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Assembling anisotropic colloidal building blocks

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Work presented in this thesis

- Vera Meester and Daniela J. Kraft, *Spherical, dimpled and crumpled hybrid colloids with tunable surface morphology*, *Langmuir*, 32 (41), 10668-10677, **2016**. (results from Chapter 2)
- Vera Meester, Ruben W. Verweij, Casper M. van der Wel and Daniela J. Kraft, *Colloidal recycling: Reconfiguration of random aggregates into patchy particles*, *ACS nano*, 10 (4), 4322-4329, **2016**. (results from Chapter 3)
- Vera Meester and Daniela J. Kraft, *Complex patchy particles shaped from deformable seed particles by capillary interactions*, *Soft Matter*, 14, 1162-1170, **2018**. (results from Chapter 4)
- Vera Meester and Daniela J. Kraft, *Patchy particles with two distinct patch types*, in preparation. (results from Chapter 5)
- Vera Meester, Casper M. van der Wel, Ruben W. Verweij, Giovanni Biondaro and Daniela J. Kraft, *Anisotropic distortions in hexagonal crystals at fluid interfaces*, in preparation. (results from Chapter 6)

Additional appreciation for work in this thesis

- Vera Meester, LION image award, Leiden University, published in *Volkskrant* in November **2016**. (results from Chapter 2)
- Vera Meester, Best presentation award, Casimir Spring School, presentation title: *Colloidal recycling: Reconfiguration of random aggregates into patchy particles*, **2016**. (results from Chapter 3)

Other publications

- Janne-Mieke Meijer, Vera Meester, Fabian Hagemans, Albert P. Philipse and Andrei Petukhov, *Convectively assembled crystals of colloidal cubes*, in preparation.
- Indrani Chakraborty, Vera Meester, Casper M. van der Wel and Daniela J. Kraft, *Colloidal joints with designed motion range and tunable joint flexibility*, *Nanoscale*, 9, 7814-7821, **2017**.
- Jan Hilhorst, Vera Meester, Esther Groeneveld, Jan K. G. Dhont and Henk N. W. Lekkerkerker, *Structure and Rheology of Mixed Suspensions of Montmorillonite and Silica Nano-particles*, *Journal of Physical Chemistry B*, 118 (40), 11816-11825, **2014**.
- Peter Holmqvist, Vera Meester, Fabian Westermeijer and Dzina Kleshchanok, *Rotational diffusion in concentrated platelet systems measured with X-ray photon correlation spectroscopy*, *The Journal of Chemical Physics*, 139, 084905, **2013**.
- Dzina Kleshchanok, Vera Meester, Cornelia E. Pompe, Jan Hilhorst and Henk N. W. Lekkerkerker, *Effects of added silica nanoparticles on Hectorite gels*, *Journal of Physical Chemistry B*, 116 (31), 9532-9539, **2012**.

Curriculum Vitae

I was born in 1988 in Amersfoort and grew up in a small town nearby, Spakenburg. In 2008 I enrolled in the bachelor *Chemistry* at Utrecht University, where I specialized in physical chemistry with the minor *Nanosciences*. My bachelor graduation project was performed in collaboration with NIZO food research in Ede where we studied the effect of casein molecules on the texture of clay suspensions. During my studies I've also worked as a study coach for teenagers with study and social difficulties.

I graduated in 2011 (GPA 3.72) and subsequently started with the master *Nanomaterials: Chemistry and Physics* at Utrecht University. Two research projects were performed. One study was performed at Utrecht University at the department of Physical and Colloid Chemistry, where I synthesized hollow silica cubes and studied their self-assembly into large compact structures. The second project was performed at Oxford University where I formed networks of alternating strings of dia- and superparamagnetic particles under the influence of an external magnetic field. I finished my masters in 2014 (GPA 4.00). During my master I also worked as a researcher on a separate research project at Utrecht University involving the visco-elastic and dynamic properties of clay suspensions.

In March 2014 I started as a PhD-candidate in the newly established Soft Matter Physics group of Dr. Daniela Kraft at Leiden University. I developed a method to recycle colloidal aggregates by reconfiguration into patchy shapes and formed anisotropic colloids of various shapes. I also studied the effect of anisotropic particles on the hexagonal order of spheres at a fluid interface and the dynamics of these impurities under confinement. During my PhD I've supervised research projects of high school, bachelor, master and MBO students and presented my work at several national and international conferences. Besides research I've been motivated to promote and communicate science to a wider audience via interviews, labtours, competitions and presentations, which led to participation in Famelab and winning the LION Image Award and the Best Presentation Prize at the Casimir Spring School in 2016.

In June 2018 I'll start a new adventure as a Junior Scientist Innovator at the department of Explosions, Ballistics and Protection of TNO in Rijswijk.

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