

LAURA ROSSI

Institutional Address:

Delft University of Technology
Van der Maasweg 9
2629 HZ Delft
the Netherlands

E-mail: L.Rossi@tudelft.nl**Phone:** +31 15 278 7980**Language:** Italian, English, Dutch (level B1).**Web:** www.mycolloids.com

ACADEMIC POSITIONS

Assistant Professor	<i>Delft University of Technology</i> , the Netherlands	Since Aug '18
Veni fellow	<i>University of Amsterdam</i> , the Netherlands	Aug '15- July '18
Postdoctoral researcher	<i>University of Amsterdam</i> , the Netherlands under the supervision of Prof. Peter Schall	Feb '15-July '15
Postdoctoral scholar	<i>University of California-Los Angeles</i> , USA under the supervision of Prof. Thomas G. Mason, partially funded by a NWO Rubicon grant	Jan '13-Dec '14

EDUCATION

Ph.D.	van't Hoff Laboratory for Physical and Colloid Chemistry, <i>Utrecht University</i> , the Netherlands under the supervision of Prof. Albert P. Philipse and Prof. William T. M. Irvine (University of Chicago). Thesis title: <i>Colloidal Superballs</i> . Defense date: 11 June 2012.	Jun '08-Jun '12
Visiting student	Center for Soft Matter Research, Department of Physics, <i>New York University</i> , U.S.A.	Oct '09-Dec '09
M.Sc.	Chemistry and Physics with honors (cum laude), <i>Utrecht University</i> , the Netherlands.	Nov '05-Jan '08
Internship	<i>Unilever R&D</i> , Vlaardingen, the Netherlands.	May '07-Oct '07
B.Sc.	Chemical Sciences, <i>University of Pavia</i> , Italy.	Oct '02-Oct '05

EQUIPMENT GRANTS

XRD experiment:	awarded 12 shifts at ID13 beamline at ESRF	Oct 2021
SAXS experiments:	awarded 12 shifts at the DUBBLE facility at ESRF	June 2021
SAXS experiments:	awarded 12 shifts at the DUBBLE facility at ESRF	October 2017

RESEARCH GRANTS

NWO Veni grant	for the development of an independent line of research for a period of three years at the University of Amsterdam (€ 250 000).	2015-2019
FOM/v	for a three years postdoc at UvA. Awarded but declined.	2015-2018
APS	grant to attend the Professional Skills Development Workshop for Women Physicists in Denver, Colorado, USA (\$ 400).	2014
NWO Rubicon	for a stay of 24 months in the USA at UCLA (\$ 87000).	2013-2015
ERASMUS grant	Exchange Project BSc-thesis, for a stay of 10 months at Utrecht University.	2004-2005

PUBLICATIONS

Refereed Journal Articles

21. L. Baldauf, E. G. Teich, P. Schall, G. van Anders* and L. Rossi* *Colloidal clusters of superballs in confinement*, **Science Advances**, in press, (2022) <http://arxiv.org/abs/1909.10361>.
20. S. N. Schyck, J.-M. Meijer, L. Baldauf, P. Schall, A.V. Petukhov and L. Rossi* *Self-assembly of colloidal superballs under spherical confinement of a drying droplet*, **Journal of Colloid and Interface Science Open**, 5, 100037, (2022).
19. J. G. Donaldson, P. Schall and L. Rossi* *Magnetic coupling in colloidal clusters for hierarchical self-assembly*, **ACS Nano**, 15, 4989-4999 (2021).
18. J.-M. Meijer and L. Rossi* *Preparation, properties, and applications of magnetic hematite microparticles*, **Soft Matter**, 17, 2354-2368, (2021).
Work featured on the [journal cover](#).
17. Y. C. Saraswat, F. Ibis, L. Rossi, L. Sasso, H. B. Eral* and P. Fanzio *Shape anisotropic colloidal particle fabrication using 2-photon polymerization*, **Journal of Colloid and Interface Science**, 564, 43-51 (2020).
16. L. Rossi*, J.G. Donaldson*, J.-M. Meijer, A. V. Petukhov, D. Kleckner, S.S. Kantorovich, W. T. M. Irvine, A. P. Philipse and S. Sacanna* *Self-organization in dipolar cube fluids constrained by competing anisotropies*, **Soft Matter**, 14, 1080-1087 (2018).
Work featured on the [journal cover](#).
15. L. Rossi*, V. Soni*, D. J. Ashton, D. J. Pine, A. P. Philipse, P. M. Chaikin, M. Dijkstra, S. Sacanna and W. T. M. Irvine* *Shape-sensitive crystallization in colloidal superball fluids*, **Proc. Natl. Acad. Sci. U. S. A.**, 112(17), 5286-5290 (2015).
14. L. Rossi* and T. G. Mason* *Controlling enantiomeric populations in fluctuating Brownian monolayers of chiral colloids*, **Soft Matter**, 11, 2461-2468 (2015).
13. L. Rossi*, K. P. Velikov* and A. P. Philipse *Colloidal iron(III) pyrophosphate particles*, **Food Chemistry**, 151, 243-247 (2014).
12. J.-M. Meijer, D. V. Byelov, L. Rossi, A. Snigirev, I. Snigireva, A. P. Philipse and A. V. Petukhov* *Self-assembly of colloidal hematite cubes: a microradian X-ray diffraction exploration of sedimentary crystals*, **Soft Matter**, 9, 10729-10738 (2013).
11. D. V. Byelov*, J.-M. Meijer, I. Snigireva, A. Snigirev, L. Rossi, E. van den Pol, A. Kuijk, A. P. Philipse, A. Imhof, A. van Blaaderen, G. J. Vroege and A. V. Petukhov *In-situ hard x-ray microscopy of self-assembly in colloidal suspensions*, **RSC Advances**, 3, 15670 (2013).
10. J.-M. Meijer*, F. Hagemans, L. Rossi, D. V. Byelov, S. I. R. Castillo, A. Snigirev, I. Snigireva, A. P. Philipse and A. V. Petukhov *Self-assembly of colloidal cubes via vertical deposition*, **Langmuir**, 28, 7631-7638 (2012).

9. S. Sacanna*, [L. Rossi](#) and D. J. Pine *Magnetic click colloidal assembly*, **Journal of the American Chemical Society**, 134, 6112-6115 (2012).
In the news: Phys.org, *Particles magnetically "click" to form superstructures*, 2012
8. [L. Rossi](#)*, S. Sacanna, W. T. M. Irvine, P. M. Chaikin, D. J. Pine and A. P. Philipse* *Cubic crystals from cubic colloids*, **Soft Matter**, 7, 4139-4142 (2011).
Work featured on the journal cover.
In the press: Quest, *Kleine kubus stapelt zichzelf*, April 2011
7. A. V. Kyrylyuk*, M. A. van de Haar, [L. Rossi](#), A. Wouterse and A. P. Philipse *Isochoric Ideality in Jammed Random Packings of Non-Spherical Granular Matter*, **Soft Matter**, 7, 1671-1674 (2011).
6. S. Sacanna*, W. T. M. Irvine, [L. Rossi](#) and D. J. Pine *Lock and key colloids through polymerization-induced buckling of monodisperse silicon oil droplets*, **Soft Matter**, 7, 1631-1634 (2011).
Work featured on the [journal cover](#).
5. [L. Rossi](#), S. Sacanna and K. P. Velikov* *Cholesteric colloidal liquid crystals from phytosterol rod-like particles*, **Soft Matter**, 7, 64-67 (2011).
4. [L. Rossi](#), J. W. M. Seijen ten Hoorn, S. M. Melnikov and K. P. Velikov* *Colloidal phytosterols: synthesis, characterization and bioaccessibility*, **Soft Matter**, 6, 928-936 (2010).
3. S. Sacanna, [L. Rossi](#) and A.P. Philipse* *Oil-in-water emulsification induced by ellipsoidal hematite colloids: evidence for hydrolysis-mediated self-assembly*, **Langmuir**, 23(20), 9974-9982 (2007).
2. S. Sacanna*, [L. Rossi](#), A. Wouterse and A.P. Philipse *Observation of a shape-dependent density maximum in random packings and glasses of colloidal silica ellipsoids*, **Journal of Physics: Condensed Matter**, 19(37), 376108-376124 (2007).
1. S. Sacanna*, [L. Rossi](#), B.W.M. Kuipers and A.P. Philipse* *Fluorescent monodisperse silica ellipsoids for rotational diffusion studies*, **Langmuir**, 22(4), 1822-1827 (2006).

Book chapters

1. [L. Rossi](#) *Magnetic colloids as building blocks for complex structures: preparation and assembly*, in "Self-assembly of nano- and micro-structured materials using colloidal Engineering", Ed. S. Sacanna and D. Chakrabarti, Elsevier (2019).

Opinion pieces

1. [L. Rossi](#), *What my coach gave me*, **Science**, 373(6562), 1546 (2021).

Others

1. "The building blocks of new materials" Article highlighting my research work in the magazine *EU Research*, WINT18/P42.

SUPERVISION

- At TU Delft: 1 postdoc, 1 PhD student, 5 master students, 2 bachelor students, 1 PhD visiting student, 2 internship students (master level).
- At UvA: 2 internship students (master level), 2 master students, 1 bachelor student.

INVITED TALKS

- | | | |
|----------------------------------|--|---------|
| LYBER Symposium 2022 | <i>'Shape- and dipole-driven colloidal self-assembly'</i> ,
Helsinki, Finland . | May '22 |
| i-PCG 2020 Webinar series | <i>'Magnetic colloids: dipole-driven colloidal assembly'</i> | May '20 |

SPC 1st Lustrum symposium	<i>‘Colloidal superballs: depletion- and dipole-driven assembly’</i> , <u>Eindhoven, the Netherlands.</u>	March '20
ETH Zurich	<i>‘Effect of shape anisotropy and dipolar interactions on colloidal assembly’</i> , <u>Zurich, Switzerland.</u>	Dec '19
25th Soft Matter Meeting	<i>‘Effect of shape anisotropy and dipolar interactions on colloidal assembly’</i> , <u>Amsterdam, the Netherlands.</u>	Nov '18
University of Konstanz	<i>‘Self-assembly of designer colloids: shape anisotropy and directional interactions’</i> , <u>Konstanz, Germany.</u>	July '18
ESPCI Gulliver Seminar	<i>‘Colloidal design for self-assembly of novel materials’</i> , <u>Paris, France.</u>	Nov '17
Radboud University	<i>‘Colloidal design for self-assembly’</i> , <u>Nijmegen, the Netherlands.</u>	Feb '17
19th Soft Matter Meeting	<i>‘Self-assembly of magnetic colloids’</i> , <u>Utrecht, the Netherlands.</u>	Nov '15
TU/e	<i>‘Directing self-assembly of colloidal superballs’</i> , <u>Eindhoven, the Netherlands.</u>	Jul '15
UCSD	<i>‘Colloidal superballs’</i> , <u>San Diego, USA.</u>	Jul '13
UCLA	<i>‘Colloidal superballs’</i> , <u>Los Angeles, USA.</u>	June '12
University of Chicago	<i>‘Colloidal superballs’</i> , <u>Chicago, USA.</u>	March '11
Optimal 2010	<i>‘Observation of a shape-dependent random packing density maximum for colloidal ellipsoids’</i> , <u>Nashville, USA.</u>	May '10
NYU	<i>‘Random packing and colloidal crystallization of monodisperse ellipsoids’</i> , <u>New York, USA.</u>	Feb '09

CONTRIBUTED TALKS

APS March Meeting	<i>‘Magnetic coupling in colloidal clusters for hierarchical self-assembly’</i> , online.	March '21
IACIS 2018	<i>‘Synthesis of hematite microswimmers with enhanced photoactivity’</i> , Rotterdam, the Netherlands.	May '18
ECIS 2017	<i>‘Colloidal Hematite Cubes: Magnetic Properties and Self-Assembly’</i> , Madrid, Spain.	Sept '17
APS March Meeting	<i>‘Preparation and assembly of magnetic patchy colloids’</i> , New Orleans, USA.	March '17
Italian Soft Days	<i>‘Self-assembly of magnetic patchy particles’</i> , Milan, Italy.	June '16
APS March Meeting	<i>‘Crack propagation in attractive colloidal systems’</i> , Baltimore, USA.	March '16
ASGSR Annual Meeting	<i>‘Shape-sensitive crystallization in colloidal superball fluids’</i> , Pasadena, USA.	Oct '14

ACS Colloids & Surface Science Symposium	<i>'Shape-sensitive crystallization in colloidal superball fluids'</i> , Philadelphia, USA.	June '14
Physics@FOM	<i>'Depletion stabilized crystal phases of colloidal superballs'</i> , Veldhoven, the Netherlands.	Jan '12
Chains	<i>'Colloidal superballs'</i> , Maarsse, the Netherlands.	Nov '11
APS March Meeting	<i>'Cubic crystals from cubic colloids'</i> , Dallas, USA.	March '11
9th Soft Matter Meeting	<i>'Cubic crystals from cubic colloids'</i> , Leiden, the Netherlands.	Nov '10
ECIS 2010	<i>'Depletion driven crystallization of colloidal cubes'</i> , Prague, Czech Republic.	Sept '10
ICSCS 2009	<i>'Random packing and colloidal crystallization of monodisperse model ellipsoids'</i> , New York, USA.	June '09
NWO/CW Meeting	<i>'Colloidal glasses and crystals of monodisperse ellipsoids'</i> , Lunteren, the Netherlands.	Feb '09

OUTREACH AND VOCATIONAL ACTIVITIES

KNCV Career Event	<i>'Research in academia'</i> , Leiden, the Netherlands.	Feb '20
Lecture and lab experience for 37 high school students on <i>NMR spectroscopy</i> , TU Delft		Feb '20
Lecture and lab experience for 20 to 25 high school students on <i>magnetic fluids</i> , Amsterdam International Community School		'16, '17, '18
Talk at "Viva Fysica!"	<i>'Colloid Science: from magnetism to novel materials'</i> , Amsterdam, the Netherlands	Jan '17

PROFESSIONAL TRAINING

University Teaching Qualification (BKO) University of Amsterdam, NL		Jan. '18
Personal Leadership in an Academic Context (for Veni laureates) University of Amsterdam, NL		Apr. '16-Jan. '17
Preparing Future Faculty: Issues in Higher Education University of California Los Angeles, USA		Fall '14
APS Professional Skills Development Workshop for Women Physicists Denver, Colorado, USA		March '14
Career Planning as a Process University of California Los Angeles, USA		Nov '13
Women in Science and Engineering University of California Los Angeles, USA		Nov '13
Funding Your Research - How to Get Started University of California Los Angeles, USA		Oct '13

Activating didactics in an intercultural perspective
Utrecht University, the Netherlands

Jan '11

TEACHING

Guest lecturer graduate chemistry course '**Colloid Science**' NYU:
1 lecture on magnetic colloids and interactions, 6 students

Apr '21

Lecturer and responsible teacher graduate chemical engineering course
'**Advanced Interfacial Engineering**' TU Delft
elective course (5-15 students), 28 hours

a.y. '19-'20/'20-'21

Lecturer graduate chemical engineering course
'**Molecular Transport Phenomena**' TU Delft
core course for Chemical Engineering (160-190 students), 56-84 hours with a co-teacher

a.y. '18-'19/'19-'20

Guest lecturer graduate physics and chemistry course
'**Colloid Science**' Utrecht University
1 lecture on anisotropic colloids, 50 students, lecture used for BKO portfolio

Oct '17

Lecturer graduate physics course
'**Hydrodynamics**' University of Amsterdam
elective course (20 students), 42 hours with 3 co-teachers, course used for BKO portfolio

a.y. '16-'17

Guest lecturer undergraduate chemistry course
'**Chemical Structure**' UCLA:
1 lecture on balancing chemical equations, 200 students

Oct '14

SYNERGISTIC ACTIVITIES

Sounding board member of DEWIS (women's network of scientists at the TU Delft)

Since 2022

Guest Editor for a Special Issue on Colloidal Self-Assembly
Journal of Physics: Condensed Matter

2020-2021

Editorial Board Member
Journal of Colloids and Interface Science Open

Since Nov 2020

NWO KLEIN member of the Domain Science Selection Committee

Aug 2020

Advisory Appointment Committee (BAC) member for
three tenure track candidates Faculty of Applied Sciences

Nov 2020

Advisory Appointment Committee (BAC) member for
five tenure track candidates Faculty of Aerospace Engineering

Since May '20

PhD defense committee member:

Fatma Ibis, Delft University of Technology, the Netherlands
Michelle van der Helm, Delft University of Technology, the Netherlands
Apurve Saini, Uppsala University, Sweden
Karsten Baumgarten, Delft University of Technology, the Netherlands

June 2022

March 2020

Jan 2020

April 2019

Chemical Engineering Faculty Colloquium organizer
TU Delft

Since 2019

Session chair at Physics@Veldhoven

Jan. 2019

<p>MSc and BSc defense committee member: 9 MSc students and 5 BSc students</p>	Since Aug '18
<p>NWO Advisory Committee member for the “Physics of Fluids and Soft Matter” research community</p>	Since 2018
<p>Works Council (OR) Committee member of the Faculty of Applied Sciences division</p>	Since 2018
<p>Session chair at Chains</p>	Dec. 2017
<p>Reviewer activity for: Soft Matter, Journal of Physics D: Applied Physics, Colloid and Surfaces A: Physicochemical and Engineering Aspects, Journal of Visualized Experiments, Nanoscale, Langmuir, Journal of the American Chemical Society, PNAS.</p>	Since 2012