processing		2	
N0711A130008	Engineering of Energetic Materials		2	
N0711A130013	Chemical and Process Engineering	Chemical Engineering	2	
		Environmental Protection	2	
N0711A130014	Sustainable Development in Chemistry and Technology		2	
N0711A130015	Inorganic Technology		2	
N0914P360001	Bioanalytical Laboratory Diagnostics in Medicine		2	
P0413D050023	Economics and Management of Enterprises with Process Manufacturing Operations			4
P0512D130013	Biochemistry			4
P0531D130009	Analytical Chemistry			4
P0531D130011	Inorganic Chemistry			4
P0531D130013	Chemistry and Technology of Inorganic Materials			4
P0531D130015	Organic Chemistry			4
P0531D130052	Physical Chemistry			4
P0531D130053	Engineering of Energetic Materials			4
P0531S130070	Surface Engineering			4
P0711D130001	Organic Technology			4
P0711D130025	Inorganic Technology			4
P0711D130027	Chemical and Process Engineering	Chemical Engineering		4
		Environmental Engineering		4
P0413D050024	Economics and Management of Businesses with Process Manufacturing Operations			4
P0512D130014	Biochemistry			4
P0531D130010	Analytical Chemistry			4
P0531D130012	Inorganic Chemistry			4
P0531D130014	Chemistry and Technology of Inorganic Materials			4
P0531D130016	Organic Chemistry			4
P0531D130051	Engineering of Energetic Materials			4
P0531D130054	Physical Chemistry			4
P0531D130071	Surface Engineering			4
P0711D130002	Organic Technology			4
P0711D130026	Chemical and Process Engineering	Chemical Engineering		4
		Environmental Engineering		4
P0711D130028	Inorganic Technology			4

2.2 Innovation of study programmes

In 2023, in close cooperation with programme guarantors, course supervisors and other teaching staff, continuous innovation of individual study programmes and their courses was implemented within the framework of valid accreditations.

2.3 Application of ECTS and learning outcomes methodology

The principles of a credit system are applied corresponding to the international ECTS – European Credit Transfer System. Use of the credit system is enshrined in the Study and Examination Regulations of the University of Pardubice.

The profiles of graduates of bachelor's, master's and doctoral study programmes are described in the newly accredited study programmes, as are the learning outcomes of individual subjects, in relation to the outcomes of the INP National Qualifications Framework for Tertiary Education (Q-RAM) and in accordance with the Framework of Higher Education Qualifications of the Czech Republic.

2.4 Interest in studying at the faculty

Open days in 2023

The Faculty of Chemical Technology held its open days on 25 January, 8 February, and 25 February for the general public, with a special session on 2 February for students of the Upper Secondary School of Chemistry Pardubice. Over 200 secondary school students visited the faculty during these events (61 grammar school students and 137 students from other secondary schools). The faculty introduced its bachelor's degree programmes in the form of a fair and offered laboratory tours. As part of the accompanying programme, prospective students were informed about the admissions procedure, opportunities for studying abroad, accommodation options in university Halls of Residence, and other aspects of university life at the University of Pardubice. Additionally, the career prospects for graduates were also presented.

Cooperation with primary and secondary schools and the search for talented students

The FChT has long been involved in cooperation with secondary schools and in the search for talented students and applicants for study at the faculty. Significant activities in this area include:

- systematic promotion of the faculty at selected secondary schools,
- excursions by secondary schools to faculty premises,
- competition entitled "Search for the Best Young Chemist in the Czech Republic" (for primary schools),
- competition entitled "Chemistry Race" (for secondary schools),
- competition entitled "Chemistry Olympics" (for secondary schools),
- Students' Professional Activity contest – SPA (for secondary schools).

Admissions procedure

The admissions procedure for studies in bachelor's degree programmes for the academic year 2023/2024 took place in two rounds. The deadline for the first round of applications was 31 March 2023. This was subsequently extended until 31 May 2023. In view of the fact that the capacity of some bachelor's degree programmes was not filled during the first round of the admissions procedure, a second round was announced with the deadline for applications being 11 August 2023. The second round of the admissions procedure was then carried out by evaluating the applicants' academic results from secondary school - on the basis of these results, a ranking was drawn up, according to which the applicants were admitted to their chosen course of study where the capacity of the study programmes so allowed.

The deadline for submission of applications for master's degree programmes was 30 June 2023. The admissions procedure was held in the period from 29 August until 30 August 2023. Entrance examinations took the form of an oral interview or a written test.

The deadline for submission of applications for doctoral degree programmes was 31 May 2023. The admissions procedure in the form of an oral interview was held on 13 June 2023. The second round for submission of applications took place from 1 July until 11 August 2023 and the admissions procedure was held on 31 August 2023 and 8 September 2023.

The results of the admissions procedures held in 2023 are summarised in the following table.

Number of students who applied, were accepted and enrolled in the 1 st year of bachelor's, master's and doctoral studies			
Number of students	Applied	Accepted	Enrolled
Bc.	855	585	325
Mgr.	219	181	125
Ph.D.	31	29	24
Total	1105	795	474

2.5 Students of implemented study programmes

The number of students at the faculty as of 31 October of the respective year is given in the following tables. The letter f after the number indicates foreign students.

Total number of students					
Year	2019	2020	2021	2022	2023
Number of students	1262+142c	1236+132c	1190+132c	1087+119c	1006+114c

Number of students by form and level of study					
Form and level of study	2019/20	2020/21	2021/22	2022/23	2023/24
Students with Czech citizenship	1262	1236	1190	1087	1006
Foreign students	142	132	132	119	114
Total students	1404	1368	1322	1206	1120
Full-time study					
Bachelor's programmes	866+95c	859+78c	813+85c	709+72c	648+65c
Master's programmes	268+26c	264+25c	264+20c	263+15c	244+16c
Total full-time	1134+121c	1123+103c	1077+105c	972+87c	892+81c
Total combined study	-	-	-	-	-
Doktoral programmes	128+21c	113+29c	113+27c	115+32c	114+33c

Number of full-time students by study programme						
Study programme	2021/2022		2022/23		2023/24	
	Bc.	Mgr.	Bc.	Mgr.	Bc.	Mgr.
*Chemistry and Technical Chemistry	33+2c	-	2+0c	-	1+0c	-
* Chemistry and Technology of Foodstuffs	28+1c	2+1c	8+0c	0+1c	1+0c	-
* Special Chemical and Biological Fields	333+26c	2+0c	206+15c	1+0c	111+7c	-
* Chemistry and Technology of Materials	-	33+5c	-	14+1c	-	2+0c

Economics and Management of Chemical Industry Enterprises	30+4c	13+0c	18+1c	23+1c	20+2c	22+2c	
Analysis of Biological Materials	49+12c	25+3c	43+10c	26+4c	33+11c	26+4c	
Pharmacochemistry and Medicinal Materials	94+18c	-	86+21c	-	84+18c	-	
Surface Protection of Building and Construction Materials	17+0c	-	8+0c	-	8+0c	-	
Graphic Arts and Printing Technology	38+2c	7+1c	33+2c	8+1c	26+2c	10+1c	
Chemistry and Technology of Environmental Protection	22+5c	-	20+3c	-	19+2c	-	
Polymer Materials and Composites	11+3c	-	11+1c	-	14+1c	-	
Engineering of Energetic Materials	-	-	-	-	-	0+1c	
Bioanalytical Laboratory Diagnostics in Medicine	-	54+1c	-	48+0c	-	42+1c	
Laboratory Diagnostics in Medicine	-	-	102+7c	-	181+10c	-	
Inorganic and Bioinorganic Materials	21+1c	-	25+2c	-	9+1c	-	
Organic Chemistry and Technology	Organic Chemistry	-	10+0c	-	14+0c	-	13+0c
	Technology of Organic Specialities	-	1+0c	-	-	-	3+0c
Organic Coatings and Paints	-	-	-	4+0c	-	4+0c	
Technology of Polymer Manufacturing and Processing	-	-	-	6+0c	-	8+0c	
Evaluation and Analysis of Foodstuffs	50+4c	30+4c	59+6c	27+1c	55+5c	23+0c	
Chemistry	65+6c	-	85+4c	-	86+6c	-	
Engineering of Energetic Materials	-	9+0c	-	11+1c	-	8+1c	
Analytical Chemistry	-	21+2c	-	23+1c	-	23+1c	
Inorganic and Bioinorganic Chemistry	-	6+0c	-	9+0c	-	9+0c	
Material Engineering	-	12+0c	-	10+0c	-	18+0c	
Materials Chemistry	-	-	-	0+2c	-	0+4c	
Physical Chemistry	-	7+0c	-	10+0c	-	11+0c	
Chemical and Process Engineering	Chemical Engineering	-	3+0c	-	4+1c	-	5+1c
	Env. Protection	-	5+0c	-	4+0c	-	5+0c
Sustainable Dev. in Chemistry and Technology	-	9+0c	-	12+0c	-	9+0c	
Inorganic Technology	-	5+0c	-	5+0c	-	3+0c	
Total	1077+105c		972+87c		892+81c		

* Originally accredited study programmes.

Number and proportion of doctoral students					
Year	2019/20	2020/21	2021/22	2022/23	2023/24
Number of students	149	142	140	147	147
Percentage of total number of students (%)	10,6	10,3	10,5	12,1	13,1

2.6 Student failure rates

The failure rate of students (as of 31 October) over the last five academic years in study programmes implemented at the FChT is shown in following table.

Student failure rates in %					
Level of study	2018/19	2019/20	2020/21	2021/22	2022/23
Bc.	32,5 %	27,6 %	30,3 %	31,6 %	29,6 %
Mgr.	7,5 %	9,9 %	12,1 %	10,6 %	9,4 %
Ph.D.	9,4 %	13,4 %	13,4 %	10,7 %	13,6 %

2.7 Graduates of implemented study programmes

Care for graduates of study programmes at the FChT is provided in cooperation with the University of Pardubice, which operates the graduate website <https://absolventi.upce.cz/>. Registration allows graduates to keep up to date, receiving information and news about their home University of Pardubice and the faculty they graduated from.

Development of the number of FChT graduates from the point of view of individual levels of study over the last five years is shown in the following table.

Numbers of graduates of individual levels of study					
Level of study	2019	2020	2021	2022	2023
Bc.	172	163	172	165	164
Mgr.	36	26	31	39	30
Ing.	89	96	81	76	86
Ph.D.	29	28	17	16	17
Total	326	313	301	296	297

The numbers in the table correspond to the V 12-01 statement for the period from 1 January to 31 December of the respective year.

Awarded theses of FChT students

In 2023, a number of dissertations, diploma and bachelor theses were awarded for their outstanding theoretical and experimental level. The following prizes were awarded:

- Student Prize awarded by the Dean of the Faculty of Chemical Technology at the University of Pardubice for an outstanding dissertation in the academic year 2022/2023 (2 prizes),
- Level I Student Prize awarded by the Rector for a diploma thesis defended in 2023 (1 prize),
- Level II Student Prize awarded by the Rector for a diploma thesis defended in 2023 (3 prizes),
- Student Prize awarded by the Dean of the Faculty of Chemical Technology at the University of Pardubice for an outstanding level and defence of a diploma thesis (7 prizes),
- Den Braven Production s.r.o. Prize for the best diploma thesis defended in 2023 in the field of polymer materials and composites (1 prize),
- DEVRO, s.r.o. Prize for outstanding level of the diploma thesis and its defense in 2023 in the fields of food, biochemical, and biological sciences or in the field of food packaging materials, technologies, and related materials (3 prizes),
- Pfizer, spol. s r.o. Prize for the best diploma thesis defended in 2023 in the field of pharmaceutical chemistry (2 prizes),
- General Director's Prize from Synthesia, a.s. for the most content-rich diploma thesis defended in 2023 in the field of organic pigments and technologies, processes, materials, and technologies that have a significant impact on industrial production (2 prizes),
- SYNTHOS, a.s. Prize for the best diploma thesis in the field of chemistry in the academic year 2022/2023 (3 prizes),
- Teva Czech Industries s.r.o. Prize for the best diploma thesis defended in 2023 focusing on pharmaceutical chemistry and technology (2 prizes),
- Miroslav Jureček Foundation Prize (3 prizes),
- Student Prize of the Dean of the Faculty of Chemical Technology of the University of Pardubice, for outstanding level and defense of a bachelor's thesis (7 prizes),

- Den Braven Production s.r.o. Prize for the best bachelor's thesis defended in 2023 in the field of polymer materials and composites (1 prize),
- Pfizer, spol. s r.o. Prize for the best bachelor's thesis defended in 2023 in the field of pharmaceutical chemistry (2 prize),
- Synthesia, a.s., Pardubice Prize for the most content-rich bachelor's thesis defended in 2023 in the field of organic pigments and technologies, processes, materials, and technologies that have a significant impact on industrial production (2 prizes),
- Teva Czech Industries s.r.o. Prize for the best bachelor's thesis defended in 2023 focusing on pharmaceutical chemistry and technology (2 prizes).

Cooperation with future employers of students

The faculty enjoyed cooperation with future employers of students in 2023. Apart from publishing information about demand on the part of companies for graduates of the faculty, the faculty organised a meeting of students and representatives of chemical companies called CONTACT 2022 on 15 March 2023, which was attended by 56 companies. The Faculty of Economics and Administration at the University of Pardubice and university career centre participated in organisation of this event together with the FChT. The aim of this meeting was to put future graduates of the faculties in contact with potential employers and to help them get their bearings on the job market. Company presentations and face-to-face meetings were held in the university auditorium and on faculty premises, during which both parties had ample opportunity to talk about the things which interested them.

2.8 Other educational activities

The FChT offered a number of additional educational activities for interested parties during the course of 2023. These included licensing study and the University of the Third Age, preparatory courses, as well as student research and professional activities.

Licensing study

Licensing study in the field of **“Theory and Technology of Explosives”** is intended for further education and retraining of workers in explosives, munitions, processing and disposal plants and factories, as well as workers who use, store and do business with explosives and explosive hazardous substances. This study is also suitable for obtaining basic information about protection of various facilities against gas explosions, vapour explosions or dispersion of combustible dusts. The study also includes the issue of testing and special analysis of explosives, lectures on the basics of ballistics, munitions and weapons design.

Licensing study in the field of **“Basics of Fibre, Paper and Cardboard Manufacturing and Processing Technologies”** is intended for further education and retraining of workers who work in the pulp and paper industry, who do business with paper products or raw materials and equipment to the pulp and paper industry. The aim of this licensing study is to familiarise participants with the theoretical foundations of fibre, paper and cardboard manufacturing technology, including ecological aspects, and processes for processing these materials.

Licensing study in the field of **“Rock Blasting”** is intended for further education and retraining of workers from the field of blasting technology. Based on the decision of the Czech Mining Authority, reference number SBS24151/2022/ČBÚ-22, the curricula and texts of the licensed study meet the requirements for the qualification and professional competence of applicants for the blasting technical

supervisor examination. The study is focused on the specialisations of surface mining and engineering work.

University of the Third Age

The FChT offers study at the “**University of the Third Age**” to senior citizens and others with the lecture series “**Chemistry for Life**”. In this programme, the latest findings in the fields taught at the faculty, which are of interest to the general public, are presented in a popular format. Teachers from the ranks of the academic staff of the faculties at the University of Pardubice and experts from the sphere of practical application present selected topics in an attractive manner and try to overcome the ingrained negative attitudes of the non-professional public towards chemistry as such. The “University of the Third Age” programme promotes continuous intellectual development in the post-productive age, interest in current events, practical use of the acquired knowledge, a permanent active approach to life and creates a place for people to meet and establish new relationships.

More information about licensing study and the University of the Third Age which were implemented at the FChT in 2023 can be seen in the following table.

Licensing study and University of the Third Age				
Name of educational activity	Number of participants	Length of study	Form of study	Number of hours
Theory and Technology of Explosives - implemented at the IEnM (launched in 2023)	16	4 semesters	licensing	345
Theory and Technology of Explosives - implemented at the IEnM (launched in 2022)	6	4 semesters	licensing	345
Basics of Fibre, Paper and Cardboard Manufacturing and Processing Technologies – implemented at the IChTMM	21	3 semesters	licensing	200
Rock Blasting – implemented at the IEnM	7	2 semesters	licensing	300
Chemistry for Life	37	4 semesters	U3A	184

Preparatory courses

Before the beginning of regular tuition in the winter semester of the 1st year of bachelor’s degree studies, the Department of General and Inorganic Chemistry organises a course entitled “General and Inorganic Chemistry” every year. The course is aimed at acquiring and consolidating the most basic chemical skills such as chemical nomenclature, solving chemical equations, learning about the amount of substance and the preparation of solutions with the defined concentration.

Student Research and Professional Activities

Student Research and Professional Activities (SRPA) is the name of an activity for students of bachelor’s and master’s degree programmes at the FChT which engages students in research and professional activities beyond the framework of their studies. SRPA is an important form of preparation for students, during which they learn to present the results of their work, develop research and professional skills and contribute towards improvement of their argumentation skills, presentation skills and professional writing. The ninth year saw participation by 34 students from 12 faculty departments.

3 EMPLOYEES

3.1 Number of faculty employees and its development

The FChT had a total of 307.17 employees (FTE) in 2023, of which 53% were academics, 21% were researchers and the remaining 26% were other employees.

Total academics (FTE)								
	Professors	Associate professors	Assistant professors	Assistants	Lecturers	SRD staff	Extraordinary professors	TOTAL ACA
Women	4.73	13.68	35.59	2.50	-	-	-	56.50
Men	29.08	28.48	49.14	0.79	-	-	-	107.49
TOTAL	33.81	42.16	84.73	3.29	-	-	-	163.99

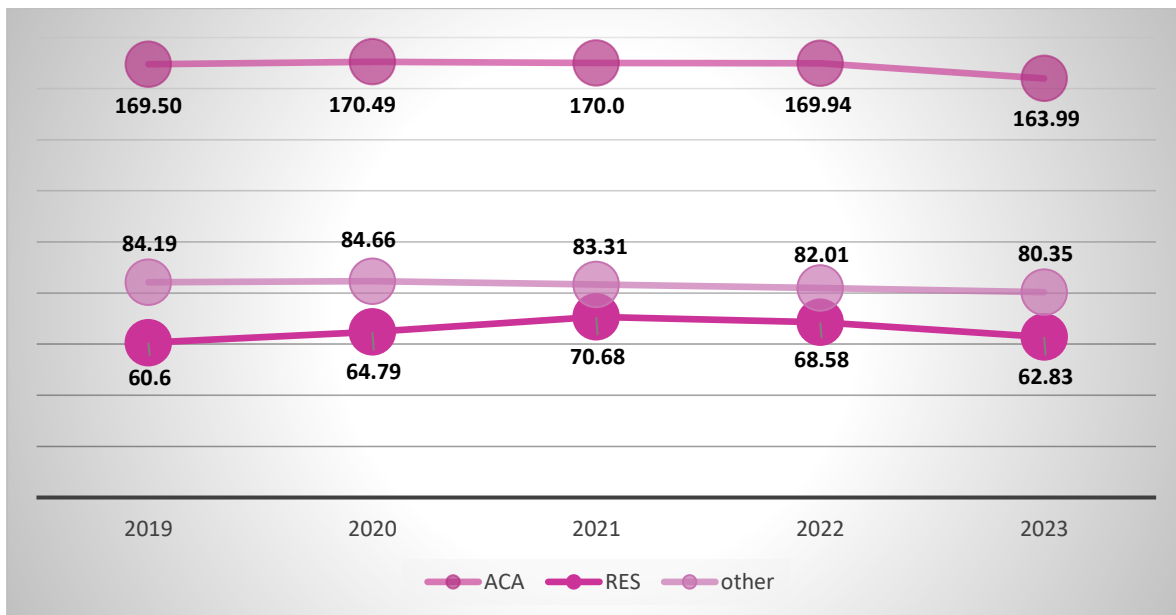
Total researchers and other employees (FTE)					
	Postdoctoral researchers ("Postdoc")	RES not included in other categories	Other SRD staff	Other employees	TOTAL RES and other employees
Women	-	25.66	-	67.74	93.40
Men	-	37.17	-	12.61	49.78
TOTAL	-	62.83	-	80.35	143.18

The FTE numbers of academics, researchers and other FChT employees from the point of view of foreign nationality are shown in the following tables.

Academics with foreign nationality (FTE)						
	Professors	Associate professors	Assistant professors	Assistants	Lecturers	SRD staff involved in teaching activities
Women	0.09	0.26	0.14	-	-	-
Men	-	-	1.00	-	-	-
TOTAL	0.09	0.26	1.14	-	-	-
Of which: Germany	-	-	-	-	-	-
Poland	-	-	-	-	-	-
Austria	-	-	-	-	-	-
Slovakia	-	-	1.14	-	-	-
Other EU states	0.09	0.26	-	-	-	-
Other non-EU states	-	-	-	-	-	-

Researchers and other employees with foreign nationality (FTE)				
	Postdoctoral researchers ("Postdoc")	RES not included in other categories	Other SRD staff	Other employees
Women	-	8.41	-	0.92
Men	-	6.83	-	-
TOTAL	-	15.24	-	0.92
Of which: Germany	-	1.92	-	-
Poland	-	1.00	-	-
Austria	-	-	-	-
Slovakia	-	1.00	-	0.92
Other EU states	-	1.21	-	-
Other non-EU states	-	10.11	-	-

The development of the number of FTEs among FChT employees over the last five years is illustrated in the following graph.



3.2 Career development rules and system of remuneration

Heads of FChT departments are obliged to prepare an annual qualification development plan for each employee and are obliged to submit this plan in writing to the Dean of Faculty by 31 January. An FChT staff development plan is prepared annually in relation to this, as was also the case in 2023, and is discussed and approved by faculty management by 1 March of each respective year.

Qualification requirements for the performance of individual work activities are defined by the Internal Wage Regulations of the University of Pardubice. The Internal Wage Regulations also lay down a uniform procedure (conditions) for the provision of fixed salaries and on-call bonuses and the amount of all such monetary benefits to university employees for work performed for the university within the framework of a basic employment relationship in accordance with Act No. 262/2006 Coll., the Labour Code, as amended. These Internal Wage Regulations also regulate the basic conditions for negotiating remuneration from an agreement in the case of university staff working for the university on the basis of agreements on work performed outside of an employment relationship.

3.3 Qualification structure of employees

Measured in terms of individuals, a total of 320 people were working at the FChT as of 31 December 2023, including 173 academics, 64 researchers and 83 other employees, as shown in the following tables.

Number of academics by full-time equivalent and highest qualification attained (numbers of individuals)												
FTE	prof.			doc.			DrSc., CSc., Dr., Ph.D., Th.D.			Other		
	Women	Men	TOTAL	Women	Men	TOTAL	Women	Men	TOTAL	Women	Men	TOTAL
up to 0.3	0	1	1	0	1	1	1	2	3	0	2	2
0.31–0.5	1	2	3	0	3	3	2	1	3	1	1	2
0.51–0.7	0	1	1	0	0	0	1	0	1	0	0	0
0.71–1	5	27	32	13	30	43	31	42	73	4	1	5
TOTAL	6	31	37	13	34	47	35	45	80	5	4	9

In accordance with the methodology of the Ministry of Education, Youth and Sports, the categorisation of academic staff is based on their highest attained qualifications.

Number of researchers and other employees by full-time equivalent (numbers of individuals)						
FTE	Researchers			Others		
	Women	Men	TOTAL	Women	Men	TOTAL
up to 0.3	0	1	1	0	0	0
0.31–0.5	3	1	4	1	0	1
0.51–0.7	0	1	1	0	2	2
0.71–1	23	35	58	69	11	80
TOTAL	26	38	64	70	13	83

3.4 Qualification development of employees

The specification of newly appointed professors and associate professors in 2023, including those who are not core staff members at FChT, is shown in the table below.

Newly appointed professors and associate professors (numbers of individuals)				
Category	Number at the faculty		Core faculty staff appointed at other universities	Average age of newly appointed
	Total	Of which core faculty staff		
Appointed professors	3	2	2	46.7
of which women	1	1	2	50
Appointed associate professors	2	2	2	41.5
of which women	0	0	0	-

3.5 Age structure of employees

The age structure of employees at the FChT as at 31 December 2023 is shown in the following tables.

Age structure of academics (numbers of individuals)												
Age range	Women	Men	TOTAL	Women	Men	TOTAL	Women	Men	TOTAL	Women	Men	TOTAL
	Professors			Associate professors			Assistant professors			Assistants		
Up to 29	0	0	0	0	0	0	1	0	1	0	0	0
30-39	0	0	0	0	2	2	6	14	20	2	2	4
40-49	0	6	6	8	15	23	19	22	41	1	1	2
50-59	4	10	14	3	8	11	9	10	19	0	0	0
60-69	1	10	11	2	4	6	2	2	4	0	0	0
Over 70	1	4	5	0	3	3	0	1	1	0	0	0
TOTAL	6	33	39	14	33	47	39	53	92	3	3	6

In accordance with the methodology of the Ministry of Education, Youth and Sports, the categorisation of academic staff is based on their job classification.

Age structure of researchers (numbers of individuals)			
Age range	Women	Men	TOTAL
	Researchers not included in other categories		
Up to 29 let	2	4	6
30-39	14	20	34
40-49	5	11	16
50-59	3	1	4
60-69	2	1	3
Over 70	0	1	1
TOTAL	26	38	64

Age structure of other employees (numbers of individuals)			
Age range	Women	Men	TOTAL
	Other employees		
Up to 29 let	0	0	0
30-39	7	0	7
40-49	23	3	26
50-59	33	2	35
60-69	7	4	11
Over 70	0	4	4
TOTAL	70	13	83

3.6 Management workers

The gender representation of FChT employees in management bodies as of 31 December 2023 is shown in the following table.

Management workers (numbers of individuals)							
	Dean	Vice-Dean	Academic Senate	Scientific Council	Secretary	Head of Department /Institute/ Research Site	TOTAL management workers
Women	0	2	0	3	0	4	9
Men	1	2	10	18	1	10	42
TOTAL	1	4	10	21	1	14	51

3.7 Employee work-life balance

Ensuring the appropriate work-life balance for employees is a priority for the faculty. Employees with young children, for example, are accommodated when setting holiday dates, and in the case of academic staff, this is respected when drawing up the timetable. As regards the employment contracts of employees, these are both fixed-term and open-ended, full-time and part-time.

Work-life balance				
	Number of fixed-term employment contracts	Number of open-ended employment contracts	Number of full-time employment contracts	Number of part-time employment contracts
Women	42	113	140	15
Men	41	124	142	23
TOTAL	83	237	282	38

3.8 Average gross salary of employees

Average gross salary of FChT and University of Pardubice employees as a whole over the last five years is shown in the following table.

Average gross salary of employees in CZK					
	2019	2020	2021	2022	2023
FChT					
Average gross salary	50,408	47,528	52,884	50,826	52,398
UPCE					
Average gross salary	40,591	40,698	43,143	43,789	45,316



4 INTERNACIONALISATION

4.1 Involvement in international cooperation

The FChT is involved in international cooperation in the field of research and teaching. Projects both of foreign providers and also projects funded by domestic providers intended to support bilateral cooperation are submitted and implemented

In 2023, two significant ERC projects received support: the ERC Advanced Grant project titled Oncolipidomics: Why is Lipidomic Dysregulation Pattern in Blood Similar for Various Cancers? (Oncolipid), and the ERC CZ project titled Positively Charged Heteroboranes. A new project under Horizon Europe was also accepted, titled Smart Sensors and Self-healing Functionalities Embedded for Battery Longevity with Manufacturability and Economical Recyclability (SALAMANDER). The implementation of two projects funded by the Horizon Europe programme continued: the Joint Industrial Data Exchange Pipeline (JIDEP) project and the Innovative Environmental Multisensing for Waterbody Quality Monitoring and Remediation Assessment (IBAIA) project. In 2023, the research project New Materials and Processing in Organic Electronics (MADRAS), which was funded by the Horizon 2020 programme – the European Union’s framework programme for research and innovation, was also successfully completed. In addition to these projects, the FChT was involved in the implementation of other international research projects, which are specified in Chapter 5.2.

The FChT also worked on three teaching projects in cooperation with foreign partners during the year, specification of which is seen in the table below.

International teaching projects			
Project number	Project name	Provider/programme	Principal investigator
EHP-CZ-ICP-4-019	NEW Trends in Education of Sustainability-oriented Courses (NEWTEC)	MF/Financial mechanisms of the EEA and Norway	Vávra Jan, Ing., Ph.D.
KA220-HED-797789EC4	A New Academic Path for EU Project Managers: Narrowing the Gaps to Enable Better Project Design and Management in Europe	EU/ERASMUS+	Košťálová Jana, Ing., Ph.D.
22320035	Innovative Education according to the Needs of Industry 4.0 Principles in V4 Countries	IVF/International Visegrad Fund	Branská Lenka, doc. Ing., Ph.D.

In connection with involvement by the FChT in international cooperation, expenditure was incurred in 2023 for foreign business trips in the amount of CZK 5,388,000.00. The following table shows development of costs for foreign business trips over the last five years, which was significantly affected by the COVID-19 pandemic in 2020 and 2021.

Costs for foreign business trips (in CZK thousands)					
Year	2019	2020	2021	2022	2023
Costs for foreign business trips	6,417	522	1,148	6,854	5,388

4.2 International mobility of students, academics and other staff

The FChT continued to participate in international cooperation within the framework of the Erasmus+ programme in 2023, as is shown in the table below.

Mobility of students, academics and other staff in the Erasmus+ programme					
Index	2019	2020	2021	2022	2023
Number of outgoing students	15	21	14	17	28
Number of incoming students	26	13	5	9	9
Number of outgoing academics	11	2	2	3	3
Number of incoming academics	3	2	0	2	0
Number of outgoing other workers	2	0	0	2	2
Number of incoming other workers	1	0	0	1	0

The FChT was also involved in the following three networks within the framework of the CEEPUS programme (“Central European Exchange Programme for University Studies”) during the respective year:

- CIII-CZ-0212 - Ing. Radovan Metelka, Ph.D.,
- CIII-RO-1111 - Ing. Radovan Metelka, Ph.D.,
- CIII-RS-0704 - Ing. Bohumil Jašúrek, Ph.D.

Mobility within the framework of the CEEPUS programme is specified below.

Mobility of students and academics in the CEEPUS programme					
Index	2019	2020	2021	2022	2023
Number of projects	2	2	3	3	3
Number of outgoing students	0	0	0	1	0
Number of incoming students	19	4	1	7	14
Number of outgoing academics	5	1	0	5	3
Number of incoming academics	19	1	4	10	10
Grants (in CZK thousands)	456.5	166.5	93	241	288

4.3 Overview of cooperation agreements with foreign partners

The FChT has concluded agreements in particular supporting mobility of students, academic and other staff with the following foreign partners.

Agreements with foreign partners in the field of education	
Belgium	Arteveldehogeschool
Finland	Åbo Akademi University
Finland	Tampereen Korkeakoulusaatio
France	Ecole Nationale Supérieure des Ingénieurs des Etudes et Techniques d'Armement
France	Institut National Polytechnique De Grenoble
France	Université de Lille
France	Université de Rennes I (2 smlouvy)
Croatia	Sveučilište u Dubrovniku
Italy	Università degli Studi dell'Aquila
Italy	Università Degli Studi Di Modena E Reggio Emilia
Italy	Universita di Torino

Italy	Università degli Studi di Messina
Lithuania	Kauno kolegija
Lithuania	Klaipėdos universitetas
Latvia	Rīgas tehniskā universitāte
Hungary	Debreceni Egyetem
Netherlands	Hanzehogeschool Groningen
Norway	Norges teknisk-naturvitenskapelige universitet
Poland	Akademia Górniczo-Hutnicza w Krakowie
Poland	Uniwersytet Rolniczy im. Hugona Kołłątaja w Krakowie
Poland	Uniwersytet Łódzki
Poland	Uniwersytet Marii Curie-Skłodowskiej
Poland	Uniwersytet Mikołaja Kopernika w Toruniu
Poland	Wojskowa Akademia Techniczna
Portugal	Universidade de Aveiro
Portugal	Universidade do Minho
Portugal	Universidade de Coimbra
Portugal	Universidade da Madeira
Portugal	Instituto Politécnico de Viseu
Romania	Academia Tehnică Militară din București
Romania	Universitatea din Craiova
Greece	Ethniko kai kapodistriako panepistimio Athinon
Greece	Geoponiko panepistimio Athinon (2 smlouvy)
Greece	Panepistimio dytikis Attikis (2 smlouvy)
Greece	University of Piraeus
Slovakia	Slovenská technická univerzita v Bratislave (2 smlouvy)
Slovakia	Technická univerzita v Košiciach (2 smlouvy)
Slovakia	Univerzita Konštantína Filozofa v Nitre (2 smlouvy)
Slovenia	Univerza v Ljublani (2 smlouvy)
Germany	Technische Univerisät Chemnitz
Germany	Friedrich-Schiller-Universität Jena (2 smlouvy)
Germany	Eberhard Karls Universität Tübingen
Serbia	Univerzitet u Novom Sadu
Spain	Universidad de Burgos
Spain	Universitat Jaume I
Spain	Universidad de Huelva
Spain	Universidad de Jaén
Spain	Universidad de Málaga
Spain	Universitat de les Illes Balears
Spain	Universidad de Sevilla
Spain	Universidad de La Laguna
Spain	Universidad Politécnica de Valencia
Sweden	Umeå University
Turkey	Ankara Üniversitesi
Turkey	Canakkale Onsekiz Mart Üniversitesi
Turkey	Marmara Üniversitesi

Other forms of contractual cooperation based on memoranda and agreements in the field of scientific research are developed by the faculty with the following partners.

Memoranda and agreements with foreign partners in the field of scientific research			
Foreign university/institution	City	Country	Year of conclusion of agreement
University of Graz	Graz	Austria	1993
South Valley University	Qena, Aswan	Egypt	2001
Eberhard Karl University of Tübingen	Tübingen	Germany	2004
National Institute of Chemistry	Ljubljana	Slovenia	1994
University of Ljubljana	Ljubljana	Slovenia	1998
Technical University of Szczecin (now the West Pomeranian University of Technology)	Szczecin	Poland	1998
Technical University of Košice	Košice	Slovakia	2000
Institute of Industrial Organic Chemistry	Warsaw	Poland	2001
National Institute for Material Science	Tsukuba	Japan	2009
Kumamoto University	Kumamoto	Japan	2015
Austin Peay State University	Clarksville	USA	2013
Tennessee Tech University	Cookeville	USA	2016
Matsumoto University	Matsumoto	Japan	2006
Alexander Dubček University in Trenčín	Trenčín	Slovakia	2011

Other than agreements concluded by the faculty, agreements also exist on the level of the university, e.g. with the Friedrich Schiller University in Jena, Germany, the Kyoto Prefectural University of Medicine in Kyoto, Japan, the Military University of Technology in Warsaw, Poland, the Nanyang Technological University in Singapore, Singapore, the Toyota Technological Institute in Nagoja, Japan, the University of Rennes I in Rennes, France, the Vietnam Academy of Science and Technology in Hanoi, Vietnam and the VNU University of Sciences in Hanoi, Vietnam, on the basis of which a mutually beneficial cooperation with a number of FChT departments takes place.

5 RESEARCH AND OTHER CREATIVE ACTIVITIES

5.1 Development of research and other creative activities

Research and other creative activities of the faculty are focused primarily on high-quality basic and applied research and are carried out in accordance with the Strategic Plan of the Faculty of Chemical Technology at the University of Pardubice for the period from 2021, revised on 30 November 2023, and its specification in the form of Implementation of the Strategic Plan of the Faculty of Chemical Technology at the University of Pardubice for the given year.

Research, experimental development and innovation are based on chemical sciences and fields of study which are specific to the faculty, have been developed over the long term, and in which the faculty has already achieved demonstrable results in the past and therefore has a recognised reputation in a national and international context. The FChT carries out research, experimental development and innovations mainly in the scientific field of 1 Natural Sciences (FORD 1.4 Chemical Sciences) and the scientific field of 2 Engineering and Technology (FORD 2.5 Materials Engineering).

The basic scientific research units are working groups of departments/institutes which are actively involved in projects funded mainly by the Grant Agency of the Czech Republic, the Technology Agency of the Czech Republic and ministerial providers of support. An important contribution towards development of the faculty's scientific research activities is also constituted by funds obtained in connection with cooperation with industry and international cooperation. This is also related to the high level of publication and creative activities oriented towards articles in professional periodicals with impact factors, monographs and patents, etc. In financial terms, the volume of creative activities with a focus on science, research and innovation in 2023 accounted for a significant part of the FChT budget.

The FChT has a dominant focus on basic/applied research in the following fields:

- inorganic pigments for ceramics and paints,
- analysis and separation of bio-analytical and food compounds,
- analysis of diagnostically relevant materials for the study of metabolism and oxidative stress in patients with different types of diseases,
- biologically active compounds for applications in human and veterinary medicine,
- detection of microorganisms using cultivation-based and molecular biology methods,
- electrochemistry and interfacial chemistry and methodologies for the preparation and subsequent elemental analysis of samples with a focus on the development and application of separation, analytical, detection and diagnostic techniques, instrumentation and sensors relating to human health, environmental protection and materials analysis,
- energetic materials for use mainly in the automotive, aerospace, mining, construction and defence sectors,
- photonics, optics and optoelectronics,
- environmental processes (e.g. technologies applicable to pre-treatment and treatment of process, waste and municipal water),
- chemical processes with high added value, which relates mainly to research into new and highly selective adsorbents, catalysts (homogeneous and heterogeneous catalysis) and photocatalysts,

- identification/detection of biomarkers in patients with neurodegenerative diseases and cancers, among other things, with the aim of early detection of cancer,
- bulk glasses and amorphous thin films,
- organic dyes for dyeing and printing,
- organic materials for optoelectronics,
- organic pigments for the automotive and construction industries,
- organic coatings and paints,
- organometallic and coordination compounds with subsequent application in catalytically controlled processes, as precursors of advanced materials, or compounds with biological effects,
- advanced low-dimensional nanomaterials using modern synthesis methods, their use in various applications (e.g. batteries, catalysts, water decomposition and solar cells, etc.),
- nanobiomedical technologies,
- semiconductors and materials for thermoelectric applications,
- polymer materials, fibres, composites and organic coatings,
- material printing,
- membrane separation processes,
- safety engineering and risk analysis methods for the requirements of the chemical industry,
- glass-forming materials (amorphous/crystalline form, bulk materials/thin films), advanced viscous and kinetic phenomena and physicochemical processes associated with the use of these materials,
- determination of sensitivity of individual cell types to the effects of genotoxic agents,
- fibres based on novel polysaccharides with biological properties.

5.2 Grants and projects

The development of the volume of funds flowing into the FChT over the last five years from research and other creative activities can be seen in the following table. The development of the number of projects and the amount of funding received from the GACR and TACR, which represent a significant group of FChT projects, is then specified.

Funds raised within the framework of research and other creative activities					
Year	2019	2020	2021	2022	2023
Institutional support for the development of the research organisation (CZK thousands)	140,872	151,052	156,143	170,038	170,038
Foreign grants (CZK thousands)	7,647	5,073	2,243	3,292	12,665
Domestic grants (CZK thousands)	181,913	154,794	135,628	118,814	87,730
Student grant competition (CZK thousands)	18,334	12,715	12,415	11,924	12,966
Additional activities (CZK thousands)	5,264	7,285	6,742	6,231	5,734

Number of projects and amount of funding received from GACR and TACR (principal investigators and co-investigators)						
Provider	2019		2020		2021	
	Number of projects implemented	Funds in CZK thousands	Number of projects implemented	Funds in CZK thousands	Number of projects implemented	Funds in CZK thousands
GACR	29	50,294	27	53,463	23	47,755
TACR	19	16,970	19	17,279	17	16,479
Provider	2022		2023			
	Number of projects implemented	Funds in CZK thousands	Number of projects implemented	Funds in CZK thousands		
GACR	23	42,922	22	47,170		
TACR	11	12,449	10	10,003		

An overview of the individual projects implemented in 2023 at the FChT is given in the following tables.

International projects

International projects			
Project no.	Project no.	Project no.	Project no.
862492	New Materials and Processing in Organic Electronics (MADRAS)	EU/Horizont 2020	Syrový Tomáš, doc. Ing., Ph.D.
101058732	Joint Industrial Data Exchange Pipeline (JIDEP)	EU/Horizont Europe	Syrový Tomáš, doc. Ing., Ph.D.
101092723	Innovative Environmental Multisensing for Waterbody Quality Monitoring and Remediation Assessment (IBAIA)	EU/Horizont Europe	Němec Petr, prof. Ing., Ph.D.
101104028	Smart Sensors and Self-healing Functionalities Embedded for Battery Longevity with Manufacturability and Economical Recyclability (SALAMANDER)	EU/Horizont Europe	Syrový Tomáš, doc. Ing., Ph.D.
101095860	Oncolipidomics: Why is Lipidomic Dysregulation Pattern in Blood Similar for Various Cancers? (ONCOLIPID)	EU/Horizont Europe	Holčapek Michal, prof. Ing., Ph.D.
OISE-2106457	International Research Experiences for Students (IRES)	National Science Foundation	Vlček Miroslav, prof. Ing., CSc.
TH80020009	Tellurium-free Thermoelectric Modules for Waste Heat Recovery by Interface Engineering (THERMOS)	TAČR/M-ERA.NET 3	Bureš Filip, prof. Ing., Ph.D.
EHP-BFNU-OVNKM-4-079-2022	Towards Regenerative and Sustainable Development and Society	MF/ Financial mechanisms of the EEA and Norway	Tetřevová Liběna, doc. Ing., Ph.D.

GACR, TACR and ministerial projects

Department of Analytical Chemistry

GACR, TACR and ministerial projects			
Project number	Project name	Provider	Principal investigator on behalf of FChT UPCE
GACR projects			
21-20238S	Linking of multidimensional chromatography and mass spectrometry in quantitative approaches for detailed characterisation of the human plasma lipidome	GACR	Holčapek Michal, prof. Ing., Ph.D.
22-09556S	Self-adaptive multidimensional separation	GACR	Česla Petr, doc. Ing., Ph.D.
MH projects			
NU21-03-00499	Prospective study on early detection of pancreatic cancer and monitoring of treatment progress based on lipidomic profiling by mass spectrometry	MH	Holčapek Michal, prof. Ing., Ph.D.

Department of General and Inorganic Chemistry

GACR, TACR and ministerial projects			
Project number	Project name	Provider	Principal investigator on behalf of FChT UPCE
GACR projects			
21-02964S	Nitrogen ligands for non-transition metal elements - bulkier, more conjugated and more reactive	GACR	Růžička Aleš, prof. Ing., Ph.D.
22-03945S	Polyhedral (car)borates - cationic and catalytically applicable	GACR	Růžička Aleš, prof. Ing., Ph.D.
22-17230S	Organometallic cations of tellurium for activation of E-H bonds in boranes, silanes and phosphines	GACR	Dostál Libor, doc. Ing., Ph.D.
23-06548S	Superhydrophobic materials based on heteroboroxines	GACR	Jambor Roman, prof. Ing., Ph.D.
TACR projects			
FW06010094	Advanced epoxy composites with boron compounds	TACR	Knotek Petr, Ing., Ph.D.
MIT projects			
CZ.01.01.01/01/22_002/0000504	Development and production of biodegradable lactyl lactates with conditioning effects	MIT	Olejník Roman, Ing., Ph.D.
MEYS projects			
LL2309	Positively charged heteroboranes	MEYS	Vrána Jan, Ing., Ph.D.

Department of Inorganic Technology

GACR, TACR and ministerial projects			
Project number	Project name	Provider	Principal investigator on behalf of FChT UPCE
GACR projects			
22-11397S	Mixed perovskites as multifunctional materials in pigment study	GACR	Šulcová Petra, prof. Ing., Ph.D.
MI projects			
VJ01010004	Development of a strategic cluster for efficient instrumental technological processes in the detection of forgeries of modern art in the forensic field	MI	Šulcová Petra, prof. Ing., Ph.D.

Department of Physical Chemistry

GACR, TACR and ministerial projects			
Project number	Project name	Provider	Principal investigator on behalf of FChT UPCE
GACR projects			
20-12735S	Research into zeolites with nanostructured architecture: synergy of experiment and theory	GACR	Bulánek Roman, prof. Ing., Ph.D.
22-23120S	Catalysts for the oxidative dehydrogenation of boron-based alkanes	GACR	Bulánek Roman, prof. Ing., Ph.D.

Department of Graphic Arts and Photophysics

GACR, TACR and ministerial projects			
Project number	Project name	Provider	Principal investigator on behalf of FChT UPCE
GACR projects			
22-05179S	Infrared photonics for chemical sensors: Material strategy based on amorphous chalcogenides	GACR	Nazabal Virginie, doc., Dr.
22-07635S	Advanced methods for the preparation of telluride semimetals and non-transition metals	GACR	Němec Petr, prof. Ing., Ph.D.
TACR projects			
FW03010448	OILSENSE – Detection systems for industrial equipment based on large area sensors	TACR	Syrový Tomáš, doc. Ing., Ph.D.
TK04030083	EllyteMat – Advanced materials for lithium and post-lithium battery electrolytes	TACR	Syrový Tomáš, doc. Ing., Ph.D.
TN02000067	New directions in electronics for industry 4.0 and medicine 4.0	TACR	Syrový Tomáš, doc. Ing., Ph.D.
FW06010298	Additive technology for the production of capacitive sensors for large-sized touch panels	TACR	Syrový Tomáš, doc. Ing., Ph.D.

TN02000051	National centre of competence in polymer materials and technologies for the 21 st century	TACR	Syrový Tomáš, doc. Ing., Ph.D.
MIT projects			
CZ.01.1.02/0.0/0.0/21_374/00 26916	Development of a system for environmental impact assessment of printing products using the LCA method	MIT	Němec Petr, prof. Ing., Ph.D.

Department of Biological and Biochemical Sciences

GACR, TACR and ministerial projects			
Project number	Project name	Provider	Principal investigator on behalf of FChT UPCE
GACR projects			
23-06536S	Pnpt1 as a regulator of metabolic reprogramming in phagocyte	GACR	Roušar Tomáš, doc. RNDr., Ph.D.

Department of Economy and Management of Chemical and Food Industry

GACR, TACR and ministerial projects			
Project number	Project name	Provider	Principal investigator on behalf of FChT UPCE
TACR projects			
TQ01000074	Digitalization of project management teaching using the concepts of serious games, virtual and augmented reality considering the current needs of business	TACR	Košťálová Jana, doc. Ing., Ph.D.

Department of Organic Chemistry and Technology

GACR, TACR and ministerial projects			
Project number	Project name	Provider	Principal investigator on behalf of FChT UPCE
GACR projects			
22-14988S	DikyanPyraZin: A versatile tool for photoredox catalysis	GACR	Bureš Filip, prof. Ing., Ph.D.
TACR projects			
TH80020009	THERMOS – Telluride-free thermoelectric waste heat recovery modules prepared by interfacial modifications	TACR	Bureš Filip, prof. Ing., Ph.D.

Department of Environmental and Chemical Engineering

GACR, TACR and ministerial projects			
Project number	Project name	Provider	Principal investigator on behalf of FChT UPCE
GACR projects			
20-01589S	New strategies for improving the sensor properties of novel electrode materials through their pre-treatment or surface modification	GACR	Šelešovská Renáta, doc. Ing., Ph.D.

Department of Chemistry and Technology of Macromolecular Materials

GACR, TACR and ministerial projects			
Project number	Project name	Provider	Principal investigator on behalf of FChT UPCE
GACR projects			
22-05244S	Ionic liquids containing metal immobilised on 2D materials as heterogeneous catalysts for polymerisation	GACR	Honzíček Jan, Ing., Ph.D.

Department of Applied Physics and Mathematics

GACR, TACR and ministerial projects			
Project number	Project name	Provider	Principal investigator on behalf of FChT UPCE
GACR projects			
22-05919S	Bi ₂ O ₂ Se layered semiconductors doped with transition metals: correlation of transport, magnetic and thermoelectric properties	GACR	Drašar Čestmír, prof. Ing., Dr.

Institute of Energetic Materials

GACR, TACR and ministerial projects			
Project number	Project name	Provider	Principal investigator on behalf of FChT UPCE
MI projects			
VK01010097	Police forcible measures with reduced smoke emission	MI	Pelikán Vojtěch, Ing., Ph.D.

Joint Laboratory of Solid State Chemistry

GACR, TACR and ministerial projects			
Project number	Project name	Provider	Principal investigator on behalf of FChT UPCE
GACR projects			
23-06562S	Optimization of proton conductivity in zirconium-based metal-organic frameworks through peripheral substitution of porphyrin ligands	GACR	Melánová Klára, Ing. Dr.

Centre of Materials and Nanotechnologies

GACR, TACR and ministerial projects			
Project number	Project name	Provider	Principal investigator on behalf of FChT UPCE
GACR grants			
21-27243S	Synthesis of large-area TiO ₂ nanotube layers for efficient photocatalytic degradation of gas-phase pollutants and viruses	GACR	Macák Jan, Dr. Ing.
23-08019X	Single-atom 2D photocatalysts	GACR	Macák Jan, Dr. Ing.
23-06793S	Engineering of bipolar electrochemistry technology for the next generation of TiO ₂ nanotubular layers	GACR	Sopha Hanna Ingrid, Ph.D.
23-07071S	Two-dimensional transition metal-based phosphides by atomic layer deposition	GACR	Zazpe Raul, Dr.
23-07574S	Optical properties of amorphous, thermally and laser-crystallized chalcogenide-based materials and their optimization for phase-change nanophotonics	GACR	Krbal Miloš, Ing., Ph.D.
MEYS projects			
LM2023037	Centre of Materials and Nanotechnologies - CEMNAT	MEYS	Wágner Tomáš, prof. Ing., DrSc.
OP RDE projects			
CZ.02.1.01/0.0/0.0/17_048/0007376	Sensors with high sensitivity and materials with low density based on polymer nanocomposites-NANOMAT	MEYS	Vlček Miroslav, prof. Ing., CSc.

SGC projects

Project number	Project name	Provider	Principal investigator on behalf of FChT UPCE
SGC FChT 2023			
SGS_2023_001	Utilization of analytical methods in the processing and analysis of materials, food, and biological samples	UPCE	Bajerová Petra, prof. Ing., Ph.D.
SGS_2023_002	Research on advanced methods and processes in environmental chemistry and engineering, and sustainable and regenerative business development	UPCE	Mikulášek Petr, prof. Ing., CSc.
SGS_2023_003	Preparation of new organic compounds and materials with biological, catalytic, and energetic properties	UPCE	Hanusek Jiří, prof. Ing., Ph.D.
SGS_2023_004	Synthesis, structure, and study of reactivity of advanced macromolecular and supramolecular material structures	UPCE	Bouška Marek, doc. Ing., Ph.D.
SGS_2023_005	Development of bioanalytical methods for laboratory diagnostics of various diseases and pathological conditions	UPCE	Kandár Roman, prof. Mgr., Ph.D.
SGS_2023_008	Basic and applied research of advanced materials for chemical and pharmaceutical technologies	UPCE	Košťál Petr, Ing., Ph.D.
SGS_2023_009	Preparation, characterization, and study of inorganic compounds and materials	UPCE	Vinklárek Jaromír, prof. Ing., Dr.

5.3 Publication and other creative activities

Data documenting the publication activities of the FChT in journals indexed in the Web of Science database and their concretisation in terms of journals with impact factors over the last five years are presented in the following tables.

Number of publications in journals indexed in the Web of Science					
Year	2019	2020	2021	2022	2023
Number of publications	225	209	211	183	189

Number of publications in journals with impact factors by quartile (FORD – AIS)					
Year	2019	2020	2021	2022	2023
Number of publications $J_{imp} - Q1$	58	51	61	49	61
Number of publications $J_{imp} - Q2$	87	106	105	105	101
Number of publications $J_{imp} - Q3$	53	33	31	20	20
Number of publications $J_{imp} - Q4$	33	12	10	6	4

The number of applied research results generated by the FChT over the last five years, including awarded patents, utility models, functional samples, prototypes, validated technologies and certified methodologies, is presented in the following table.

Number of results of applied research					
Year	2019	2020	2021	2022	2023
Number of results	33	29	29	21	21

An overview of selected publication and other creative activities of FChT in 2023 from the point of view of individual departments/institutes is presented in the following table.

Publication and other creative activities in 2023 by individual departments/institutes and groups of results				
Department/Institute	A1	A2	C	D
DAICh	35	-	-	-
DInT	7	-	-	-
DBBS	16	1	1	8
DEMCh	3	-	-	-
DPCh	25	-	-	-
DGInCh	39	1	1	3
DGAP	5	-	-	10
IAPM	11	-	-	-
JEnM	5	1	1	-
IEnviChE	16	-	-	4
ICHtMM	24	1	-	8
IOChT	24	-	-	8
JLSSch	7	-	-	-
CEMNAT	47	2	1	-

Legend:

- A1 Publications in a professional periodical included in the Web of Science database – J_{imp}
- A2 Publications in professional periodicals included in the SCOPUS database – J_{sc}
- C Monographs, selected chapters, study texts, lecture notes
- D Awarded patents, utility models, functional samples, prototypes, proven technologies and certified methodologies

5.4 Editorial activities

Specialist books

1. Klaban, V.: Ekologie a patogenita mikroorganismů: Biologické, biochemické a enviromentální souvislosti, 1st edition, 200 copies, 480 pages, ISBN: 978-80-7560-455-2.

Lecture notes and study texts

1. Jandera, P.: Atomová a molekulová spektroskopie se zaměřením na stopovou analýzu kontaminantů. Díl B. Molekulová spektroskopie v organické analýze, 3rd edition, reprint, 100 copies, 288 pages, ISBN: 978-80-7395-392-8.
2. Handlíř, K., Nádvořík, M., Vinklárek, J., Vlček, M.: Laboratorní cvičení z obecné a anorganické chemie II, 2nd edition, 200 copies, 68 pages, ISBN: 978-80-7560-460-6.
3. Kašparová, J., Pavlišta, M.: Matematika 1, 2nd revised edition, 200 copies, 132 pages, ISBN: 978-80-7560-473-6.

4. Hanusek, J., Šimůnek, P.: Základy organické syntézy, 3rd revised edition, 200 copies, 168 pages, ISBN: 978-80-7560-488-0.
5. Eisner, A., Bartoš, M., Švancara, I., Šrámková, J.: Laboratorní cvičení z analytické chemie, 5th revised edition, 300 copies, 96 pages, ISBN: 978-80-7560-484-2.
6. Kandřár, R.: Vybrané kapitoly z obecné biochemie, klinické biochemie a pathobiochemie I, 1st edition, 300 copies, 236 pages, ISBN: 978-80-7560-501-6.

Total of 1,300 copies and 784 pages of text.

Collections and proceedings

1. Scientific Papers of the University of Pardubice, Series A, Faculty of Chemical Technology, Volume 29 (2023), 15 x, ISBN: 978-80-7560-489-7, ISSN: 1211-5541.
2. LIV. seminář o tenzidech a detergentech, 60 x, ISBN: 978-80-7560-491-0.
3. VITATOX 2023 – Sborník příspěvků, 85 x, ISBN 978-80-7560-465-1.
4. Proceedings of the 25th International Seminar New Trends in Research of Energetic Materials, 30 x (ISBN: 978-80-7560-459-0) + 7 x CD-ROM (ISBN: 978-80-7560-458-3 (pdf)) + 200 x USB.
5. Sborník 25. konference o speciálních anorganických pigmentech a práškových materiálech, 38 x CD-ROM, ISBN: 978-80-7560-472-9 (pdf).
6. Sborník I. CoNFeReNCe: Rosteme s chemií, 83 x (ISBN 978-80-7560-461-3) + on-line (ISBN: 978-80-7560-462-0 (pdf)), available from: <https://eshop.upce.cz/epub?fakulta=fcht>.
7. Studentská vědecká odborná činnost 2022/2023 – Sborník abstraktů, on-line, ISBN: 978-80-7560-467-5 (pdf), available from: <https://eshop.upce.cz/epub?fakulta=fcht>.
8. 18th European Conference on Solid State Chemistry – Book of Abstracts, on-line, ISBN: 978-80-7560-420-0 (pdf). available from: <https://www.ecssc18.com/>.
9. 19th Conference on Thermoelectric - Book of Abstracts, on-line, ISBN 978-80-7560-478-1 (pdf), available from: <https://thermoelectric-conference.eu/news/40-book-of-abstracts-ect-2023>.

The FChT published a total of 9 titles with a total print run of 273 copies, 45 CD-ROMs and 200 USB drives.

6 COOPERATION WITH THE SPHERE OF PRACTICAL APPLICATION

6.1 Cooperation in educational and creative activities

Cooperation with the sphere of practical application in educational activities

Cooperation between the faculty and the sphere of practical application, especially with industrial enterprises, is permanently implemented in several forms. This was also the case in 2023.

Cooperation with the sphere of practical application in the field of educational activities was implemented by means of:

- internships for students of all forms of study in industrial enterprises and research institutions,
- excursions of students to manufacturing companies, research institutions and specialist workplaces,
- work experience by students (compulsory work experience set out in the study plan),
- membership of experts from the world of work in the Scientific Council of the FChT,
- membership of experts from the world of work in the specialist boards of doctoral study programmes,
- appointment of experts from the world of work to examination boards of state final examinations and appointment to dissertation defence committees,
- entrusting tuition to leading experts from the world of work, especially those parts of courses in which students are familiarised with real technological procedures and processes,
- one-off lectures by experts from the world of work for students at all levels of study.

Student internships in industrial companies were carried out in 2023 mainly in Synthesia, a.s., Pardubice and Výzkumný ústav organických syntéz, a.s., Pardubice. These internships give students an insight into a wider range of research and production. Students from the bachelor's degree programmes Analysis of Biological Materials and Graphic Arts as well as those from the master's degree programmes Analysis of Biological Materials, Bioanalytical Diagnostics in Medicine and Evaluation and Analysis of Foodstuffs also complete internships in other chemical and food processing companies, as well as in hospitals and medical facilities throughout the Czech Republic. Completion of internships increases student employability on the job market after successful completion of their studies.

Cooperation with the sphere of practical application in creative activities

The activity of joint laboratories continued in 2023:

- Joint Laboratory for Analysis and Evaluation of Polymers SYNPO, a.s., Pardubice and the University of Pardubice, Faculty of Chemical Technology (JLAP),
- Joint Laboratory of Membrane Processes MEGA, a.s., Stráž pod Ralskem and the University of Pardubice, Faculty of Chemical Technology (JLMP),
- Joint Laboratory of NMR Spectroscopy Výzkumný ústav organických syntéz a.s., Pardubice-Rybitví and the University of Pardubice, Faculty of Chemical Technology (JLNMR),
- Joint Laboratory of Applied Medical Science Pardubice Hospital, Pardubice and the University of Pardubice, Faculty of Chemical Technology (JLAM).

In this area it is necessary to emphasise cooperation between the faculty and industrial enterprises, research institutions and hospitals. It is not possible to list all of the partners with which individual faculty departments are involved in various projects, be this in the form of basic or applied research, implemented through joint research teams and complementary activities. There is however no doubt that this form of cooperation in resolving current problems in industrial and application practice contributes, among other things, towards development of scientific research at the faculty and towards the education of students and therefore attention must be dedicated to it.

Overview of cooperating entities

An overview of the entities with which the FChT cooperated in 2023 on TACR projects, projects of ministerial providers of support and contractual research projects is given in the following tables.

Cooperating organisations for TACR projects	
3Dees Industries s.r.o., Prague	Moravian-Silesian Automotive Cluster, z.s., Ostrava
Argotech a.s., Trutnov	NANOPROGRESS, z.s., Pardubice
ARIA PURA s.r.o., Prague	NETWORK GROUP s.r.o., Brno
ASIO TECH, spol. s r.o., Brno	ORLEN UniCRE, a.s., Litvínov
BD SENSORS s.r.o., Buchlovice	PHYSTER TECHNOLOGY, a.s., Prague
Callidtas, s.r.o., Podsedice	Plastics Cluster, z.s., Zlín
Central Glass Czech, s.r.o., Prague	Prokyber s.r.o., Kladno
Center for Organic Chemistry s.r.o., Rybitví	Simple Engineering s.r.o., Ústí nad Labem
Columbia press, a.s., Kolín	Chemical Industry Association of the Czech Republic, z.s., Prague
Continental Automotive Czech Republic s.r.o., Jičín	Synpo, a.s., Pardubice
Czech Technical University in Prague, Prague	Tech Aid Czech Brand s.r.o., Blansko
ELCERAM a.s., Hradec Králové	TERAMED, s.r.o., Prague
Ethanol Energy, a.s., Vrdy	TESLA BLATNÁ, a.s., Blatná
Fortemix Production s.r.o., Ostrava	Jan Evangelista Purkyně University in Ústí nad Labem, Ústí nad Labem
FORTES Interactive, s.r.o., Brno	Palacký University in Olomouc, Olomouc
HELLA AUTOTECHNIK NOVA, s.r.o., Mohelnice	Tomáš Baťa University in Zlín, Zlín
I N O T E X spol. s r.o., Dvůr Králové nad Labem	Institute of Macromolecular Chemistry, Czech Academy of Sciences, v.v.i., Prague
Institute of Microelectronic Applications s.r.o., Prague	UVB TECHNIK s.r.o., Hlučín
IPMA Czech Republic, z.s., Prague	VS – Technical University of Ostrava, Ostrava
South Bohemian University in České Budějovice, České Budějovice	University of Chemistry and Technology, Prague
Katchem, spol. s r.o., Kralupy nad Vltavou	Brno University of Technology, Brno
MAGICWARE s.r.o., Prague	XGLU s.r.o., České Velenice
Masaryk University, Brno	University of West Bohemia in Pilsen, Pilsen
MDT-Medical Data Transfer, s.r.o., Brno	Zlín Creative Cluster, z.s., Zlín
MICRORISC s.r.o., Jičín	ZODPA, s.r.o., Prague

Cooperating organizations in the implementation of sectoral projects
D-TECHNIK a.s., Jablůnka
Faculty Hospital Hradec Králové, Hradec Králové
Faculty Hospital Olomouc, Olomouc
MedicProgress, a.s., Hněvotín
National Gallery, Prague
Palacký University in Olomouc, Olomouc
General Faculty Hospital in Prague, Prague

Cooperating organisations for contractual research projects
BIOPHARM, Research Institute of Biopharmacy and Veterinary Medicines a.s., Jílové u Prahy
DEMCAK, s.r.o., Lázně Bohdaneč
ECOCOAL, s.r.o., Ostrava – Mariánské Hory
Innovative Sensor Technology, s.r.o., Rožnov pod Radhoštěm
LACHEPRA, s.r.o., Pardubice
Magna Exteriors (Bohemia) s.r.o., Liberec
OZM Research s.r.o., Blížňovice
Pyrotechnical Service s.r.o., Stará Bělá
ŠKODA AUTO, a.s., Mladá Boleslav
TE Connectivity Trutnov s.r.o., Trutnov
Temperatiior, s.r.o., Liberec

Cooperation was also developed with a number of other entities, e.g. the following.

Other cooperating organisations
American Society for Mass Spectrometry
American Vacuum Society
Association of the Paper and Pulp Industry
Central Polytechnic Workshops
Czech Herpetological Society
Czech Immunological Society
Czech Medical Association of J. E. Purkyně, Czech Society of Clinical Biochemistry
Czech Membrane Platform
Czech Glass Society
Czech Anthropological Society
Czech Chemical Society
Czech Society of Chemical Engineering
Czech Society for Biochemistry and Molecular Biology
Czech Society for New Materials and Technologies
Czech Society of Industrial Chemistry
Czechoslovak Microscopy Society
Czechoslovak Society for Microbiology
Czechoslovak Association for Crystal Growth
Czech Battery Cluster
Electrochemical Society
Eurachem-Czech Republic
European Federation of Chemical Engineering, Working Party on Membranes
European Membrane Society
European Microscopy Society
European Thermoelectric Society
FATIPEC
Hi-Tech Innovation Cluster
International Adsorption Society
International Association of Research Organizations for the Information, Media and Graphic Arts Industries
International Circle of Educational Institutes for Graphic Media Technologies and Management
International Confederation for Thermal Analysis and Calorimetry
International Lipidomics Society
International Polymer Colloids Group
International Project Management Association Czech Republic
International Society of Electrochemistry
International Zeolite Association
Union of Czech Mathematicians and Physicists
Regional Innovation Council of the Pardubice Region
Materials Research Society
Optical Society
Jan Marek Marci Spectroscopy Society
Czech Association for Blasting Techniques and Pyrotechnics
Association of the Pulp and Paper Industry
Czech Association of Textile Chemists and Colourists

6.2 Important professional events

A number of interesting and socially beneficial events took place at the FChT in 2023. These include the following.

18th Annual RANK Conference

The conference serves as a forum for sharing practical knowledge and experiences primarily from the routine analysis of both human and extrahuman genomes. It has become a traditional meeting for Czech and Slovak experts in the field of nucleic acid analysis using molecular biology techniques.

Organizer: Department of Biological and Biochemical Sciences

Date: 20 - 21 March, 2023

25th International Seminar “New Trends in Research of Energetic Materials”

A seminar on new trends in the research of energetic materials, which is a global gathering primarily for young professionals and university teachers working in the fields of education, research, development, processing, analysis, and applications of all types of energetic materials.

Organizer: Institute of Energetic Materials

Date: 19 - 21 April, 2023

10th International Conference on Chemical Technology ICCT 2023

A conference focused on innovations and interesting developments in chemical and pharmaceutical technologies, considering the principles of the Green Deal and decarbonization. The goal of the conference is to create a space for international cooperation between businesses, universities, and research institutions.

Organizer: Czech Society for Industrial Chemistry, Faculty of Chemical Technology, UPCE

Date: 24 - 26 April, 2023

43rd International Czech and Slovak Calorimetry Seminar

A seminar dedicated to the use of calorimetric methods and thermal analysis methods in various fields, from both research and practical perspectives.

Organizer: Department of General and Inorganic Chemistry, Joint Laboratory of Solid-State Chemistry

Date: 22 - 25 May, 2023

Inorganic Pigments: Synthesis, Characterization, and Identification in Artistic Creation

A workshop dedicated to inorganic pigments, exploring their synthesis and evaluation. Presentations focused on the challenges of synthesizing pigments based on preserved historical sources. Specialized analytical methods for identifying pigment phases in artistic creation were also presented.

Organizer: Department of Inorganic Technology, National Gallery Prague, Criminalistics Institute of the Czech Police

Date: 23 May, 2023

IX. Pharmacokinetic Seminar

A seminar aimed at students and professionals focused on dissolution and dissolution testing.

Organizer: Department of Physical Chemistry

Date: 21 - 22 June, 2023

18th European Conference on Solid State Chemistry “ECSSC 2023”

The conference is dedicated to solid-state research, focusing on the synthesis, design, and development of solid functional materials with extended structures and interesting chemical or physical properties.

Organizer: Department of General and Inorganic Chemistry, Centre of Materials and Nanotechnologies

Date: 9 - 12 July, 2023

Membrane Processes for Sustainable Development “MEMPUR 2023”

A conference aimed at addressing the issues of membrane processes from basic to applied research, up to the implementation phase of membrane applications used in almost all areas of human activity and in industrial sectors.

Organizer: Institute of Environmental and Chemical Engineering, Czech Membrane Platform, z.s.

Date: 4 - 6 September, 2023

19th European Conference on Thermoelectric

A conference dedicated to the development of traditional and new thermoelectric materials from macro to nano scale, theoretical modeling, design of new devices, and applications in cooling and energy production.

Organizer: Institute of Applied Physics and Mathematics, Physics Institute of the Czech Academy of Sciences

Date: 17 - 21 September, 2023

24th CSIP-PM: Conference on Special Inorganic Pigments and Powder Materials

The conference focuses on the exchange of new knowledge in the field of powder materials and inorganic pigments, their applications, physicochemical properties, and methods of evaluation or ecological aspects of production.

Organizer: Department of Inorganic Technology

Date: 20 September, 2023

XVI. Conference on Pigments and Binders

The conference on pigments and binders is a professional international event. It deals with the production of coatings, surface treatments, and their further applications. It is a meeting place for representatives of manufacturing companies, research and development organizations, universities, and commercial firms.

Organizer: Institute of Chemistry and Technology of Macromolecular Substances, Department of Coatings and Organic Coatings, CHEMAGAZÍN

Date: 6 - 7 November, 2023

54th Seminar on Surfactants and Detergents

A seminar for those interested in research in the production, analysis, and application of surfactants.

Organizer: Department of Analytical Chemistry

Date: 8 - 10 November, 2023

55th National Colorist Conference – TEXCHEM

A conference focused on the latest trends and innovations in the textile industry, including sustainability and the circular economy.

Organizer: Association of Textile Chemists and Colorists at the University of Pardubice

Date: 9 - 10 November, 2023

17th Karel Vytřas Seminar on Sensing in Electroanalysis

A meeting of international project leaders dedicated to presenting research results in the field of electroanalysis and discussing prospects for further cooperation.

Organizer: Department of Analytical Chemistry

Date: 13 - 17 November, 2023

7 SPATIAL CAPACITY AND INFORMATION AND COMMUNICATION TECHNOLOGIES

7.1 Spatial capacity and sites

The Faculty of Chemical Technology is located in Pardubice – at Stavařov, Studentská 573. This site is home to the dean's office and the HA, HB and HC buildings house lecture halls, classrooms, laboratories and offices for staff and students of doctoral degree programmes. Other faculty sites are located at Stavařov, Studentská 84 (building EA), in the Technology Pavilion in Doubravice, Doubravice 41 and in the town centre at Čs. legion 565.

The faculty has three large-capacity lecture halls on the na Stavařově campus. These are lecture hall C1 with capacity to accommodate 234 people, lecture hall C2 with capacity to accommodate 99 people and lecture hall C3 with capacity to accommodate 55 people.

An important part of the faculty's spatial capacities is constituted by laboratories, which comprise 52 rooms with capacity to accommodate 920 people. The faculty also has 27 classrooms with capacity to accommodate 787 people and 7 computer rooms with capacity to accommodate 153 people.

7.2 Information and communication technologies

The information and communication systems of the Faculty of Chemical Technology are part of the complex system of information and communication technologies of the University of Pardubice. They are used both for teaching and scientific research activities, but also within the framework of the operational and management activities of the faculty.

The faculty's information infrastructure consists of computer rooms including the relevant technical equipment, personal computers and other computer and office equipment used by faculty staff and students of doctoral study programmes, audio-visual and presentation equipment, including interactive whiteboards, and software.

The Faculty of Chemical Technology uses information systems operated by the Centre of Information Technologies and Services (CITS) of the University of Pardubice, as well as funding access to a range of commercial products from major technology companies. The key systems operated by CITS and used by students and faculty staff include the following systems:

- STAG – a study programme management system,
- iFIS – an economic information system, which includes modules such as economic management, a filing system, a public procurement management system and a register of contracts,
- VERSO – an information system with modules: management information system, IPOS internal enquiry and ordering system, orders, liquidation lists, contract register, grants and projects, travel orders and room reservations,
- OBD – an information system including a module for recording publication activity and an internal grant competition module.

All students and employees of the university also have the opportunity to use Microsoft Office 365 cloud services within the framework of the Microsoft Campus Agreement. They have a complete suite

of Office applications at their disposal including Word, Excel, PowerPoint, OneNote, Outlook, Teams, Access and Publisher. An internet connection and services of the national e-infrastructure for science, research and education CESNET are provided. Students and employees can also use the Eduroam wireless data network which is available throughout the campus.

In the current period, the Faculty of Chemical Technology also has more than 250 software licenses which entitle it to use software in various areas of its teaching and scientific research activities.

8 QUALITY ASSURANCE AND EVALUATION OF IMPLEMENTATION ACTIVITIES

8.1 Internal system of control and evaluation

Control and evaluation of activities is performed on a regular basis at the FChT, both on the level of the faculty and also on the level of individual departments. This includes areas of educational and research activities as well as the third role of the faculty. The faculty's own operational activities are also subject to internal control and evaluation. Internal control and evaluation activities were also performed in 2023, mainly in the following areas.

Control and evaluation of academic staff

All academic staff at the faculty were subjected to an annual evaluation from the point of view of the following criteria:

Teaching activities:

- teaching: lectures - exercises - seminars – laboratory work,
- supervision of diploma and bachelor theses, supervision of doctoral students,
- developed teaching aids, curricula, laboratory tasks, laboratory building,
- teaching positions at other universities (faculties),

Research activities:

- publications published in the past year,
- participation in conferences,
- grants, technology projects, complementary activities,
- foreign stays and trips,
- positions and membership in scientific and professional boards and committees,

Other activities:

- organisational activity,
- enhancing qualifications,
- promotion, popularisation of science and research, education and cooperation with the world of work,
- other activity worthy of consideration.

Control and evaluation of the quality of educational activities

Pedagogical issues are regularly discussed by the Board of Study Programme of the FChT and this was also the case in 2023. Evaluation of teaching was also performed by students via the IS STP, which was organised on a university-wide platform.

Control and evaluation of excellence

Evaluation was also performed in 2023 of excellent scientific teams in basic and applied research, in particular with regard to:

- implementation of research projects,
- publishing activity,
- recognition by the international community,
- management of the research team,

- resolution of specialist problems in applied research,
- commercialisation of the results of applied research.

In all cases, emphasis was placed on the quality of activities, e.g. taking into account the results of evaluation of research organisations.

8.2 External control

The most important element of external control of the University of Pardubice and its Faculty of Chemical Technology is undoubtedly evaluation performed by the National Accreditation Bureau for Higher Education within the framework of application for institutional accreditation of the University of Pardubice, which took place in 2018. The Faculty of Chemical Technology actively participated in preparation of institutional accreditation for the fields of education Chemistry, Economics and Health Studies. On 7 September 2018, the decision granting the University of Pardubice institutional accreditation for 10 years came into force for:

- the field of education Transport and within the framework of this, bachelor's, master's and doctoral degree programmes,
- the field of education Economics and within the framework of this, bachelor's, master's and doctoral degree programmes,
- the field of education Historical Sciences and within the framework of this, bachelor's, master's and doctoral degree programmes,
- the field of education Chemistry and within the framework of this, bachelor's, master's and doctoral degree programmes,
- the field of education Information Technology and within the framework of this, bachelor's, master's and doctoral degree programmes,
- the field of education Health Studies and within the framework of this, bachelor's and master's degree programmes.

Institutional accreditation within the framework of the above-mentioned fields of education enables the University of Pardubice, via the Internal Evaluation Board (IAB) of the University of Pardubice, to implement internal processes leading to the acquisition, extension or renewal of accreditation. The Faculty of Chemical Technology was represented in the IAB in 2023 by prof. Ing. Petr Kalenda, CSc. The IAB has three expert committees: the Technical and Science Committee, the Economic and Health Studies Committee and the Humanities and Arts Committee. The FChT was represented in 2023 in the Technical and Science Committee by its Chair (prof. Ing. Petr Kalenda, CSc.) and five of its members (doc. Ing. Pavel Čičmanec, Ph.D.; prof. Ing. Petr Mikulášek, CSc.; prof. Ing. Petr Němec, Ph.D.; prof. Ing. Miloš Sedlák, DrSc.; prof. Ing. Petra Šulcová, Ph.D.). Prof. Ing. Hana Lošťáková, CSc., prof. Ing. Liběna Tetřevová, Ph.D. and Ing. Jan Vávra, Ph.D. represented the FChT in the IAB Economic Committee in 2023. The representative of the faculty in the Health, Humanities, and Arts Committee of the Internal Evaluation Board in 2023 was Associate Professor RNDr. Tomáš Roušar, Ph.D.

In addition to this, the professional guarantee of the course and quality of studies in doctoral study programmes is monitored and evaluated by specialist boards which are established for each doctoral study programme separately.

With regard to the external control of science and research results, M17+ Methodology for Evaluating Research Organisations and Research, Development and Innovation Purpose-tied Aid Programmes has been gradually introduced since 2017. The methodology applied during evaluation by the Research, Development and Innovation Council is available at: <http://www.vyzkum.cz/>.

ABBREVIATIONS USED

ACA	Academics
AIS	Article Influence Score
Bc.	Bachelor's degree programme, title
BUT	Brno University of Technology
CAS	Czech Academy of Sciences
CCFE	Classification of core fields of education
CEEPUS	Central European Exchange Programme for University Studies
CEMNAT	Centre of Materials and Nanotechnologies
CITS	Centre for information technologies and services
CR	Czech Republic
CU	Charles University in Prague
DAICh	Department of Analytical Chemistry
DBBS	Department of Biological and Biochemical Sciences
DEMCh	Department of Economics and Management of Chemical and Food Industry
DGAP	Department of Graphic Arts and Photophysics
DGICh	Department of General and Inorganic Chemistry
DIInT	Department of Inorganic Technology
DPCh	Department of Physical Chemistry
ECTS	European Credit Transfer System
EEA	European Economic Area
ERC	European Research Council
EU	European Union
F	Foreigner – foreign student
FChT	Faculty of Chemical Technology
FORD	Fields of Research and Development
GACR	Czech Science Foundation
IEB	Internal Evaluation Board
IAPM	Institute of Applied Physics and Mathematics
ICHtMM	Institute of Chemistry and Technology of Macromolecular Materials
IEnM	Institute of Energetic Materials
IEnvChE	Institute of Environmental and Chemical Engineering
iFIS	Economic information system
INP	Individual national project
IOChT	Institute of Organic Chemistry and Technology
IS STP	Information system for management of study programmes
JEPU	J. E. Purkyně University in Ústí nad Labem
JLAM	Joint Laboratory of Applied Medical Science
JLAP	Joint Laboratory of Analysis and Evaluation of Polymers
JLMP	Joint Laboratory of Membrane Processes
JLSSCh	Joint Laboratory of Solid State Chemistry

MF	Ministry of Finance
MIT	Ministry of Industry and Trade
MEYS	Ministry of Education, Youth and Sports
MI	Ministry of the Interior
MH	Ministry of Health
Mgr.	Master's degree programme
OBD	Information system including a module for recording publication activity and an internal grant competition module
OP RDE	Operation Programme Research, Development and Education
Ph.D.	Doctoral degree programme, title
p.r.i.	Public research institution
R&D&I	Research, experimental development and innovation
RES	Researchers
SGC	Student grant competition
SP	Study programme
SRD	Scientific, research and development (staff)
SRPA	Student Research and Professional Activities
STP	see IS STP
TACR	Technology Agency of the Czech Republic
TBU	Tomáš Baťa University in Zlín
TUO	Technical University of Ostrava
U3A	University of the Third Age
UCHT	University of Chemistry and Technology in Prague
UPCE	University of Pardubice
VERSO	Information system
WoS	Web of Science



The Annual Activity Report of the Faculty of Chemical Technology at the University of Pardubice was approved by the Academic Senate of the Faculty of Chemical Technology on 15 May 2024.

