

## Faculty of Mathematics and Natural Sciences

### Profile report: Physical Molecular Chemistry

- Discipline: physical (in)organic chemistry of molecular (functional) materials / interfaces / soft matter
- Level: tenure-track Assistant professor / Associate professor
- Fte: Full time (1,0)

### 1. Scientific discipline

The discipline of physical molecular chemistry studies chemical phenomena at the molecular scale using spectroscopic, spectrometric and electrochemical techniques. The field is placed among the disciplines organic and inorganic chemistry, theoretical chemistry and spectroscopy/molecular physics and has a strong experimental component. Contemporary research areas are molecular (functional) materials, interfaces and/or soft matter, topics that are within the focus of the faculty.

### 2. Vacancy

This position is opened by the Board of the Faculty (14/01195) and will be embedded in the Stratingh Institute for Chemistry. The position falls within the framework of 'Career Paths in Science 3' ('Bèta's in Banen 3'). Please see link for [criteria and conditions](#).

### 3. Selection committee (BAC)

Prof. Dr. A. J. Minnaard (Chair), Scientific Director of the Stratingh Institute for Chemistry

Prof. Dr. J.C. Hummelen, Chemistry of Molecular Materials and Devices, Stratingh Institute for Chemistry

Prof. Dr. W. R. Browne, Molecular Inorganic Chemistry, Stratingh Institute for Chemistry

Prof. Dr. K. U. Loos, Macromolecular Chemistry & New Polymeric Materials, Zernike Institute for Advanced Materials

Prof. Dr. S. Otto, Synthetic Organic Chemistry, Stratingh Institute for Chemistry; deputy director education for the programme Master Chemistry.

Prof. Dr. J. Huskens, Molecular nanofabrication, MESA+, University of Twente.

Roos van Lier, student member

Advisors:

M. Beuving, (HR)

Prof. Dr. B.L. Feringa, Synthetic Organic Chemistry, Stratingh Institute for Chemistry

Prof. Dr. R.C. Chiechi, Chemistry of Molecular Materials and Devices, Stratingh Institute for Chemistry

#### **4. Research area**

Tenure-track assistant professor / associate professor in the field of physical (in)organic chemistry of molecular (functional) materials / interfaces / soft matter

#### **5. Embedding: institute (and base unit)**

The position will be based within the Stratingh Institute for Chemistry, one of the research institutes of the Faculty of Mathematics and Natural Sciences of the University of Groningen. The research units in the Stratingh Institute are: Chemistry of Molecular Materials & Devices (Prof. Dr. J.C. Hummelen), Chemical Biology (Prof. Dr. A.J. Minnaard), Biomolecular Chemistry and Catalysis (Prof. Dr J. B. Roelfes) Molecular Inorganic Chemistry (Prof. Dr. W. Browne) and Synthetic Organic Chemistry (Prof. Dr. B.L. Feringa). The extensive experience and facilities for synthetic, physical and theoretical chemistry, materials characterization, and fabrication and characterization of organic and hybrid molecular devices available at the Faculty of Science and Engineering provide a firm background for world-class research and education.

#### **6. Local and (inter)national position**

The mission of the Stratingh Institute for Chemistry is to perform excellent research and teaching in molecular and supramolecular chemistry. Core activities in the chemical sciences such as chemical biology, organic chemistry, molecular inorganic chemistry and molecular materials chemistry are embedded in the institute. The research programme is focussed on synthesis, catalysis, functional materials, bio-organic chemistry/chemical biology and systems chemistry/complex molecular systems. Major parts of the research activities in the Institute are embedded in the programs of the top-research schools Zernike Institute for Advanced Materials and Functional Molecular Systems, and there exists extensive interdisciplinary cooperation with groups in the ZIAM (Zernike institute for Advanced Materials), GBB (Groningen Biomolecular Sciences and Biotechnology Institute), GRIP (Groningen Research Institute for Pharmacy), ENTEG (Engineering and Technology) and groups at the UMCG (University Medical Centre). At the national level, research and specialized teaching activities are embedded in the Netherlands Research School on Chemical Biology (NRSCB), Netherlands Institute for Catalysis (NIOK), Research center for Molecular Systems, the FOM Focus group "Next Generation Organic Photovoltaics". At the international level, groups within the Stratingh Institute are acting at the frontiers of their disciplines and are in several cases leading. Somewhat comparable research institutes at the national level are the Institute for Molecules and Materials at the Radboud University Nijmegen and (in part) the Institute for Complex Molecular Systems at the TU Eindhoven. The research expected to be performed within molecular physical chemistry will contribute in particular to a better understanding of novel molecular (functional) materials. Among the big questions here is how (novel) soft materials (liquids, gels, foams, colloids) respond upon physical and chemical stimuli and how this can be studied and influenced at the molecular scale. Progress in the study of (chemical reactions at) interfaces is an important field as well requiring novel techniques and approaches.

### **7. Expected contributions to research**

The appointed assistant / associate professor is expected to engage in original research within the field of physical and molecular chemistry (interpreted broadly) and/or its boundaries with other disciplines; to secure research funding and engage in the management of research projects; to disseminate his/her research through publication in scholarly journals, participation in international conferences and seminars, and through other media; and to engage in knowledge-transfer activities.

The research themes should strengthen the overall research program in the Stratingh Institute for Chemistry through the development of complimentary research lines.

### **8. Expected contributions to teaching**

The appointee is expected to contribute to both lecturing, project supervision and practical courses in the chemistry program for undergraduate and master students and to the training and supervision of PhD students. The educational duties are embedded in the Undergraduate and Graduate School of Science. The candidate is expected to be an inspiring teacher for a diverse audience of undergraduate and postgraduate students in Chemistry.

### **9. Expected contributions to the organization**

The candidate is expected to have an active interest and to provide a positive contribution to the management and organizational tasks of the institute. At the level of the FMNS, the candidate will contribute to the organization of the faculty, for example by participating in working groups and committees, in the fields of teaching, research and management. The candidate will participate in relevant national and international organizations.