

Janne-Mieke Meijer

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Education and Research

- 2016 – now **Alexander von Humboldt Postdoctoral Fellow** at Universität Konstanz, Soft Matter Physics, group of Prof. Maret and Dr. Keim.
- 2015 – 2016 **Postdoc** at Lund University, Physical Chemistry Department, in collaboration with Jerome Crassous.
- 2010 – 2015 **PhD Position** at Utrecht University, Van 't Hoff laboratory for Physical and Colloid Chemistry under supervision of A.V. Petukhov, A.P. Philipse and H.N.W. Lekkerkerker.
Thesis title: *Colloidal Crystals of Spheres and Cubes in Real and Reciprocal Space*, Defence date: Jan. 12, 2015
- 2013 **Visiting student** (3 months) at Applied Physics, RMIT, Melbourne, Australia.
- 2009 – 2010 **Researcher** at Van 't Hoff Laboratory for Physical and Colloid Chemistry, Utrecht University
- 2006 – 2009 **MSc Nanomaterials: Chemistry & Physics** (*cum laude*, with honours) at Utrecht University. Master thesis at Condensed Matter and Interfaces under supervision of A. Meijerink and L. Aarts. *Quantum cutting of lanthanide complexes, down conversion in $YF_3: Nd^{3+} Yb^{3+}$.*
- 2009 **Research Internship** (6 months) at Applied Physics, RMIT, Melbourne, Australia, under supervision of G. Bryant and W. van Megen. *Comparison of Crystallisation Kinetics in Two Hard-Sphere Model Systems.*
- 2003-2006 **BSc Chemistry**, Utrecht University, The Netherlands
Bachelor thesis at Van 't Hoff Laboratory for Physical and Colloid Chemistry under supervision of A.V. Petukhov and V.W.A. de Villeneuve. *Lateral Stacking Disorder in Hard-Sphere Colloidal Crystals.*
- 1997-2003 High School 'St. Bonifatius College', Utrecht, The Netherlands

Teaching experience and supplementary activities

- 2011-2014 **Daily supervisor.** Three full-time master students and two full-time bachelor students.
- 2011-2013 **Design and supervision.** Laboratory project for first and second year chemistry students.
- 2010-2011 **Teaching assistant.** Physical chemistry 2.
- 2009 **Practicum assistant** for first year Chemistry students project at Utrecht University
- 2007-2008 **Member of the Proton International Committee.** Organized a two week study tour for BSc and MSc chemistry students of Utrecht University to Ireland.

- 2006 – 2007 **Vice-treasurer of the study association U.S.S. “Proton”**, Responsible for all contact with external parties, companies and institutes.
- 2004 – 2008 **Practicum assistant** at Chemistry Department for high school student projects

Grants and Awards

- 2016 Poster Prize at 30th European Colloid and Interface Society (ECIS) Conference.
- 2015 Alexander von Humboldt Foundation, research fellowship for postdoctoral researchers for a stay of 24 months at University of Konstanz, Germany.
- 2014 PhD Thesis selected as Outstanding PhD Thesis by Utrecht University and published in Springer Theses Series – Recognizing Outstanding Ph.D. Research.
- 2009 Scholarships of ‘Fundatie van de Vrijvrouwe van Renswoude’, ‘Stichting Dr. Hendrik Muller’s Vaderlandsch Fonds’, ‘K.F. Hein Fonds Studie en Individuele Noden’ & Mobility Program Scholarship of Master program Nanomaterials: Chemistry & Physics, for 6 month research internship in Melbourne, Australia.
- 2006-2007 Board Scholarship (6 months) of University Utrecht for taking place in study association board.

List of publications

In preparation:

1. **Meijer, J.M.**, J. Crassous, ‘Phase Behavior, Dynamics and Directed Assembly of Bowl-Shaped Colloids’
2. **Meijer, J.M.**, Meester V., Philipse, A.P., Petukhov, A.P. ‘Optimal packings in convectively assembled crystals of colloidal cubes’
3. L. Rossi, J.G. Donaldson, **J.M. Meijer**, W. T. M. Irvine, A. V. Petukhov, S.S. Kantorovich, A. P. Philipse and S. Sacanna. ‘Magnetic properties and self-assembly behaviour of colloidal hematite cubes’.

Published:

1. **J.M. Meijer**, A. Pal, S. Ouhajji, H.N.W. Lekkerkerker, A.P. Philipse and A.V. Petukhov, *Observation of solid-solid transitions in 3D crystals of colloidal superballs*, Nature Communications 8, 14352 (2017), doi10.1038/ncomms14352
2. A.G. Shabalin, **J.M. Meijer**, R. Dronyak, O.M. Yefanov, A. Singer, R.P. Kurta, U. Lorenz, O.Y. Gorobtsov, D. Dzhigaev, S. Kalbfleisch, J. Gulden, A.V. Zozulya, M. Sprung, A.V. Petukhov, and I.A. Vartanyants *Revealing Three-Dimensional Structure of an Individual Colloidal Crystal Grain by Coherent X-Ray Diffractive Imaging*. Phys. Rev. Lett. 117, 138002 (2016)
3. A.V. Petukhov, **J.M. Meijer**, Gert Jan Vroege. *Particle shape effects in colloidal crystals and colloidal liquid crystals: Small-angle X-ray scattering studies with microradian resolution*, Current Opinion in Colloid & Interface Science, 20(4) 272-281, (2015), <http://dx.doi.org/10.1016/j.cocis.2015.09.003>.
4. Sulyanova, E.A., Shabalin, A., Zozulya, A.V., **Meijer, J.M.**, Dzhigaev, D., Gorobtsov, O., Kurta, R.P., Lazarev, S., Lorenz, U., Singer, A., Yefanov, O., Zaluzhnyy, I., Besedina, I., Sprung, M., Petukhov, A.V. and Vartanyants, I. A, (2015) *Structural evolution of colloidal crystal films in the process of melting revealed by Bragg peak analysis*, Langmuir, DOI: 10.1021/la504652z.
5. Pal, A., **Meijer, J.M.**, Wolters, J.R., Kegel, W. and Petukhov, A.V. (2015) *Structure and Stacking Order in Crystals of Asymmetric Dumbbell-like Colloids*, J. Appl. Cryst., **48**, 238-

6. **Meijer, J.M.** *Colloidal Crystals of Spheres and Cubes in Real and Reciprocal Space*. Springer International Publishing, 2015. (Part of Springer Theses Series – Recognizing Outstanding Ph.D. Research)
7. **Meijer, J.M.**, Shabalin, A., Dronyak, R., Yefanov, O.M., Singer, A., Kurta, R.P., Lorenz, U., Gorobstov, O., Dzhigaev, D., Gulden, J., Byelov, D.V., Zozulya, A.V., Sprung, M., Vartanyants, I.A. and Petukhov, A.V. (2014) *Double hexagonal close packed structure revealed in a single colloidal crystal grain by Bragg rod analysis*. *J. Appl. Cryst.*, **47**, 1199–1204
8. Byelov, D., **Meijer, J.M.**, Snigireva, I., Snigirev, A., Rossi, L., Pol, E. van den, Kuijk, A., Philipse, A.P., Imhof, A., Blaaderen, A. van, Vroege, G.J. & Petukhov, A.V. (2013) *In situ hard X-ray microscopy of self-assembly in colloidal suspensions*. *RSC Advances*, **3**, 15670-15677.
9. Zozulya, A.V., **Meijer, J.M.**, Shabalin, A., Ricci, A., Westermeier, F., Kurta, R.P., Lorenz, U., Singer, A., Yefanov, O., Petukhov, A.V., Sprung, M. & Vartanyants, I. A. (2013) *In situ X-ray crystallographic study of the structural evolution of colloidal crystals upon heating*. *J. Appl. Cryst.*, **46**, 903-907.
10. **Meijer, J.M.**, Byelov, D., Rossi, L., Snigirev, A., Snigireva, I., Philipse, A.P. & Petukhov, A.V. (2013) *Self-assembly of colloidal hematite cubes: a microradian X-ray diffraction exploration of sedimentary crystals*. *Soft Matter*, **9**(45), 10729-10738.
11. Dronyak, R., Gulden, J., Yefanov, O.M., Singer, A., Gorniak, T., Senkbeil, T., **Meijer, J.M.**, Al-Shemmary, A., Hallmann, J., Mai, D.D., Kurta, R.P., Lorenz, U., Dzhigaev, D., Petukhov, A.V., Düsterer, S., Treusch, R., Tishchenko, A.A., Strikhanov, M.N., Weckert, E., Mancuso, A.P., Salditt, T., Rosenhahn, A. and Vartanyants, I.A. (2012) *Dynamics of colloidal crystals studied by pump-probe experiments at FLASH*. *Phys. Rev. B*, **86**, 1-5.
12. Kleshchanok, D., Holmqvist, P., **Meijer, J.M.** and Lekkerkerker, H.N.W. (2012). *Lyotropic smectic B phase formed in suspensions of charged colloidal platelets*. *J. Am. Chem. Soc.*, **134**, 5985-5990.
13. Kleshchanok, D., **Meijer, J.M.**, Petukhov, A.V., Portale, G. and Lekkerkerker, H.N.W. (2012) *Sedimentation and depletion attraction directing glass and liquid crystal formation in aqueous platelet/sphere mixtures*. *Soft Matter*, **8**, 191-197.
14. **Meijer, J.M.**, Hagemans, F., Rossi, L., Byelov, D., Castillo, S.I.R., Snigireva, I., Philipse, A.P. & Petukhov, A.V. (2012) *Self-Assembly of Colloidal Cubes via Vertical Deposition*. *Langmuir*, **28**, 7631-7638.
15. Leferink op Reinink, A.B.G.M., **Meijer, J.M.**, Kleshchanok, D., Byelov, D., Vroege, G.J., Petukhov, A.V. & Lekkerkerker, H.N.W. (2011) *3D structure of nematic and columnar phases of hard colloidal platelets*. *J. Phys.: Cond. Matt.*, **23**
16. Kleshchanok, D., **Meijer, J.M.**, Petukhov, A.V., Portale, G. & Lekkerkerker, H.N.W. (2011) *Attractive glass formation in aqueous mixtures of colloidal gibbsite platelets and silica spheres*. *Soft Matter*, **7**, 2832-2840.
17. **Meijer, J.M.**, Aarts, L., Ende, B.M. van der, Vlugt, T.J.H. & Meijerink, A. (2010) *Downconversion for solar cells in $YF_3:Nd^{3+}$, Yb^{3+}* . *Phys. Rev. B*, **81**, 35107.
18. Villeneuve, V.W.A. de, Miedema, P.S., **Meijer, J.M.** & Petukhov, A.V. (2007) *Grain size effects on lateral islands in hard-sphere crystals*. *Eur. Phys. Lett.* **79**, 56001.
19. **Meijer, J.M.**, Villeneuve, V.W.A. de & Petukhov, A.V. (2007) *In-Plane Stacking Disorder in Polydisperse Hard Sphere Crystals*. *Langmuir*, **23**, 3554-3560.

Oral presentations

- Sept. 2016 **4th international soft matter conference (ISMC2016)**, 'Phase Behavior, Dynamics and Directed Assembly of Bowl-Shaped Colloids', Grenoble, France
- Sept. 2015 **16th International Small-Angle Scattering conference (SAS 2015)**, 'Shape induced phase transitions in Crystals of Colloidal Cubes', Berlin, Germany
- Nov. 2014 **CHAINS: Chemistry as innovating science** 'Towards complex nano-architectures: Self-organization of cubic colloids', Veldhoven, the Netherlands.
- Feb. 2014 **NWO/CW Meeting 'Chemistry in Relation to Physics and Materials Sciences'** 'Self-assembly of Colloidal Hematite Cubes: From Ordered Layers to Single Crystals', Veldhoven, the Netherlands.
- Jun. 2013 **13th European Conference on Organized Films (ECOF13)**. 'Self-assembly of colloidal cubes via vertical deposition', Cork, Ireland.
- Nov. 2012 **15th International Small-Angle Scattering conference (SAS 2012)**, 'Self-assembly in Sedimentary Crystals of Magnetic Colloidal Cubes', Sydney, Australia.

Poster Presentations

- Apr. 2017 **Network meeting of the Alexander von Humboldt Foundation**, 'Defects and Dynamics in Complex 2D Crystals of Anisotropic Colloids', Dresden, Germany
- Sept. 2016 **30th European Colloid and Interface Society (ECIS) Conference 2016**. 'Phase behaviour, dynamics and directed self-assembly of soft repulsive bowl-shaped colloids', Rome, Italy
- Jul. 2014 **9th Liquid Matter Conference**. 'Self-assembly of Colloidal Hematite Cubes: From Ordered Layers to Single Crystals', Lisbon, Portugal.
- Jan. 2014 **Physics@FOM** 'Self-assembly of Colloidal Hematite Cubes: From Ordered Layers to Single Crystals', Veldhoven, the Netherlands. Nominated as top 3 poster.
- May. 2013 **CECAM Workshop 'The Role of Interfaces in Crystallisation'**. 'Comparison of Crystallization kinetics of Two Hard-Sphere Model systems', Lausanne, Switzerland
- Nov. 2012 **15th International Small-Angle Scattering conference (SAS 2012)**, 'Crystalline Films of Colloidal Silica Cubes', Sydney, Australia.
- Sept. 2011 **8th Liquid Matter Conference**. '3D ordering of colloidal cubes', Vienna, Austria.
- Jun. 2011 **SYnchrotron and NEutron Workshop (SYNEW)** '3D ordering of colloidal cubes', Amsterdam, The Netherlands.