

## **Development Dialogue concerning the Master's degree programme, University of Groningen**

Audit has taken place on June 4 and 5, 2018; Development meeting on June 5, 2018

Zernike campus, university of Groningen

Programme discussed: Master's degree programme Nanoscience (CROHO 60618)

### Representatives of assessment panel:

- Prof. J. (Johan) Hofkens, professor at Molecular Imaging and Photonics at KU Leuven (België) [chair];
- Prof. N. (Nadine) Witkowski, professor in Physics the the Institut des Nanosciences de Paris van de Sorbonne Université (France);
- Prof. dr. ir. M.C.M. (Richard) van de Sanden, director of the Dutch Institute for Fundamental Energy Research (DIFFER) and professor at the Applied Physics department of the Eindhoven University of Technology;
- Dr. J.T. (Jan) van der Veen, physics teacher trainer and chair of the 4TU Centre for Engineering Education at the university of Twente;
- Y. (Yasser) Pordeli BSc, master student Nanotechnology University of Twente.
- Supported by P.A. (Peter) Hildering from the QANU

### Representatives of management and degree programme:

Prof. dr. J. Knoester	Dean Faculty of Science and Engineering
Prof. dr. K. Poelstra	Vice-dean Faculty of Science and Engineering, responsible for Education, programmes and teaching
Prof. dr. M.J.E.C. van der Maarel	Director Graduate School of Science (from 15.5.2018)
Prof. dr. P. Rudolf	Director Graduate School of Science (till 15.5.2018)
Dr. T.L.C. Jansen	Deputy director (from 1.1.2017)
Prof. dr. ir. C.H. van der Wal	Director Zernike Institute for Advance Materials (Research Institute) and deputy director till 1.1.2017
Drs. K. de Jonge	Degree programme coordinator
Dr. G.R. Blake	Lecturer, Solid State Materials for Electronics, Chair admissions board
Prof. dr. ir. E. van der Giessen	Chair of the Board of Examiners (till June 2018), lecturer, Micromechanics
Prof. dr. G. Palasantzas	Secretary of the Board of Examiners (Chair from June 2018), lecturer, Nanostructured Materials and Interfaces
Prof. dr. M.S. Pchenitnikov	Chair of the programme committee, Lecturer, Optical Physics of Condensed Matter
N. Roberts-de Hoog	Secretary of the degree programme (taking minutes)

### **Introduction**

Originally the audit panel would have two separate meetings. One concluding meeting with the formal management of the degree programme to complete the interviews and review of the degree programme. And another meeting as the nowadays requested so called development meeting or dialogue. But since there were hardly no questions left at the time of the concluding meeting the audit panel proposed to combine the two meetings and the degree programme and formal management cooperated.

### **Question to the formal management**

**Question assessment panel:** What is the position of the programme within the faculty? If it is the elite, is it a showcase, what is the perception regarding the other programmes?

**Response Knoester:** the programme is special and indeed a showcase. What is so successful, is the “cohort” feeling, which is exemplary. We do not have other programmes that are this small scale. The cohorts are tightly knit, same with the staff involved in the programme. There are no complaints from other programmes regarding the position of the master’s programme Nanoscience in the faculty.

**Response Rudolf:** Behavioural Cognitive Neuroscience (BCN) is also a selective small Master programme, and their best practices are copied from Nanoscience. It is also taken over by other, larger programmes. Nanoscience is partially used as Guinea pig for practices and procedures.

**Response Van der Wal:** There are no complaints, it is finding a good balance between the work and the merit.

### **Development dialogue**

#### **Opportunities for the programme**

Question from Jansen to the assessment panel: We presented the programme, vision and future. There was discussion about the recruitment, increased relations with the industry and continuous alignment of the programme with the Zernike Institute for Advanced Materials. Are there opportunities we have missed, or suggestions on what to do?

The assessment panel suggests to look into artificial intelligence, nanomedicine and cognitive material science.

Furthermore, the panel encourages to strengthen the link with the industry. Deputy director Jansen responds that in the institute there is a lot of collaboration with industry. Those contacts can be used to organize excursions for students to companies, and inviting them to the university for guest lectures.

In assignments at the university research will remain the core focus. But students already have the opportunity to do (a part of their) small or master thesis research project at a company, when they are interested, this has to be promoted to every new cohort to inform them about the link with the industry. Many students finally end up in R&D after their PhD.

The faculty pays attention to career perspectives by organizing an annual faculty career day for Master students and also career activities for PhD students about employability outside academia. Also, the opportunity to go abroad has to be advocated more clearly.

The assessment panel also suggests to add more hands-on opportunities with the research equipment. If possible, it would be a very good learning experience when more (maybe second-hand) equipment is available for education.

### **Learning community of 15 students**

Van der Maarel remarks that the programme is small with only 15 students, does this make it less attractive?

The assessment panel is quite clear that 15 students is a good number, 20 means that the group will split in smaller groups and that is not desirable. Also, the student member of the assessment panel confirms this, he prefers the 15 students as a maximum, it guarantees interaction. He has experience with a group of 23 and the group split and there was less interaction. Especially for the international students, the guidance is very important.

### **Public Relations and recruitment of prospective students**

There is a lot of competition between Master's programmes to attract new students. Van der Wal and Jansen remark that good PR takes a lot of time and manpower, and every action has to be discussed with the central office of the university. The most important PR is that people are talking about the programme, teachers and alumni and students, to make prospective students enthusiastic. The past years more bachelor students from Groningen apply for the programme, even international students. It is still very difficult to attract Bachelor's students from other universities in the Netherlands to Groningen. In practice students from the western part of the Netherlands do not come to Groningen, this is the same for other natural sciences master's programmes.

### **Balance between physics and chemistry**

The assessment panel remarks that there seems to be an imbalance, where there is more physics and less chemistry. Van der Wal responds that the physics and chemistry are more intertwined, so students might perceive the chemistry aspects as physics.

The assessment panel also remarks that it seems that the chemists have more problems in the programme than the physicists. This is not reflected in the marks according to the programme management.

The assessment panel confirms that overall, it is a very balanced programme, and the challenge is to get all students to the same level, without compromising the disciplinary aspects. Blake, the chairman of the admissions board, responds that already during the selection the reasoning and learning ability of the student is taken into account, to judge whether they will be able to learn another discipline and to 'survive' the programme.