

**Josip Juraj Strossmayer University of Osijek**  
**Faculty of Food Technology Osijek**

---

**STRATEGIC PROGRAMME OF SCIENTIFIC RESEARCH OF THE  
FACULTY OF FOOD TECHNOLOGY OSIJEK OF THE UNIVERSTIY OF OSIJEK  
FOR THE PERIOD 2022 – 2026**

**PTE**  
OS

**Osijek, December 2021**

The Faculty Management and the Science Board of the Faculty developed the Strategic Programme of Scientific Research of the Faculty of Food Technology Osijek at the University of Osijek for the period 2022 – 2026:

prof. dr. sc. Jurislav Babić,  
prof. dr. sc. Daniela Čačić Kenjerić,  
prof. dr. sc. Đurđica Ačkar,  
prof. dr. sc. Stela Jokić,  
prof. dr. sc. Maja Molnar,  
Janja Perić, dipl. iur.,  
prof. dr. sc. Lidija Jakobek Barron,  
prof. dr. sc. Mirela Kopjar,  
izv. prof. dr. sc. Natalija Velić.

Sanda Hasenay made the analysis of the scientific potential. Along with the Management and the Board, all members of the Faculty Council of The Faculty of Food Technology Osijek at the University of Osijek participated in making the document through their comments.

The Strategic Programme of Scientific Research of the Faculty of Food Technology Osijek of the University of Osijek for the period 2022 – 2026 was adopted at the Session Nr 3 of the Faculty Council in the academic year 2021/2022, held on December 21<sup>st</sup> 2021.

## Content

1. Introduction.....	1
2. Mission of the Faculty of Food Technology Osijek .....	1
3. Vision of the Faculty of Food Technology Osijek.....	2
4. Analysis of the scientific potential of the Faculty of Food Technology Osijek .....	3
5. Compliance with European and national strategic documents .....	9
6. SWOT analysis .....	9
7. Priority disciplines and themes of research.....	11
8. Strategic goals of scientific activities for the period 2022 – 2026:.....	13
GOAL 1: To strengthen research capacities in the field of biotechnical sciences (especially in the fields of nutrition and biotechnology), natural sciences - the field of chemistry, and technical sciences - the field of chemical engineering, and establish new research areas in the field of biomedicine and healthcare - pharmacy.....	13
GOAL 2: To accredit the Faculty in the field of natural sciences (field: chemistry) .....	14
GOAL 3: To accredit the Faculty in the field of technical sciences (field: chemical engineering) .....	14
GOAL 5: To strengthen the transfer of knowledge to the economy sector .....	15
9. Expected outcomes of the strategic program of scientific research 2022 - 2026 .....	15
10. Plan of organisational development.....	16
11. Indicators of the success of the implementation of the strategic program of scientific research for the period 2022 – 2026.....	17
GOAL 1: To strengthen research capacities in the field of biotechnical sciences (especially in the fields of nutrition and biotechnology), natural sciences - the field of chemistry, and technical sciences - the field of chemical engineering, and establish new research areas in the field of biomedicine and healthcare - pharmacy.....	17
GOAL 2: To accredit the Faculty in the field of natural sciences (field: chemistry) .....	20
GOAL 3: To accredit the Faculty in the field of technical sciences (field: chemical engineering) .....	20
GOAL 5: To strengthen the transfer of knowledge to the economy sector .....	22



## **1. Introduction**

The history of the Faculty of Food Technology Osijek (in the following text: Faculty) began in 1970, when the Food Technology Department was founded at Higher Agricultural School, which evolved into Faculty of Agriculture and Food Technology in 1971. Since 1876 Faculty is independent and has been developing continually, despite the crisis during the Croatian War of Independence, during which the Faculty was exiled to different locations in Osijek.

Today, Faculty is the institution of higher education and scientific research, with purpose of educating future staff through study programmes at pre-graduate, graduate and post-graduate level contributing to the prosperity of the community. In addition, Faculty has different programmes of life-long courses and specialist studies. All types and levels of education are based on modern teaching methods and learning outcomes, as well as current scientific knowledge.

In the future, the Faculty plans to broaden the activities to the scientific disciplines of chemistry, chemical engineering and pharmacy solidifying the impact on the society.

Faculty is still in the inadequate facilities, located in the historic part Tvrđa, adapted to the needs, but with insufficient laboratory space for scientific research and the lack of amphitheatre for large study groups.

Despite all hardships, the Faculty is among the most successful University units and continually improves quality and working conditions.

## **2. Mission of the Faculty of Food Technology Osijek**

The mission of the Faculty of Food Technology at the Josip Juraj Strossmayer University in Osijek is to develop and spread nationally and internationally recognized excellence in education and research in the field of biotechnical, technical and natural sciences. The Faculty also works on the knowledge transfer and its application for the benefit and prosperity of every section of society. The Faculty provides student and teacher mobility, rational usage of human and material resources, supervision and constant quality enhancement, competitiveness, and international competitiveness with regard to teaching and scientific work. To achieve this mission the Faculty has a permanent development strategy based on the excellence of scientific, teaching and professional work.

The Mission of the Faculty is fully determined by:

1. Sphere of activities of the Faculty,
2. Positive European trends in the development of higher education and

3. Current and future legislation in the Republic of Croatia, at the University and the Faculty.

In line with contemporary recognition of the higher education position, the Faculty has the following sphere of activities:

- a) Teaching – education of competent professionals at all study levels and through different life-long educations,
- b) Scientific research – activities within scientific projects, that bring up the general and specific knowledge in the spheres of the Faculty,
- c) Professional activities – research within professional projects and successful transfer of the novel scientific knowledge into the corporate sector, and the area of common interest,
- d) Communal service – activities targeting raising public awareness of the position and the role of the profession, current challenges and achievements in the scientific, teaching and professional fields.

### **3. Vision of the Faculty of Food Technology Osijek**

The vision of the Faculty of Food Technology at the Josip Juraj Strossmayer University in Osijek is to be an elite scientific and educational institution in Croatia, focused on internationally recognized scientific, development and technical research in the area of biotechnology, technical and natural sciences, adjusted to the European Higher Education Area and the European Research Area. The Faculty will continue to educate internationally acknowledged competent and high quality experts, and it will carry out internationally acknowledged scientific and technical researches and provide support to economic development. The Faculty aims at being recognized by its excellence becoming thus a desirable institution of higher education, a reliable business partner for domestic and international scientific and educational institutions and students. To achieve these goals, the Faculty will cooperate with national and international partners in the area of education and economy, providing permanent supervision and quality enhancement , and competitiveness of its curriculum, scientific and technical work.

## **4. Analysis of the scientific potential of the Faculty of Food Technology Osijek**

In addition to teaching in higher education, scientists and young researchers have been actively participating in domestic and international scientific and professional projects. During the past five years, five projects funded through EU structure funds, nine scientific projects financed by Croatian Science Foundation, two by Adris Foundation, seven bilateral and six University projects have been implemented.

In 2015 scientific centre of excellence: SCE for Bioprospecting of the Adriatic sea – BioProCro was founded. The holder is the RUđer Bošković Institute and the Faculty is partner. Additionally, employees of the Faculty are involved in the activities of the Scientific interdisciplinary centre of excellence for personalised healthcare, in the field of biotechnical and biomedical sciences.

### *Scientific papers*

According to Croatian Bibliography (CROSBİ), teachers, researchers and students of the Faculty published 610 papers indexed in different scientific databases (Web of Science Core Collection, Current Contents Connect, CAB Abstract, Food Science and Technology Abstract etc.) in the period January 1<sup>st</sup> 2017 – October 31<sup>st</sup> 2021. 318 papers belong to the highest category (a1) according to the Ordinance on the election to the scientific titles, 82 are in the a2 category, 23 are “other papers”, 67 reviewed papers from national and international conferences, 26 professional papers, one authored book, 61 book chapters, 32 edited books. Total citation of papers indexed in WoS CC is 10702 (9856, excluding self-citations), and h-index is 48.

The analysis of dynamics of the development of the scientific research at the Faculty depicts significant increase of the number of publications in WoS CC database in the past five years (Figure 1)

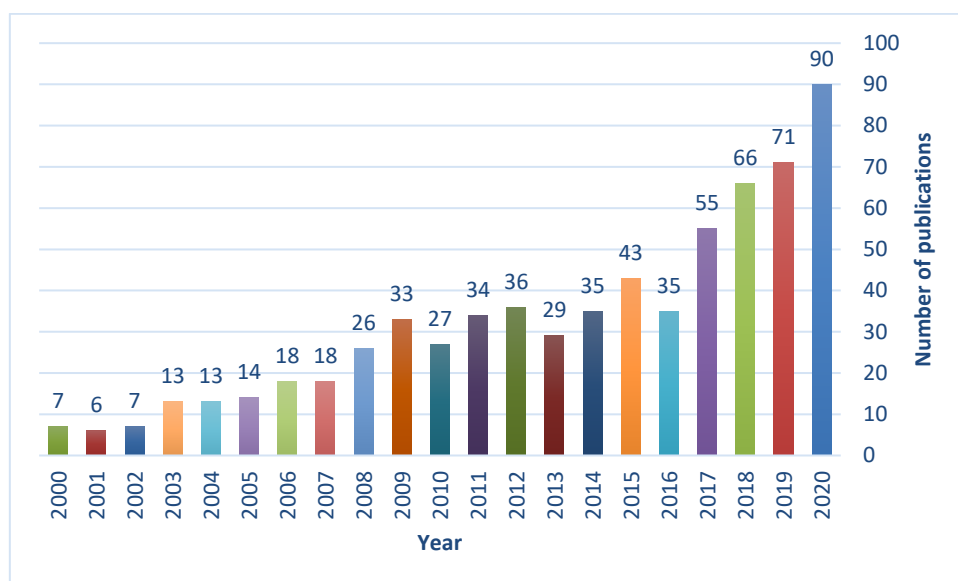


Figure 1. Number of publications affiliated to the Faculty, indexed in citation indices WoS CC (“Analyze Results” n.d.)

In addition, analysis of centrality indices of the scientific categories showed tight connection of research conducted at the Faculty to chemistry, engineering, agriculture, environment, food science and technology.

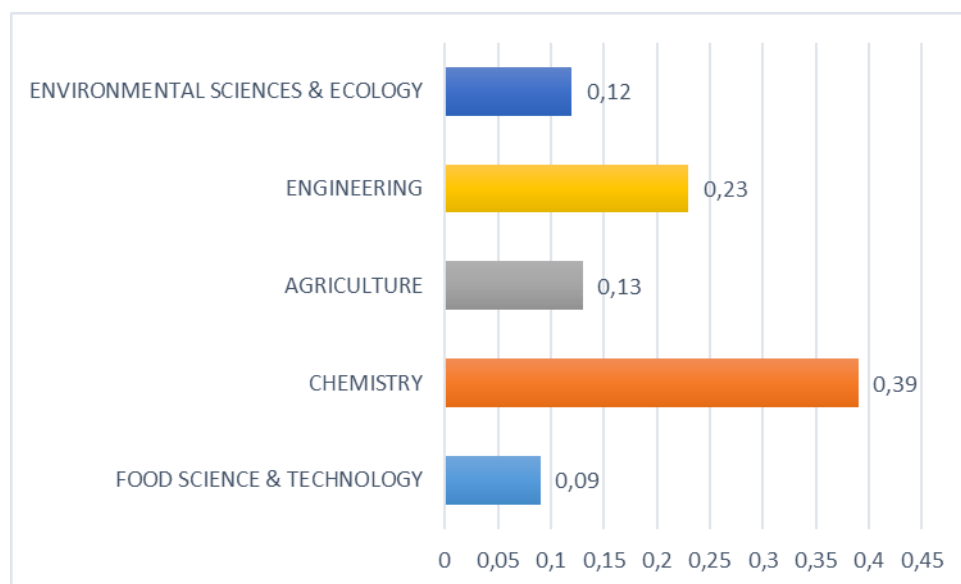


Figure 2. Centrality indices of five research fields

The time-related cluster analysis (Figure 3) indicates integration of papers in the field of food technology and other research fields. The protruding node threads show conjunction in the fields. The timeline shows that the novel research combines engineering and computer science, methods and theory of engineering, establishing completely new link.



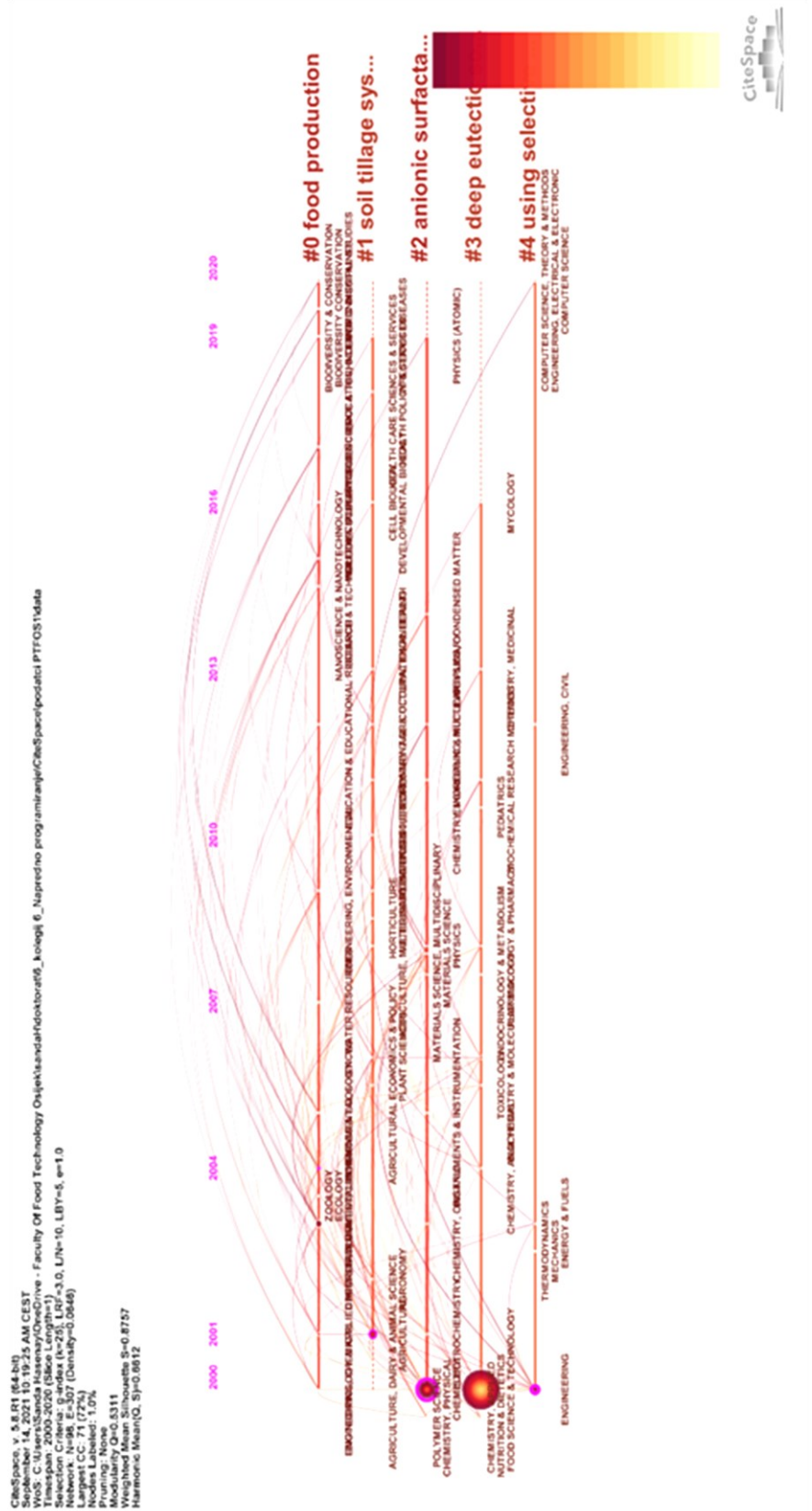


Figure 3. Network of cooperation shown through timeline of published research of Faculty scientists according to the WoS categories.

### Inter-institutional and international cooperation

Apart from inter- and multidisciplinary character of the research at the Faculty, publications show growth of inter-institutional and international cooperation of Faculty employees (Figure 4). The tightest collaboration, as expected, is with scientists from Croatia (1.15), followed by Czech Republic (0.12), Bulgaria (0.08), Serbia (0.05) and Germany (0.04). although a significant number of publications came out of cooperation with Bosnia and Herzegovina (44 papers), Slovenia (25 papers), USA (19 papers), Nigeria (8 papers), centrality parameter is zero, depicting that the intensity of cooperation is not significant.

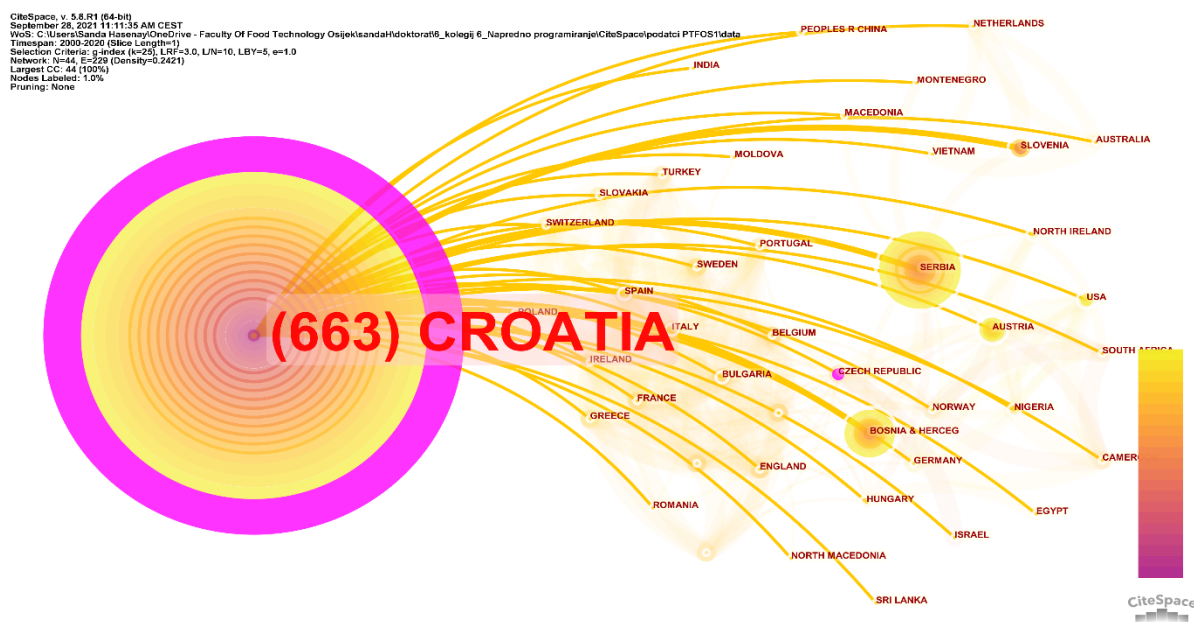


Figure 4. Visualization of collaboration network between the Faculty and scientists abroad

Up until 2010 collaboration with international scientists had targeted food technology, nutrition, ecology and agronomy, and from 2013, along with these, research has focused on chemical engineering and ecology as well.

### Mentorship of PhD theses

Within past five years (2017 – 2021), 15 PhD dissertations have been defended under mentorship or co-mentorship of Faculty teaching staff, out of which 5 PhD students have been employed at the Faculty.

Currently, 18 PhD students (6 teaching assistants and 12 researchers at scientific projects), mentored by Faculty members, are employed at the Faculty.

### *International and domestic conferences; Journal*

The Faculty has been organizer or co-organizer of many international and domestic scientific and professional conferences, with active participation of employees both through presentations and organizational activities. The organization of scientific conferences is one of the essential segments of promotion of science and profession, and the Faculty itself. Therefore, the Faculty will continue organizing international conferences “Flour-Bread”, “Ružička Days”, “Water for All”, “With Food to Health”, “Food Industry By-products”, “Student Green Conference”, “Congress on beekeeping and bee products”, and the domestic conference “Young Scientists’ Day”, taking care of including young scientists in the organization.

In 2012 the Faculty joined international organizations *European Hygienic Engineering & Design Group (EHEDG)* and *ISEKI Food Association (IFA)*. In 2008 scientific-professional journal ***Croatian Journal of Food Science and Technology*** was launched, and since 2010 it has been indexed in CAB Abstracts database, FSTA (Food Science and Technology Abstract) database, EBSCO Publishing, Inc. Database, Portal of Croatian Scientific Journals (HRČAK), Directory of Research Journals Indexing, Science Library Index database, Google Scholar, Directory of Open Access Journals (DOAJ), OpenAIRE, Genamics Journal Seek, Base Biofield Academic Search Engine, Directory Indexing of International Research Journals, International Innovative Journal Impact Factor (IIJIF) and J-Gate. The Faculty is a co-publisher of the scientific-professional journal ***Food in Health and Disease***, published by Faculty of Pharmacy at the University of Tuzla (B&H).

Different research groups are increasingly collaborating within the Faculty, and in inter-institutional (collaborative) and interdisciplinary research, yielding increased participation in international projects.

### *Transfer of scientific knowledge to industry (Academia – Industry Link)*

Within past five years (2017 – 2021), scientists of the Faculty have implemented scientific knowledge to elevate economy through more than 50 professional projects and a large number of technological studies. Some projects yielded new products, successfully introduced in the market, and the significant effort of the Faculty is put into standardization of numerous domestic products.

To intensify cooperation of the Faculty with the industry, the following units are established:

- CERT-ING, with the purpose of gaining and developing scientific and professional research, publishing, advisory activities etc.;

- Centre for Meat Quality (CMQ), as a part of CET-ING, conducts research on the technology and quality of traditional meat products, laboratory analyses for the traditional producers, education and advising regarding traditional meat production;
- Laboratory for wine analysis, founded and equipped through two international projects (“SeeNet II” and “INNOWINE”) in collaboration with the Italian Development Agency INFORMEST Region Friuli Venezia Giulia, Udine University and Osijek-Baranja County, with operational support of Regional Development Agency of Slavonia and Baranja County;
- Laboratory for honey quality and other bee products, equipped through IPA project HR-SRB Pannonian bee.

ALUMNI, the Association of former students and friends of the Faculty of Food Technology Osijek (shorted TehnOS) is also significant for the link of the Faculty with the economy.

#### *Awards*

Within past five years, the scientists of the Faculty have been awarded a number of awards:

- National Science Award – annual award for scientific achievements,
- National science Award – for popularization of science,
- Danubius Young Scientist Award – awarded by the Austrian Federal Ministry for Education, Science and Research (BMBWF) and the Institute for the Danube Region and Central Europe (IDM),
- Award of Croatian Academy of Engineering “Rikard Podhorsky”,
- Award of Croatian Academy of Engineering “Vera Johanides”,
- Croatian Microbiological Society Annual Award to young scientists,
- Osijek-Baranja County award,
- City of Osijek Award – Golden Plaque “Coat of Arms of the City of Osijek”

Faculty also awards scientific, teaching and professional achievements annually (to teachers, assistants and non-teaching employees, and to students for sports achievements), as defined in the Ordinance on recognitions and awards (<http://www.ptfos.unios.hr/index.php/dokumenti>).

## **5. Compliance with European and national strategic documents**

Strategic programme of the scientific research is based on the Strategy of Development of Faculty of Food Technology for period 2017/2018 – 2021/2022, adopted at 4<sup>th</sup> regular session of the Faculty Council in the academic year 2017/2018, held on January 30<sup>th</sup> 2018 <http://www.ptfos.unios.hr/index.php/dokumenti> and upon recommendations of the Reaccreditation Council, given during the reaccreditation process held from December 3<sup>rd</sup> – 5<sup>th</sup> 2019 (Report, AZVO, 2020).

Furthermore, the Programme is aligned with following strategic documents:

- EU Strategic Plan 2020 – 2024 (Research and Innovation),
- National Development Strategy of the Republic of Croatia up to 2030,
- Strategy of Education, Science and Technology of the Republic of Croatia (higher education),
- Strategic Plan of Ministry of Science and Education for the period 2020 – 2022,
- Smart Specialization Strategy of the Republic of Croatia,
- Plan of Development of Research Infrastructure in the Republic of Croatia,
- Strategy of Josip Juraj Strossmayer University of Osijek 2021 – 20230.

## **6. SWOT analysis**

Identification and analysis of strengths, opportunities, weaknesses and threats of internal and external origin is necessary for the easier determination of tasks needed to achieve strategic goals, and to evaluate the feasibility of the Strategic Plan.

INTERNAL FACTORS	
S - STRENGTHS	<ul style="list-style-type: none"> <li>• long-term experience in higher education, scientific and professional research</li> <li>• productive scientific activity as the foundation of teaching activities</li> <li>• potential for interdisciplinary research</li> <li>• experience of the research groups in the application and realization of projects funded by EU and Croatian Science Foundation</li> <li>• continuous increase of funds for scientific research and purchase of equipment</li> <li>• young teaching and scientific staff</li> <li>• organisation of international and domestic scientific and professional conferences</li> <li>• publication of international scientific-professional journals</li> <li>• significant increase of staff mobility and linking with international researchers (within past 5 years)</li> <li>• upgrade of awarding system and stimulation of staff to apply and conduct scientific projects</li> </ul>
W – WEAKNESSES	<ul style="list-style-type: none"> <li>• spatial constraints (lack of amphitheatre with app. 200 places, offices, room for equipment etc.)</li> <li>• insufficient funds for pre-financing and co-financing of projects</li> <li>• insufficient capital scientific and semi-industrial equipment</li> <li>• lack of collaborative interdisciplinary (inter-institutional) projects</li> <li>• low engagement of part of staff</li> <li>• deficit of long-term (3 months and longer) training of scientific-teaching staff abroad (at foreign institutions)</li> <li>• deficit of incoming mobility of PhD students, postdoctoral trainees and teachers from abroad (foreign universities)</li> <li>• insufficient cooperation with industry</li> <li>• lack of patents</li> </ul>

EXTERNAL FACTORS	
<b>O – OPPORTUNITIES</b>	<ul style="list-style-type: none"><li>• building and equipping new Faculty facilities</li><li>• linking with other universities and scientific institutions, and encouragement of inter-institutional and interdisciplinary research</li><li>• more active cooperation with industry and public sector</li><li>• calls for applications of scientific and professional projects (EU funds, Croatian Science Foundation etc.)</li><li>• encouragement of publishing activities of employees</li><li>• encouragement of international project applications</li><li>• potential for participation in international mobility programmes for employees and students (ERASMUS, CEEPUS, IAESTE etc.)</li><li>• new study programmes and life-long learning courses</li><li>• promotional activities, seminars, workshops etc.</li></ul>
<b>T – THREATS</b>	<ul style="list-style-type: none"><li>• bad economy situation – low interest of economy (industry) for research and professional projects</li><li>• changes in financing higher education (restrictions in financing)</li><li>• insufficient number of young researchers at some departments</li><li>• insufficient funding of research by government, economy, local government etc.</li><li>• lack of financing for purchase of new and maintenance of the existing equipment</li><li>• insufficient stimulation of young scientists through financing initial scientific projects</li><li>• lack of funding and encouragement life-long education</li></ul>

## 7. Priority disciplines and themes of research

Priority disciplines and themes of research are based on analysed strategic documents at the EU and national level, and their part related to science and innovation developments, and on plan of development of the Faculty.

Scientific activity of the Faculty will be targeting research in following disciplines and themes:

- Biotechnical sciences – food technology, nutrition, biotechnology,
  - Development and improvement of processes of production of high-quality food (improvement of nutritional value, use of food industry by-products, functional food, improvement of biotechnological methods of food and beverage production, production of bioactive components and volatiles and their application in food production, modelling of biotechnological processes);

- Food safety and quality (equilibrium and kinetic research of interactions between bioactive compounds and food macromolecules, microbiological aspects of food safety, instrumental methods of analysis, non-destructive methods of analysis etc.)
- Nutrition and lifestyle in health preservation (nutritive and life style habits of different age groups in Croatia and abroad; eating disorders, diet therapy, influence of COVID-19 pandemic on eating habits etc.);
- Industrial and environmental biotechnology (increase of efficiency of fermentation processes, development of circular processes, development of innovative techniques for agri-food waste transformation to high-value products, new technologies for biofuel production (biogas, biodiesel), biological treatment of pollutants, biochemical characterisation and immobilisation of enzymes, influence of climatic changes on occurrence and metabolism of mycotoxigenic fungi, antifungal effect of natural and synthetic compounds and nano compounds from the environment, non-invasive, ecologically acceptable methods for boosting tolerance of grains and medicinal plants to environmental stress etc.);
- Natural sciences – chemistry
  - Synthesis, potential application and biological activities of heterocyclic compounds and nano compounds;
  - Green chemistry in synthesis of heterocyclic compounds and nano compounds;
  - Characterization of natural bioactive compounds, their bioavailability and bioactivity, and potential application;
  - Equilibrium and kinetic research of adsorption of polyphenols;
- Technical sciences – chemical engineering
  - Research of alternative and development of new adsorption materials for water purification and waste water treatment, monitoring of water bodies;
  - Optimising and modelling of processes in chemical industry;
  - Chemical modification of carbohydrates;
- Biomedicine and healthcare – pharmacy
  - Extraction, isolation and characterization of pharmacologically active compounds;
  - Development of herbal food supplements;
  - Production and techniques for pharmaceutical forms;
  - Natural products in cosmetics and development of natural cosmetics;
  - Production and modification of nanomaterials with potential biological and pharmacological activity;
- Interdisciplinary research.



Aforementioned priority disciplines and themes are not final, they are subject to changes and/or upgrade, depending on:

- Finances of the Faculty,
- Applications and realizations of domestic and international projects,
- Co-operation with industry,
- Cooperation with other research groups and institutions in the country and abroad.

The activities of the Faculty will be oriented towards efficient use of potential of research groups and their specific knowledge to strengthen the cooperation between research groups within the Faculty and conduct of interdisciplinary research. The Faculty will continually encourage applications of international and national projects, collaboration with other research groups in the country and abroad. In addition, the collaboration with other professions, economy, local community and public institutions will be continually improved.

## **8. Strategic goals of scientific activities for the period 2022 – 2026:**

1. to strengthen research capacities in the field of biotechnical sciences (especially in the fields of nutrition and biotechnology), natural sciences - the field of chemistry, and technical sciences - the field of chemical engineering, and establish new research areas in the field of biomedicine and healthcare - pharmacy;
2. to accredit the Faculty in the field of natural sciences (field: chemistry);
3. to accredit the Faculty in the field of technical sciences (field: chemical engineering);
4. to intensify international scientific cooperation;
5. to strengthen the transfer of knowledge to the economy sector.

**GOAL 1: To strengthen research capacities in the field of biotechnical sciences (especially in the fields of nutrition and biotechnology), natural sciences - the field of chemistry, and technical sciences - the field of chemical engineering, and establish new research areas in the field of biomedicine and healthcare - pharmacy**

Measure 1.1. Intensify the activity of the Faculty's research teams and their interconnection; encourage interdisciplinarity.

Measure 1.2. Increase the number of scientists in the field of nutrition, biotechnology, chemical engineering and pharmacy.

- Measure 1.3. Continuously work on the recruitment of doctoral students and postdoctoral students, especially in the fields of nutrition, chemical engineering and pharmacy.
- Measure 1.4. Continuously increase the number of published scientific papers in a1 category journals, especially in journals with a high impact factor (Q1 and Q2).
- Measure 1.5. Continuously increase the number of projects applied for (and approved) in competitive tenders for the allocation of financial resources.
- Measure 1.6. Continuously raise the quality of the CJFST journal to reach the a1 category level.
- Measure 1.7. Continuously improve the scientific and research infrastructure through competitive scientific/professional projects.
- Measure 1.8. Increase the connection of scientists at the Faculty with other institutions through participation in scientific centres of excellence and competitive projects.
- Measure 1.9. Strengthen the training of scientists, especially young ones, at foreign universities.
- Measure 1.10. Increase scientific research in the fields of food technology, nutrition, biotechnology, chemistry, chemical engineering and pharmacy.

## **GOAL 2: To accredit the Faculty in the field of natural sciences (field: chemistry)**

- Measure 2.1. Affirm a sufficient number of scientists with academic titles in the field of natural sciences, field: chemistry.
- Measure 2.2. Create an Elaborate on scientific activity.
- Measure 2.3. Obtain a permit to perform scientific activities in the field of chemistry.

## **GOAL 3: To accredit the Faculty in the field of technical sciences (field: chemical engineering)**

- Measure 3.1. Affirm a sufficient number of scientists with academic titles in the field of natural sciences, field: chemistry.
- Measure 3.2. Create an Elaborate on scientific activity.
- Measure 3.3. Obtain a permit to perform scientific activities in the field of chemical engineering.

## **GOAL 4: To intensify international scientific cooperation**

Measure 4.1. Maintain the level of international mobility of teachers and assistants.

Measure 4.2. Increase the number of project applications (and approved projects) to bilateral and international tenders, especially within the framework of HORIZON Europe.

Measure 4.3. Increase the number of cooperation agreements with foreign higher education institutions.

Measure 4.4. Increase the number of scientific papers co-authored with scientists from foreign institutions.

Measure 4.5. Strengthen international congresses organized by the Faculty through a greater number of foreign members of the scientific-organizational committees and foreign participants, and the introduction of English as the primary official language of congresses.

Measure 4.6. Organize summer schools with teachers from abroad.

#### **GOAL 5: To strengthen the transfer of knowledge to the economy sector**

Measure 5.1. Strengthen cooperation with the economy by increasing the number of services of interest to the economy and agreements concluded.

Measure 5.2. Increase the number of projects in cooperation with the economy.

Measure 5.3. Ensure prerequisites for licencing various forms of copyright protection, innovation, and formation of start-up and spin-off companies.

## **9. Expected outcomes of the strategic program of scientific research 2022 - 2026**

Taking into account the strategic goal of the development plan for scientific research and professional work of the Faculty, we determine the following outcomes of the strategic program of scientific research:

- increased scientific capacities of the Faculty through increasing the equipment needed for the implementation of projects;
- greater recognition of the Faculty in the scientific field of biotechnical, technical and natural sciences at the international level through a greater number of scientific papers published in journals with a high impact factor (Q1 and Q2), indexed in the WoS/CC database, and a greater number of international projects and increased importance of international gatherings;

- a permit for scientific activity in the field of natural sciences (field of chemistry) and technical sciences (chemical engineering) will enable applications for tenders for scientific research in the mentioned fields as well, which will strengthen the scientific significance of the Faculty at the domestic and international level and expand the Faculty's activities; this also creates a prerequisite for opening new studies at all levels of study;
- strengthened cooperation with the economy sector will result in a greater number of direct implementations of knowledge and skills directly into the real sector, a greater number of cooperation agreements, joint products developed and placed on the market, and patents and innovation solutions;
- formation of spin-off and/or start-up companies through which innovations will be implemented in products/services that will contribute to increasing the recognition of the Faculty.

## **10. Plan of organisational development**

The Faculty of Food Technology Osijek, in addition to existing scientific activity in the field of biotechnical sciences, plans to expand scientific activity to natural (field: chemistry) and technical (chemical engineering) sciences, as well as work on higher education in the field of pharmacy.

Every academic year, a Decision is made on the organization of the Faculty of Food Technology Osijek. Accordingly, and according to the approval of the University and the Ministry of Science and Education, the Faculty plans to develop young staff in the aforementioned areas. If the need arises, the Faculty will eventually reorganize its structure, in accordance with the growth of employment and advancement in certain scientific fields.

## 11. Indicators of the success of the implementation of the strategic program of scientific research for the period 2022 – 2026

GOAL 1: To strengthen research capacities in the field of biotechnical sciences (especially in the fields of nutrition and biotechnology), natural sciences - the field of chemistry, and technical sciences - the field of chemical engineering, and establish new research areas in the field of biomedicine and healthcare - pharmacy

Measure	Indicator	Monitoring mechanisms	Responsibility	Timeline
1.1.	Number of applied projects resulting from collaboration of different sub- and departments	Comparison with the previous period	Vice dean for science and international cooperation; Vice dean for quality management; Quality Improvement Office; Office for international cooperation and projects	Annual report
	Number of approved projects resulting from collaboration of different sub- and departments			
	Number of scientific papers resulting from collaboration of different sub- and departments			
1.2.	Number of scientists elected in the field of biotechnical sciences, discipline nutrition	Comparison with the previous period	Vice dean for science and international cooperation; Vice dean for quality management	12/2026.
	Number of scientists elected in the field of biotechnical sciences, discipline biotechnology			
	Number of scientists elected in the field of natural sciences, discipline chemistry			
	Number of scientists elected in the field of technical sciences, discipline chemical engineering			

<b>1.3.</b>	<p>Number od PhDs and post-doctorands at the Faculty</p> <hr/> <p>Number of PhDs and post-docs in the discipline nutrition in relation to total number of PhDs and postdocs</p> <hr/> <p>Number of PhDs and post-docs in the field of chemical engineering in relation to total number of PhDs and postdocs</p> <hr/> <p>Number of PhDs and post-docs in the discipline pharmacy in relation to total number of PhDs and postdocs</p>	Comparison with the previous period	Human Resources; Vice dean for quality management; Quality Improvement Office	Annual report
<b>1.4.</b>	<p>Number of scientific papers in biotechnical sciences in Q1 i Q2</p> <hr/> <p>Number of scientific papers in chemistry in Q1 i Q2</p> <hr/> <p>Number of scientific papers in chemical engineering in Q1 i Q2</p>	Comparison with the previous period	Vice dean for science and international cooperation; Vice dean for quality management; Quality Improvement Office; Library	Annual report
<b>1.5.</b>	Number and value of scientific projects financed by Croatian Science Foundation and EU funds	Comparison with the previous period	Vice dean for science and international cooperation; Vice dean for quality management; Quality Improvement Office; Office for international cooperation and projects	Annual report
<b>1.6.</b>	Number and types of databases in which the journal is cited	Comparison with the previous period	Editor-in-Chief; Library	Biannual report

	Journal indexed in WoS	WoS	Editor-in-Chief; Library	12/2025.
<b>1.7.</b>	Number of capital equipment Number of small and medium equipment	Comparison with the previous period	Finances	Biannual report
<b>1.8.</b>	Number of scientists involved in Science Centres of Excellence	Comparison with the previous period	Vice dean for science and international cooperation; Office for international cooperation and projects	Annual report
<b>1.9.</b>	Number of scientists on international mobility and duration of mobility	Comparison with the previous period	Vice dean for science and international cooperation; Vice dean for quality management; Office for international cooperation and projects	Annual report
<b>1.10.</b>	Number of applied and approved scientific projects in the discipline chemistry Number of applied and approved scientific projects in the disciplines nutrition and biotechnology Number of applied and approved interdisciplinary scientific involving chemistry, pharmacy or biotechnology Number of applied and approved scientific projects in the discipline pharmacy	Comparison with the previous period	Vice dean for science and international cooperation; Vice dean for quality management; Office for international cooperation and projects	Annual report

**GOAL 2: To accredit the Faculty in the field of natural sciences (field: chemistry)**

Measure	Indicator	Monitoring mechanisms	Responsibility	Timeline
3.1.	Number of scientists elected in the field of natural sciences, discipline chemistry	Comparison with the previous period	Vice dean for science and international cooperation	Biannual report
3.2.	Elaborate	Elaborate	Vice dean for science and international cooperation; Vice dean for quality management; Science Committee; Faculty Council	4/2022.
3.3.	Obtained permit	permit	Faculty Management	12/2022.

**GOAL 3: To accredit the Faculty in the field of technical sciences (field: chemical engineering)**

Measure	Indicator	Monitoring mechanisms	Responsibility	Timeline
3.1.	Number of scientists elected in the field of technical sciences, discipline: chemical engineering	Comparison with the previous period	Vice dean for science and international cooperation	Biannual report
3.2.	Elaborate	Elaborate	Vice dean for science and international cooperation;	6/2024.



			Vice dean for quality management; Science Committee; Faculty Council	
<b>3.3.</b>	Obtained permit	permit	Faculty Management	12/2024.

#### GOAL 4: To intensify international scientific cooperation

Measure	Indicator	Monitoring mechanisms	Responsibility	Timeline
<b>4.1.</b>	Number of teachers on mobility and duration of mobility	Comparison with the previous period	Office for international cooperation and projects	Annual report
	Number of assistants and postdocs on mobility and duration of mobility			
<b>4.2.</b>	Number of bilateral projects	Comparison with the previous period	Office for international cooperation and projects	Annual report
	Number of international projects			
<b>4.3.</b>	Number of collaboration agreements with foreign higher education institutions	Comparison with the previous period	Vice dean for science and international cooperation; Office for international cooperation and projects	Annual report
<b>4.4.</b>	Number of scientific papers (a1 i a2) co-authored with foreign authors	Comparison with the previous period	Vice dean for quality management; Library	Annual report
<b>4.5.</b>	Number of foreign members in scientific and organization committees of conferences	30 – 50 %	Vice dean for science and	Annual report

			international cooperation	
<b>4.6.</b>	Summer schools with foreign teachers	Comparison with the previous period	Vice dean for science and international cooperation; Koordinator programa cjeloživotnog učenja	Annual report

### GOAL 5: To strengthen the transfer of knowledge to the economy sector

Measure	Indicator	Monitoring mechanisms	Responsibility	Timeline
<b>5.1.</b>	Number of collaboration agreements <hr/> Number of services for economy sector	Comparison with the previous period	Vice dean for marketing and business cooperation; Vice dean for quality management	Annual report
<b>5.2.</b>	Number of projects in collaboration with industry	Comparison with the previous period	Vice dean for marketing and business cooperation; Vice dean for quality management	Annual report
<b>5.3.</b>	Held education regarding intellectual property <hr/> Held education on entrepreneurship	Evidence	Vice dean for marketing and business cooperation; Vice dean for quality management; coordinator of life-long	12/2023

---

		learning courses	
Number of application for protection of intellectual property (patent, mark etc.)	Comparison with the previous period	Vice dean for marketing and business cooperation; Vice dean for quality management	Report in the end of the period

---

**Literature:**

*Report of the expert committee on the re-accreditation of the Faculty of Food Technology of the University of J. J. Strossmayer of Osijek (date of visit: December 3 - 5 2019), AZVO, 2020.*

*National development strategy of the Republic of Croatia until 2030*

*Plan for the development of the research structure in the Republic of Croatia, MZO, 2014.*

*Development strategy of the Faculty of Food Technology Osijek for the period 2017/2018-2021/2022, Faculty of Food Technology Osijek, 2018*  
*<http://www.ptfos.unios.hr/index.php/dokumenti>*

*Education, Science and Technology Strategy of the Republic of Croatia (higher education), Ministry of Education, Science and Technology, 2015.*

*Smart specialization strategy of the Republic of Croatia*

*Strategy of Josip Juraj Strossmayer University of Osijek 2021-2030, Josip Juraj Strossmayer University of Osijek, 2020.*

*EU Strategic Plan 2020-2024 (Research and Innovation), European Commission, 2021.*

*Strategic plan of the Ministry of Science and Education for the period 2020-2022, MZO, 2019.*