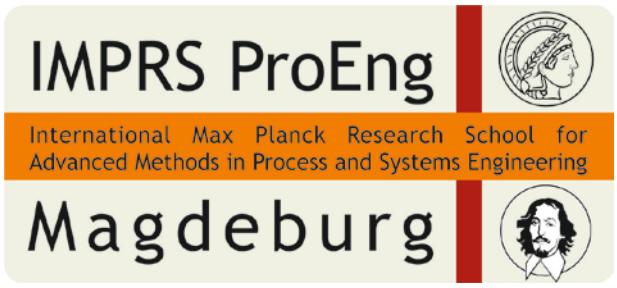

Statutes

I Legal form of the IMPRS

The IMPRS Magdeburg is an international doctoral program, organized as a cooperative project between the Otto-von-Guericke University Magdeburg (OvGU) and the Max Planck Institute for Dynamics of Complex Technical Systems Magdeburg (MPI). Funding is provided by the federal state of Saxony-Anhalt, by the Max Planck Society and by the MPI Magdeburg. The IMPRS is open for partnerships with external institutions. The run time is from September 2007 to August 2013; a first prolongation was granted until August 2019 and a second prolongation was granted until August 2025.

II Scope of the School

The major goal of the IMPRS Magdeburg is to provide excellent training and research on the analysis, the design and the optimization in chemical and biochemical process engineering. The approach aims to foster a close interplay between theory and experiment and to promote the use of mathematical modeling approaches based on a thorough understanding of the fundamental principles of chemical and biochemical processes. The focus is on

- the development and application of mathematical modeling approaches and systems theoretical methods to identify systems structures, to investigate process behavior and to design technical processes for specific tasks,

- the experimental characterization of challenging technical processes to identify key components of structure and function, to analyze systems under a variety of different process conditions, to characterize influence of modifications and perturbations on process performance, to enhance process yields and to validate corresponding mathematical models.

III Organizational Structure of the School

The IMPRS is managed by a spokesperson, who is the primary contact person representing the IMPRS. The spokesperson and its representative will be elected for a period of three years by the participating partners and the representative of the doctoral students.

The coordinator supports the spokesperson in managing the IMPRS, coordinates teaching and helps to organize announcements, selection of candidates, lectures, talks, seminars and workshops. Additionally, the coordinator supports the school's students in organizational matters.

Doctoral students will elect one representative for a period of one year into the IMPRS Board to facilitate communication between the students and the board. This way, proficient communication structures are established to take students interests into account and to join efforts in improving and ensuring the efficiency of the IMPRS.

The spokesperson and its representative, the representative of the students and the participating partners are members of the IMPRS Board. The board is responsible for the selection of candidates, issues concerning inter-institutional collaboration, assignment of resources and scientific questions, in particular the curriculum of the research school. Meetings are held at least on a bi-monthly basis. New partners can be invited to participate in the IMPRS. The actual members of the board may suggest suitable persons, the board will decide about their participation.

An overview about current Board members can be found on the IMPRS website.

IV Supervision of doctoral students

PhD advisory committees (PACs) will be established to support doctoral students in selecting appropriate lectures, seminars and courses, and to monitor and discuss the status of their thesis. Due to the interdisciplinary nature of the program the members of each PAC usually cover theoretical as well as experimental aspects of the work. Each student has an individual PAC that consists of at least 3 persons:

- the main advisor, representing the main subject
- the co-advisor, representing a second, complementary discipline and
- the mentor, an experienced scientist at post-doc-level that is closely cooperating with the candidate and usually available at short notice.

In particular, the members of the PACs will assist students in selecting basic and advanced courses required to broaden their knowledge in systems theory, mathematical modeling and engineering sciences as well as to effectively pursue world-class research in their specific field of interest. Theses should be finished within three years.

Basic guidelines for the PAC meetings:

- The members of the PAC should be fixed within the first 6 months after the doctoral candidate started his project.

- The candidate should have meetings at regular intervals with all members of the PAC, preferably as a whole group, approx. every 6 months.

- Issues to be addressed within the PAC meetings:
  - results of the project
  - first steps / next steps within the project
  - problems / setbacks encountered and possible solutions
  - lectures and courses to be taken
  - conferences attended / upcoming conferences
  - publications in preparation / already published

In all matters relating to their education the students have the opportunity to refer to the spokespersons or the coordinator of the IMPRS as an independent party, e.g. in cases of acceptance of study achievements or in cases of disagreement with their supervisor.

Monitoring the progress of the PhD projects

The following documents are to be submitted by the PhD candidate in the course of a PAC meeting, a copy is to be handed to the coordination office:

- After 6 months: PhD project plan
  - Goal and summary of the PhD project (1 page)
  - Short literature review: State-of-the-art (4 pages)
  - Work packages (incl. basic research methods) for 3,5 years after (6 pages)
  - Time plan (1 page)
  - Conference visits planned (0,5 page)
  - PAC committee members: 1st supervisor, 2nd supervisor, mentor, international advisor (if available) (0,5 page)
- After 24 months: progress report
  - Report about the work done so far (3 pages) or
  - Report about the work done so far (1 page) and draft of a manuscript
- After 36 months:
  - Progress report (2 pages) or draft of a manuscript
  - Outline of PhD thesis

V Curriculum

All lectures, courses, seminars and workshops of the IMPRS will be held in English. Details on the structure and the formal details of the thesis are listed in the regulations for a doctor degree ("Promotionsordnung") of the corresponding faculty of the OvGU or of an external partner university. Foreign students are entitled to apply for a mutual doctoral thesis in case a contract with a collaborating faculty of a partner university exists.

The program is structured into introductory course and IMPRS curriculum. The introductory course will be presented before the start of the semester for beginners of the doctoral program. The lectures will take place daily for one week. Its primary goal is to explain the structure of the IMPRS and to give an overview on the scientific focus of the participating groups. In addition, it will allow students to get to know each other and to introduce most lecturers.

The IMPRS curriculum covers on the one hand lectures and exercises which are considered essential for the successful participation in the IMPRS. Focus is on lectures, exercises and tutorials that cover mathematical and systems theoretical tools for analyzing, designing and optimizing chemical and biochemical processes to build up a profound scientific knowledge base. The level of these lectures is at an intermediate level (between Master and doctorate level) to allow beginners of the study program with a different scientific background to successfully attend these lectures and exercises.

On the other hand, advanced and specialized lectures are offered by the IMPRS curriculum to sharpen the student's individual scientific focus at a level beyond Master courses. The selection of courses will be based on recommendations made by the PACs.

Doctoral students are expected to visit all lectures required to fulfill the IMPRS curriculum during the first and second year of the doctoral program. During the third year, the focus should be on presentations of research results on international meetings and publications in peer-reviewed journals. Participation of the students in summer schools and conferences that are relevant to their research topics is strongly encouraged and financially supported. The IMPRS Magdeburg will also organize summer or winter schools on a regular basis.

Students are encouraged to publish their research results in refereed journals already during their time as a doctoral student. They should have 1-2 publications in peer-reviewed journals accepted for print before finishing their thesis. All publications, including posters and talks, are listed in the MPS bibliographic database **pubMan** (http://pubman.mpdl.mpg.de/).

Authorship agreements between doctoral students and supervisors must obey the rules of internationally recognized good scientific practice in the relevant field of study.

A regular IMPRS Seminar takes place every two weeks, with presentations of recent research results of the IMPRS students. Additionally, a 2-3 days' workshop will take place every year. Participation is mandatory for the IMPRS students in both the seminar and the workshop.

All students of the IMPRS have to earn 30 Credit Points (CP) according to the list below; Credit Points are given according to the ECTS (European Credit Transfer and Accumulation System). After finishing the IMPRS and successful defense of the thesis at the faculty, students will receive a 'Promotionsurkunde' from the OvGU Magdeburg or from an external partner university and an additional certificate of the IMPRS Magdeburg. A transcript will document the courses taken.

A doctoral student can earn up to 5 CP for own teaching activities (e.g., organizing the exercises to a lecture)

In case a student has already visited equivalent lectures in his Master or Diploma study, up to 10 CP can be transferred. The decision about approval will be made by the lecturer of the equivalent lecture upon a request (in written form) of the candidate. The candidate has to add the module description or a script of the lecture to the request.

The doctoral students are expected to attend at least 3 PhD defenses of other students during their membership in the IMPRS Magdeburg.

The membership of a doctorate student in the IMPRS Magdeburg normally ends with the thesis defense, or if the student discontinues his doctorate.

Credits

20 CP	for lectures of the IMPRS curriculum or other relevant lectures; up to 5 CP for own teaching activities
3 CP	courses on scientific skills, e.g.: • scientific writing • project management • information literacy • presenting professionally 1 seminar = 1 CP
3 CP	presentation at the IMPRS seminar / workshop 1 talk = 1 CP active participation in a conference = 1 CP
4 CP	participation in a summer or winter school 1 school = 4 CP
Σ 30 CP	

VI Conferral of a Doctorate

The doctor degree is earned at one of the five faculties of the OvGU involved in the IMPRS:

- Faculty of Process and Systems Engineering (FVST)
- Faculty of Electrical Engineering and Information Technology (FEIT)
- Faculty of Mathematics (FMA)
- Faculty of Medicine (FME)
- Faculty of Natural Sciences (FNW)

or at an external partner university.

Doctorate Regulations of the OvG university (in German)
http://www.bekanntmachungen.ovgu.de/H%C3%B6B+Teil+I/1_08+Promotionsordnungen-p-70.html

The theses will be reviewed by at least two professors, according to the doctorate regulations. It is desirable to have an external reviewer.

VII Extracurricular Activities

German classes are offered at different levels to facilitate daily life for students coming from abroad. Social events are organized by the coordinator and the students themselves to improve team working.