

FKF Strategy 2021-2025

The Department of Physics, Chemistry and Pharmacy (FKF) is one of four departments at the Faculty of Science, SDU. Located in Odense, it is divided into two major sections, the Section for Chemistry and Pharmacy and the Section for Physics. The department covers research in chemistry, physics and pharmacy along with several interdisciplinary areas, and houses several major research centres. The department is responsible for the education programmes in chemistry, medicinal chemistry, physics, the Bachelor programme in Pharmacy and the 1-year Master's degree programme in Environmental Chemistry and Management. The department is also considerably involved in the Master's degree programme in Pharmacy.

About the FKF Strategy 2021-2025

This strategy has been formulated by the Head of Department in cooperation with the FKF management group based on several local strategies, as listed below. These have all been created in local units in a regular bottom-up process. Every employee has been encouraged to contribute to discussions and formulations.

- Section for Physics research strategy
- Section for Physics education strategy
- Section for Chemistry and Pharmacy (KeFa) research strategy
- Section for Chemistry and Pharmacy education strategy
- Shared Functions strategy
- Outreach strategy

All local strategies can be found at the employee portal (sdunet.dk).

This FKF strategy will be evaluated once a year – next time in May 2022. Some FKF strategy points are implemented on an ongoing basis, whereas others will be selected as special focus points from one year to the next. Which special focus points in the FKF strategy to be worked on are decided by the employees.

Research and recruitment

At the Department of Physics, Chemistry and Pharmacy, it is our passion to create fundamental new knowledge at the edge of the current human understanding and to perform research at the highest international level. We strive to move beyond traditional disciplines and work to develop new insights and technologies across physics, chemistry, pharmacy, mathematics, computer science and biology. It is our vision to create and exploit knowledge that contributes to solving the UN's Sustainable Development Goals (SDGs). The Department's research thus contributes to new knowledge and solutions with applications in the areas of climate, environment, energy and health.

FKF Strategy 2021-2025

Towards 2025, we will...

- **Ensure the highest research quality to maintain and develop an internationally leading position within the department's research areas**

- We will strengthen fundamental physics, biophysics, computational physics, pharmacy, inorganic and environmental chemistry at FKF.
- We will, in collaboration with the External Relations team at the Faculty of Science, exploit funding calls and application opportunities with the aim of increasing the number of externally funded projects, including Centres of Excellence, such as DNRF centres or significant participation in similar large-scale centres.
- We will ensure that the unique possibilities offered by the department's infrastructure, as highlighted by the ongoing excellent research activities, are visible to the outside world, aiming to attract collaborative projects with external partners.
- We will exploit opportunities to establish collaboration with industrial partners and organisations.
- We will focus on improving teaching organisation and administration as well as on implementing 'smart teaching' concepts aiming to provide each VIP better possibilities for increasing their time available for research and writing grant applications.
- We will explore the potential of our research in relation to the SDGs.

➤ **Secure the right recruitment of new faculty members**

- We will establish a plan and timeline for recruitment of tenured senior and non-tenured junior positions to ensure generational change and strengthen research, mainly within the areas of fundamental physics, biophysics, computational physics, pharmacy and inorganic and environmental chemistry. Recruitment will proceed through a transparent approach, and candidates will be evaluated regarding their teaching abilities, their ability to attract own funding and their ability to collaborate scientifically with the members within the respective sections regardless of personal background.
- We will strategically recruit externally-funded top scientists at all levels.
- We will have obtained an optimal scientific and teaching balance within the next 4-5 years by recruiting new staff members matching the needs within the sections.

➤ **Establish a well-functioning and sustainable infrastructure**

- We will attract the necessary external funding to maintain and develop our infrastructure through joint infrastructure applications coordinated by the infrastructure committees at the department.
- We will ensure an operational infrastructure and make sure that internal funds are available for maintaining this infrastructure.
- We will become better at sharing the available infrastructure of the department in the future.
- We will have educated and trained supporting staff within the next 1-2 years who can operate core facilities of the infrastructure to secure a well-functioning long-term operation of the infrastructure components.
- We will increase collaboration with departments at NAT and TEK to exploit existing infrastructure at SDU.

➤ **Stimulate internal collaborative projects and synergies within the department and other collaborators at SDU**

- We will stimulate interdisciplinary research collaboration and utilise synergies between different research areas at FKF as well as other departments at SDU by co-financing 1/3 PhD stipends or other strategic internal funding opportunities.
- We will arrange targeted research seminars within the sections of the department, where current and future research is presented by VIPs, and opportunities for preparing joint research applications are discussed.

Education, teaching and outreach

The study programmes at FKF rest on a solid foundation of cutting-edge research, and our study programmes are highly consistent with our research activities. The international and multidisciplinary research environment at FKF provides an excellent starting point for a career in chemistry, pharmacy and/or physics as well as in cross-disciplinary areas such as biomedical science, bioinformatics and sustainability. The FKF study programmes are visible to and attractive for students from Denmark and abroad, and it is clear what makes FKF educations unique and how they contribute to a sustainable future. We actively engage in partnerships with relevant industries in order to promote the translational potential of our research and increase the employability of our students. We use web communication, relevant social media platforms and other forms of outreach activities to increase the visibility of FKF research activities and educations.

Towards 2025, we will...

➤ **Increase enrolment in the physics and chemistry education programmes at the department**

- We will implement a concrete and systematised outreach strategy targeting upper secondary educations.
- We will introduce a new specialisation in chemistry (Bachelor programme) within medicinal and/or pharmaceutical chemistry. This specialisation is unique to the Chemistry and Pharmacy section and will be strongly profiled in the outreach programme.
- We will introduce two specialisations (Masters) in fundamental physics and biophysics. These specialisations are unique to physics at FKF but synergise with other departments and will be strongly profiled in the outreach programme.
- We will to a greater extent include chemistry and biophysics lecturers with relevant expertise in teaching within Bachelor courses at the Pharmacy education programme with the aim of increasing the visibility of chemistry and biophysics within the Pharmacy education programme.
- We will offer several Bachelor programmes and first-year projects at the interface between physics, chemistry, and pharmacy.

- We will strengthen and further develop the profile in 'Sustainable Chemistry', utilising the strong research expertise within sustainable chemistry at the department.
- We will strengthen and further develop our profile in 'computational physics', utilising the strong synergies with data science at IMADA and computational chemistry
- We will explore possibilities for enhancing the synergy between chemistry and physics teaching at the department and with the Faculty of Engineering (TEK).
- We will increase the service teaching provided by Physics at SDU and work to ensure attractive two-subject courses of study with Physics as one part.
- We will establish public lecture series within physics.
- We will recruit an outreach coordinator dedicated to the Physics section, thus having dedicated outreach coordinators for all programmes at FKF.
- We will seek to increase the yearly enrolment in chemistry and physics within the next 3-4 years to 25-30 and 30-35 students, respectively, and at the same time strive to reduce the drop-out rate in all FKF's programmes to approximately 35% (Physics) and 25% (Chemistry and Pharmacy).

➤ **Increase student employability**

- We will educate attractive graduates with the right competencies, both professional and non-professional, who are independent, committed and robust for the current and future labour market.
- We will strengthen our connections to local industry and thereby increase the number of company projects.
- We will emphasise the diversity of career possibilities and promote student reflection.
- We will establish a physics business club for promoting SDU students towards businesses and co-developing projects and our education programmes.

Working and study environment

At FKF, we consider every employee, visitor and student to be a valuable member of our community. We strive to obtain a workplace environment where both interpersonal interactions and the physical surroundings provide a high level of job satisfaction and a good match between tasks and employee competencies. These are essential preconditions for us to deliver research and teaching of the highest quality. We value open dialogue, fairness and transparency in decision-making at all levels.

Towards 2025, we will...

➤ **Ensure a positive and good working environment**

- We will create a working environment with the best possible options for all employees.

- We will engage in each other's work and make each other good; hence, give employees and students the best possible framework for attaining their best performance.
- We will ensure an accessible and visible management that listens to staff and students as well as a clear communication from management to employees and among employees.
- We will ensure that employees at FKF are involved in taking decisions for matters that affect their working conditions, including financial aspects.
- The management will support bottom-up initiatives brought up by employees and ensure transparency in decision-making.
- We will focus on recognition of researchers, lecturers and supporting staff members for outstanding performance.
- We will increase the cohesiveness of the department through increased internal collaboration and joint social events.
- We will support and utilise digital development.

➤ **Onboard new colleagues**

- We will secure a professional onboarding by appointing staff to be responsible for onboarding (mentors) in our sections. In addition, new employees will be introduced to members of the section and informed about the infrastructure at the department.

➤ **Develop plans for retainment and career development**

- We will develop individual plans for retainment and career development based on MUS and other employee conversations.
- We will work closely with the SDU liaison committee on strengthening VIP and TAP career development.