

# Erik Maris

Nanomaterials Scientist

## ORGANISATIONS

### U.S. HISTOS

Sep 2013 – Aug 2018 | Utrecht, the Netherlands

- Have learned to work together, organise, and take financial responsibility in my different roles in the student society
- Treasurer for an event with 230 participants from ten different student sailing societies and a budget of approximately €15.000

## SKILLS

### PROGRAMMING

Experienced:

Matlab •  $\text{\LaTeX}$

Familiar:

C • Python

### SOFTWARE

Familiar:

COMSOL multiphysics

### LANGUAGE

Experienced:

Dutch (native) • English

Familiar:

French

## HOBBIES

Brewing Beer • Cinema • Reading

Board Games • Travelling

## EXPERIENCE

### ETH ZÜRICH | POSTDOC

Starting Feb 2023 | Zürich, Switzerland

- Project investigating Fourier surfaces and applications.
  - Research is conducted at the Optical Materials Engineering Laboratory and is supervised by prof. David Norris.
- Keywords: Fourier surfaces • photonics • spectroscopy

### UTRECHT UNIVERSITY | PHD CANDIDATE

May 2018 – Oct 2022 | Utrecht, the Netherlands

- Research focused on the characterization of the pore space in complex porous solids such as heterogeneous catalysts
  - Research is conducted at the Inorganic Chemistry and Catalysis group, supervised by prof. Bert Weckhuysen, dr. Florian Meirer, and dr. Freddy Rabouw.
- Keywords: porous catalysts • single-molecule tracking • confocal fluorescence microscopy • image analysis • spectroscopy

### BASF | INTERN R&D PROCESS CATALYSIS

Sep 2017 – Feb 2018 | De Meern, the Netherlands

- Project in collaboration with Utrecht University on an explorative R&D topic focused on nickel catalysts
- Research experience in a professional environment

### FUEL MIX B.V./UTRECHT UNIVERSITY | STUDENT RESEARCHER

May 2017 – Aug 2017 | Utrecht, the Netherlands

- Project aimed to formulate additives for (meta)stable water-in-diesel emulsions with the goal of reducing nitrogen oxides (NOx) and particulate matter emissions of diesel engines
- High degree of independence; supervised by prof. Willem Kegel of the Physical and Colloid Chemistry group
- Professional collaboration with Fuel Mix B.V. and Technical University Eindhoven (ir. Jos Reijnders)

## EDUCATION

### M.SC. NANOMATERIALS: CHEM. & PHYS. | UTRECHT UNIVERSITY

Sep 2015 – Feb 2018 | Utrecht, the Netherlands | Cum Laude

- Debye Honours Programme and TopSector Chemistry Scholarship Programme
  - Extra courses in physics: modelling and simulation, and photon physics
  - Master thesis at the Physical Chemistry group of Lund University, Sweden in the group of prof. Peter Schurtenberger. Graded 9/10
- Keywords: colloids • gelation • binary phase behaviour • image analysis • rheology • confocal fluorescence microscopy

### B.SC. CHEMISTRY | UTRECHT UNIVERSITY

Sep 2012 – Jul 2015 | Utrecht, the Netherlands | Cum Laude

- Chemistry + interdisciplinary Honours Programme and TopSector Chemistry Scholarship Programme
  - Bachelor thesis at the Inorganic and Catalysis group of Utrecht University in the group of prof. Bert Weckhuysen. Graded 9/10
- Keywords: zeolite catalysis • methanol-to-olefins reaction • operando • infrared spectroscopy • ultraviolet-visible spectroscopy • mass spectrometry

### VWO TECHNOLOGY AND HEALTH PROFILES | GROTIUS COLLEGE

Sep 2006 – Jul 2012 | Delft, the Netherlands | Cum Laude

- Extra courses in mathematics (wiskunde D) and arts

## SCHOLARSHIPS

M.Sc. VNCI/BASF TopSector Chemistry: €5500/year • internship • community  
B.Sc. VNCI TopSector Chemistry: €5000/year • community

## SELECTED PUBLICATIONS

- **Maris, J. J. E.**, Rabouw, F. T., Weckhuysen, B. M., Meirer, F. Classification-based motion analysis of single-molecule trajectories using DiffusionLab. *Sci. Rep.* **12**, 9595 (2022)
- Fu, D.,<sup>†</sup> **Maris, J. J. E.**,<sup>†</sup> Stanciakova, K., Nikolopoulos, N., Heijden, O., Mandemaker, L. D. B., Siemons, M. E., Salas Pastene, D., Kapitein, L. C., Rabouw, F. T., Meirer, F., Weckhuysen, B. M. Unravelling Channel Structure–Diffusivity Relationships in Zeolite ZSM-5 at the Single-Molecule Level. *Angew. Chem. Int. Ed.* **64**, e202112388 (2022)
- **Maris, J. J. E.**, Fu, D., Meirer, F., & Weckhuysen, B. M. Single-molecule observation of diffusion and catalysis in nanoporous solids. *Adsorption* **27**, 423–452 (2021)
- Immink, J. N., **Maris, J. J. E.**, Capellmann, R., Egelhaaf, S., Schurtenberger, P., & Stenhammar, J. ArGSLab: A tool for analyzing experimental or simulated particle networks. *Soft Matter* **17**, 8354–8362 (2021)
- Immink, J. N., **Maris, J. J. E.**, Crassous, J. J., Stenhammar, J., & Schurtenberger, P. Reversible formation of thermoresponsive binary particle gels with tunable structural and mechanical properties. *ACS nano* **13**, 329–3300 (2019)

<sup>†</sup> Both authors contributed equally to the work.