

**Job Boekhoven**  
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 BoekhovenLab.com

## Education

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- Ph.D. in Chemistry*. Advisor: Prof. J. H. van Esch (2008-2012)  
 Delft University of Technology, Delft, the Netherlands  
*Cum Laude*
- M.Sc in Chemistry*. Major: Organic Chemistry. Mentor: Prof. Feringa and Prof. van Esch (2007-2008)  
 University of Groningen, Groningen, the Netherlands
- M.Sc. Internship*. Mentor: Prof. W. T. S. Huck, (2007)  
 University of Cambridge, Cambridge, the UK
- B.Sc. in Chemistry*. Mentor: Prof. B. L. Feringa and Prof. J. H. van Esch (2005-2007)  
 University of Groningen, Groningen, the Netherlands

## Academic Positions

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- Rudolf Mößbauer Tenure Track Professor* (2016-2022)  
 Technische Universität München, Department of Chemistry and Inst. for Advanced Studies
- Rubicon Postdoctoral fellow*, (2012-2015)  
 Northwestern University, Inst. for BioNanotechnology in Medicine and Dept. of Chem. Chicago, IL, USA

## Awards and Scholarships

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- Thieme Organic Chemistry Journals Award (2016)
- Rising Star Award - Northwestern SQ Institute (2015)
- Rudolf Mößbauer Tenure Track Professorship (2015)
- *Cum laude* defense of PhD degree, ~top 5%, TU Delft (2012)
- Rubicon Fellowship, NWO (2012)
- Grant for visiting researcher, GKSS, Nuclear Reactor Center, Germany (2009)
- Short Term Scientific Mission Award, COST (European Cooperation in Science) (2008)

## Research Experience

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*Postdoctoral Fellow*, Northwestern University

- Develop a new research direction on energy landscapes of supramolecular materials (***Nature Materials***, 2016).
- Design, synthesize and study smart materials to target cancerous cells and display bioactive cues sequentially (***Angew. Chemie*** 2012, ***Adv. Mater.*** 2014, ***RSC Adv.*** 2015).

*Ph.D. Candidate*, Delft University of Technology

- Develop a new research line on dissipative self-assembly (***Angew. Chemie*** 2010, ***Science*** 2015).
- Design, synthesize and study new building blocks and assess their self-assembly behavior (***Nature Chem.*** 2012, ***Nature Prot.*** 2013, 2 x ***Angew. Chem.*** 2011,).
- Explore a research strategy that combines building blocks to form multicomponent structures (***Angew. Chemie*** 2010, ***J. Am. Chem. Soc.*** 2012, ***Chem. Science*** 2016).

## Teaching and Mentoring Experience

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### Mentor

*Technische Universität München*

- Currently, the P.I. is the supervisor of three Ph.D. candidates (2016-2019) and two postdocs.

*Northwestern University*

- Define research directions for three graduates (Ph.D. candidates) and four undergraduates
- Advise and guided graduate and undergraduate students

- Correct reports, papers and presentations

#### *Delft University of Technology*

- Advise and guided two graduate and four undergraduate students
- Correct reports and presentations

#### **Lecturer**

Technische Universität München

- Course name: "Supramolecular Materials" (MSc) to be taught in the summer semester '17.

#### *Northwestern University*

- Course name: "Materials and Nano-chemistry" (undergraduate) and "Chemical Synthesis of Materials" (graduate)

### **Academic Service**

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#### *Technische Universität München*

- Rudolf Moßbauer Fellow, "Institute for Advanced Study" TU Munich
- Member, "Munich School of Bioengineering (MSB)"
- Member and PI, "Alberta U. and T.U. Munich International Graduate school (ATUMS)"

### **Personal Statement**

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- My ambition is to pioneer new concepts in materials science and supramolecular chemistry that open paths to new technologies. For instance, I envision to use the concepts that emerge from this work program in future work on soft-robots, temporary inks and adaptive electronics.

- I enjoy learning about biology's solutions to typical problems in materials science, such as: how can we create strong but flexible materials like bone?, how can we engineer self-healing structures? and can we create autonomously operating materials?

### **Selected list of peer reviewed publications**

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Total number = 27, (H-index:14 citations >800, Google Scholar)

1) Tantakitti, F\*; Boekhoven, J\*; Wang, X; Kazantsev, R; Yu, T; Li, Y; Zhuang, E; Zandi, R; Ortony, J; Newcomb C; Palmer, L; Shekhawat, G; Olvera de La Cruz, M; Schatz, G; Stupp, S; "Energy landscapes and function of supramolecular systems", **Nature Materials** (2016)

2) Boekhoven, J\*; Hendriksen, W\*; Koper, B; W; Eelkema, R; van Esch, J; "Transient assembly and behavior of abiotic fiber materials driven by chemical energy", **Science** (2015)

With perspective by van der Zwaag and Meijer in **Science**:

"Fueling connections between chemistry and biology" (DOI: 10.1126/science.aad0194)

Highlighted in Dutch National Newspaper, **NRC Handelsblad**:

"Artificial fibers act as if they were alive".

3) Boekhoven, J; Stupp, S; "Supramolecular Materials for Regenerative Medicine", **Adv. Mater.** (2014)

4) Newcomb, C; Sur, S; Ortony, J; Lee, O; Matson, J; Boekhoven, J; Yu, J; Schatz, G; Stupp, S; "Cell death and cell survival instructed by supramolecular cohesion of biomaterials", **Nature Commun.** (2014)

5) Poolman, J; Boekhoven, J; Besselink, A; Olive, A; van Esch, J; Eelkema, R; "Tuning gelation time and stiffness of low molecular weight hydrogels through catalytic control over self-assembly", **Nature Protoc.** (2014)

6) Boekhoven, J; Poolman, J; Maity, C; Li, F; van der Mee, L; Minkenberg, C; van Esch, J; Eelkema, R; "Catalytic control over supramolecular gel formation", **Nature Chem.** (2013)

7) Boekhoven, J; Rubert, C; Sur, S; Worthy, A; Stupp, S; "Dynamic Display of Bioactivity through Host-Guest Chemistry", **Angew. Chem. Int. Ed.** (2013)

8) Boekhoven, J.; Koot, M; Wezendonk, T; Eelkema, R; van Esch, J; "A Self-Assembled Delivery Platform with Post-production Tunable Release Rate",

**J. Am. Chem. Soc.** (2012)

Highlighted in Chemistry and Industry Magazine, (DOI:10.1002/cind.7611\_17).

9) Boekhoven, J.; Brizard, A; van Rijn, P; Stuart, M; Eelkema, R; van Esch, J., "Programmed Morphological Transitions of Multisegment Assemblies by Molecular Chaperone Analogs",

**Angew. Chem. Int. Ed.** (2011)

10) Boekhoven, J.; Brizard, A; Kowgi, K;. Koper, G; Eelkema, R; van Esch, J.; "Dissipative Self-Assembly of a *Molecular Gelator by Using a Chemical Fuel*"

**Angew. Chem. Int. Ed.** (2010)

Hot Paper and highlighted in Nature Chem. (DOI:10.1038/nchem.747).

\* Denotes equal contribution