university of groningen / faculty of science and engineering / Advanced Research Center Chemical Building Blocks Consortium

Dr. Michael M. Lerch
m.m.lerch@rug.nl
Assistant Professor
Stratingh Institute for Chemistry
University of Groningen
Nijenborgh 7, 9747 AG, Groningen
The Netherlands

Ph.D. Position in Materials Chemistry & Photonic Materials

Scalable and Sustainable Fabrication of Photonic Balls

Quick Facts

4-year fully funded Ph.D. position (AIO, full time/1 FTE)
As part of the ARC CBBC consortium, embedded in the Lerch Research Group
Stratingh Institute for Chemistry, Faculty of Science and Engineering, University of Groningen
Application deadline: Sept. 15th, 2022
Ideal starting date: Late 2022/Early 2023

Position

The chemical dyes and pigments used for coloration in conventional paints and polymeric coatings can be environmentally toxic, expensive, and/or degrade over time. In contrast, pigments based on structural color promise environmental compatibility, exhibit better hiding power, and last longer. Yet, the fabrication of such pigments on industrial scale remains a challenge, particularly within the context of waterborne, sustainable coatings. As part of the ARC CBBC flagship program ´smart coatings´, this PhD project will focus on the development of new bio-based chemical building blocks and their integration into the self-assembly processes for creating structurally colored pigments. Together with industrial partners, new strategies for fabricating such photonic balls (pigments) on large scale will be developed.
The prospective Ph.D. student will work in an international and interdisciplinary team in a fast-paced, creative, and collaborative research environment, based at the renowned Stratingh Institute. Embedded in the Advanced Research Center Chemical Building Blocks Consortium (ARC CBBC) and in close collaboration with the industrial partners (AkzoNobel, BASF, and Shell), the student will be exposed to both academic and industrial settings, addressing key-challenges to create together a more sustainable future.

Candidate Profile

We are looking for an excellent, creative, and highly motivated colleague with:

- an M.Sc. degree in nanoscience, chemistry, physics, materials sciences, or equivalent.
- demonstrable research experience in nanoscience, polymer chemistry, organic synthesis, heterogeneous catalysis, and/or optical properties, as the applicant will design and study the self-assembly of photonic structures and their scale-up with sustainable building blocks.
- an affinity for industry-relevant research questions, a strong team player, and well-developed communication and collaboration skills.
- excellent command of written and spoken English.
- willingness to acquire a variety of additional skills ranging from basic programming and 3D modelling, to device prototyping.

Ph.D. students are expected to develop scientific independence and complete research projects. Enthusiastic Ph.D. students stay abreast of developments in the field, proactively communicate research results, supervise B.Sc. and M.Sc. students, and work effectively in a team and collaborate across disciplines. As this project forms one part of a larger multilateral program on smart coatings, the student will be in active exchange with industrial partners and PhD colleagues within the consortium.

APPLICATION

Please get in contact with Dr. Michael Lerch (*m.m.lerch@rug.nl*). The application should include a **curriculum vitae**, a **cover letter**, and **contact details of two references** for a letter of recommendation. Applications received **before Sept. 15th, 2022**, will be considered for this position. Preferred starting date is negotiable but would ideally be at the end of 2022/early 2023. The University of Groningen and the Lerch Research Group strive to create an equitable, inclusive, and respectful environment, where researchers of different backgrounds and disciplines can work at the forefront of science.

Applications by female scientists and candidates from underrepresented minorities are especially encouraged.