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Study Plan for PhD Education

Chemistry with specialization in Polymer Chemistry

Swedish title: Kemi med inriktning mot Polymerkemi

TNKEMI08

Swedish curriculum adopted by the Board of the Faculty of Science and Technology (Third-cycle Educational Board) on 2008-07-02, revision on 2018-01-17.

Translations approved 2018-01-17.

The Study Plan for third-cycle studies consists of three parts: a general part, this subject specific study plan, and each doctoral student's individual study plan.

Objective

Based on primary education in the subject area, the training at the research level should provide further insights into the subject specific parts as well as in-depth knowledge in at least one sub-area.

Through supervision and dissertation, the doctoral student shall prepare for an independent and critical career in areas with stringent requirements on in-depth subject knowledge as well as broad research knowledge.

The PhD student must also be able to present his goals and results in oral and written form for different audiences in English, and when it applies to Swedish-speaking doctoral students, even in Swedish.

Subject description

Polymer chemistry treats the synthesis, structure, properties and use of naturally occurring and synthetic macromolecules. The subject has clear boundaries to topics in chemistry but also in materials science, biology and medicine and finds applications ranging from plastic materials to advanced information technology and medicine.

At the Ångström Laboratory in Uppsala, particular polymers adapted for medical applications are studied.



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Eligibility

Basic Eligibility

The basic eligibility for third-cycle studies is described in the general part of the study plan.

Special Eligibility

Eligible for postgraduate studies in polymer chemistry is the candidate who has passed approved courses in chemistry or courses within the subject relevant areas of at least 90 higher education credits or who have acquired equivalent knowledge abroad.

Admission

Anyone wishing to be admitted to doctoral studies in polymer chemistry must submit an application to the head of the Department of Chemistry-Ångström. Placement at the postgraduate level is usually added several times a year.

Upon admission to postgraduate education, the Swedish title of the degree is to be specified in the application. According to decision (TEKNAT 2012/215), postgraduate education in Chemistry with specialization in Polymer Chemistry shall lead to a *filosofie doktorsexamen* or *teknologie doktorsexamen*. The English rendering will in either case be a licentiate/doctorate degree of philosophy.

At the time of admission, the department must provide a financial assistance plan demonstrating sufficient support to cover the maintenance of the applicant as well as her/his research.

Program structure

At the time of admission, each doctoral student and her/his supervisor shall draw up an individual study plan after consultation with the professor in charge of third-cycle studies. The plan is to be approved by the Head of the Department (by delegation of the Faculty Board) at the time of admission.

The individual study plan shall be annually reviewed by the doctoral student and her/his supervisor jointly, and supplemented with a summary of the achieved results and the plans for the coming year. Significant changes as well as any disagreement on the individual study plan shall be reported to the Head of the Department or, if deemed necessary, to the Third-cycle Educational Board.



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Courses

Within the education, at the postgraduate level, there may be different types of courses, such as lectures, literature studies, practical exercises, field studies, etc. The courses will provide broader insights into the subject as a complement to the specialist competence gained in research work. For example, the courses included in the individual study plan can be obtained from courses in education at the primary and advanced level, provided that they are not included in the eligibility requirements.

Courses in research ethics (at least 2 higher education credits) are compulsory for licentiate and doctoral degrees, as well as university education for postgraduate students who teach undergraduate or advanced level

Course offerings are revised continuously. However, the following courses should be included in the education:

Research Methodology 5hp

Polymer chemistry 10hp

Research ethics 2hp

Depending on the chosen research orientation, it may be desirable that a significant part of the courses in the individual study plan be derived from chemistry, especially organic chemistry, and biology. For a broader knowledge, for example, physics, and especially polymer physics, may be relevant.

Requirements for doctoral degree

The requirements for the doctoral degree consist of passed examinations in the courses included in the approved individual study plan of each doctoral student, as well as a passed public defense of the degree project. The studies awarded a doctoral degree comprise 240 higher education credits (four years of full-time studies), of which the doctoral thesis comprises a minimum of 120 higher education credits and the course part a minimum of 40 higher education credits.

Requirements for licentiate degree

A doctoral student who has acquired at least 120 higher education credits (two years of full-time studies) is eligible for a licentiate degree. The requirements consist of passing the examinations included in the program stage and receiving a passing grade on an academic paper of at least 60 higher education credits. The part of the course amounts to a minimum of 20 higher education credits.



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Other

Research in polymer chemistry is conducted in extensive international cooperation and requires a comprehensive global flow of information. It is, therefore, necessary that the doctoral student can apply scientific texts in the field in English and can communicate in spoken and written in English.