Lipid mediated colloidal interactions

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Publication List

Published work presented in this thesis

- C. M. van der Wel and D. J. Kraft. 'Automated tracking of colloidal clusters with sub-pixel accuracy and precision', J. Phys. Condens. Mat. **29**, 44001 (2017) DOI:10.1088/1361-648X/29/4/044001 (Chapter 2).

- C. M. van der Wel, N. Bossert, Q. C. Mank, M. G. T. Winter, D. Heinrich and D. J. Kraft, 'Surfactant-free colloidal particles with specific binding affinity', submitted (Chapter 4).

- C. M. van der Wel, A. Vahid, A. Šarić, T. Idema, D. Heinrich and D. J. Kraft. 'Lipid membrane-mediated attractions between curvature inducing objects', Sci. Rep. **6**, 32825 (2016) DOI:10.1038/srep32825 (Chapter 5).

- C. M. van der Wel, D. Heinrich and D. J. Kraft, 'Microparticle assembly pathways on lipid membranes', Biophys. J. **113**, in press (2017) DOI:10.1016/j.bpj.2017.07.019 (Chapter 6).

- C. M. van der Wel, R. K. Bhan, R. W. Verweij, H. C. Frijters, Z. Gong, A. D. Hollingsworth, S. Sacanna and D. J. Kraft, 'Preparation of colloidal organosilica spheres through spontaneous emulsification', Langmuir **33**, in press (2017) DOI:10.1021/acs.langmuir.7b01398 (Chapter 7).

Other published work

- I. Chakraborty, V. Meester, C. M. van der Wel and D. J. Kraft, 'Colloidal joints with designed motion range and tunable joint flexibility', Nanoscale **9**, 7814 (2017) DOI:10.1039/C6NR08069C

- V. Meester, R. W. Verweij, C. M. van der Wel and D. J. Kraft. 'Colloidal recycling: reconfiguration of random aggregates into patchy particles', ACS Nano **10**, 4322 (2016) DOI:10.1021/acsnano.5b07901

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Curriculum Vitae

I was born in Hilversum, where I grew up and received my secondary education at *Gemeentelijk Gymnasium*. During the exam year in 2006, I won the National Chemistry Olympiad and received the silver medal at the International Chemistry Olympiad in Gyeongsan, South Korea.

Directly after my secondary education, I enrolled to the BSc program Chemistry at *Utrecht University*. Starting from my second year, I took extra classes in physics, which continued until 2011 when I finished both bachelors cum laude with a thesis on high sensitivity dielectric spectroscopy measurements. After that, I continued in the master programme *Nanomaterials: Chemistry and Physics* at the same university. I spent one year in the *Physics of Devices* group, studying fluctuations in dusty plasmas for the preparation of thin-film solar cells, and six months at Philips Research, where I studied water electrochemistry. In April 2013, I received my MSc diploma cum laude. During these seven years at *Utrecht University*, I spent one year full-time as financial manager of the Dutch Student Orchestra (NSO), and two years part-time as board member of USConcert. From 2011, I founded and co-organised the opera project *Rheingold on the Rhine*, which took place in a converted Rhine barge in July 2013.

In September 2013, I started as a PhD candidate at *Leiden University* under supervision of Dr. Daniela Kraft and Dr. Doris Heinrich. I studied lipid mediated interactions between colloidal particles, the results of which are presented in this thesis. Part of the work has been performed in close collaboration with Afshin Vahid and Dr. Timon Idema at *Delft University of Technology*, and another part with Dr. Stefano Sacanna and Dr. Andrew Hollingsworth at *New York University*.

During my PhD, I (co-)supervised 10 undergraduate students and I was a teaching assistant of the undergraduate courses *Experimental Physics* and *Diffusion*. I attended schools in Han-sur-Lesse (Belgium) and Varenna (Italy), and presented my work at the APS March meeting 2015 (San Antonio, USA), CHAINS 2015 (Veldhoven), the International Soft Matter Conference 2016 (Grenoble, France), Biophysics@Veldhoven 2016, and Physics@Veldhoven 2017.

After my PhD, I aim to use my knowledge of the natural sciences to solve current problems in applied science, in a research position in industry or a governmental institute.

Acknowledgement

The work performed for this thesis could not have taken place without the support of many people. Firstly, I express my gratitude to Dr. Daniela Kraft for the thoughtful supervision providing the confidence necessary to conduct my own research. Secondly, I thank Dr. Doris Heinrich for the inspiring discussions and the scientific freedom. I thank Prof. Thomas Schmidt for acting as promotor.

I am thankful for the discussions with our collaborators Afshin Vahid and Dr. Timon Idema (*TU Delft*), who together with Dr. Anđela Šarić (*UC London*) provided the numerical work in Chapter 5. Also, I thank Rohit Bhan, Zhe Gong, Dr. Andrew Hollingsworth, and Dr. Stefano Sacanna (*New York University*) for their contributions to Chapter 7. I thank Benny van Zuiden for the discussions and explanations about Brownian motion in curved geometry (Chapter 3). Finally, I thank Nelli Bossert and Marcel Winter for their work that is included in Chapter 4.

Part of the work in this thesis was conducted by undergraduate students. I enjoyed coaching Alex Blokhuis, Hans Frijters, Willem Hekman, Jelle Hockx, Quinten Mank, Sergio Rus Moreno, Joseph Salaris, and Guido van de Stolpe, each of whom provided valuable results. I especially thank Ernst Jan Vegter for his persevering work on supported lipid bilayers, a project that is still ongoing, and Ruben Verweij for his significant contributions to the TPM-supported lipid monolayers described in Chapters 7 and 8.

The technical support by the fine mechanical and electronic departments were indispensable: I especially thank Raphaël Zwier and Jeroen Mesman. I thank Daniëlle Jansen and Ernst van Duijvendijk (*Nikon Instruments*) for their support on the microscopes. I thank Daniëlle Duijn and Yvonne van Rooij for the secretary work.

I am grateful to my dear colleague Vera Meester for support and feedback during my PhD, as well as for sharing the responsibility of managing the Soft Matter Physics laboratory. I also thank my colleagues Indrani Chakraborty, Melissa Rinaldin, Nemanja Markešević, Ruben Verweij, Marcel Winter, Dominique Donato, Joeri Wondergem, Nelli Bossert, Elena Beletkaia, and Maria Mytiliniou for the careful feedback and useful discussions. I also thank the people who created a friendly and fruitful scientific environment: Martin, Geert, Bastiaan, Merlijn, Luuk, Peter, Anne, Scott, Corentin, Rachel, Stefania, Luca, Dan, Koen, Piermarco, Ireth, Benny, Anton, Yujie, Saptaswa, Biswajit, Wim, and others I omitted unintentionally. Finally, I express my gratitude to my family and especially to Runa for the love and constant positive support during all these years.

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