

CURRICULUM VITAE – Prof. J.H. SNOEIJER

University of Twente & Technical University of Eindhoven

Physics of Fluids
Faculty of Science and Technology
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Research Interests

- **Contact line dynamics**

sliding drops; Landau-Levich films; wetting dynamics; immersion lithography and coating; van der Waals interactions; hysteresis; air entrainment

- **Elasticity & Adhesion**

wetting & adhesion of soft materials, lubrication of soft bodies, elasto-capillary instabilities, Shuttleworth effect

- **Drops and bubbles**

collapsing bubbles; entrapment; surface nanobubbles; Leidenfrost effect; freezing drops; deposition and drying; evaporation; drop impact and coalescence; singularities; inkjet printing

- **Granular materials**

statistical mechanics of granular media; force networks; rheology; acoustic response; suspensions

Education

- **Ph.D.**

2000 – 2003

Instituut-Lorentz for Theoretical Physics, Leiden University, the Netherlands

Supervisors: Prof. Dr. W. van Saarloos and Dr. M. van Hecke

Thesis title: Statistics of Force Networks in Granular Media

- **Masters**

1993 – 1999

University of Twente, the Netherlands

Supervisor: Prof. Dr. P.J. Kelly

Thesis title: Adsorption of Si on the Ge(100) surface

Employment

2017 – present	Professor, Capillary Flows & Elasticity, Physics of Fluids Group, University of Twente, Enschede, The Netherlands
2013 – present	Professor (0.2 FTE), Capillary interactions of fluids and soft matter, Mesoscopic Transport Phenomena group, University of Eindhoven, The Netherlands
2013 – 2016	Adjoint Professor Physics of Fluids Group, University of Twente, Enschede, The Netherlands
2011 – 2013	Associate Professor Physics of Fluids Group, University of Twente, Enschede, The Netherlands

2008 – 2011	Assistant Professor Physics of Fluids Group, University of Twente, Enschede, The Netherlands
2006 – 2008	Postdoctoral Marie Curie Fellow School of Mathematics, University of Bristol, United Kingdom
2004 – 2006	Postdoctoral Marie Curie Fellow Laboratoire de Physique et de Mécanique des Milieux Hétérogènes (PMMH) Ecole Supérieure de Physique et de Chimie Industrielles in Paris, France
1999 – 2000	Part time teacher at the Hogeschool Enschede, the Netherlands

Honors & Awards

2016	Leen van Wijngaarden Prize 2015, JM Burgers Center, for excellence in fluid mechanics for a researcher less than 40 years
2014	Milton van Dyke Award, Gallery of Fluid Motion, “Laser impact on a liquid drop”, Division of Fluid Dynamics, American Physical Society Meeting, San Francisco, Nov. 2014.
2013	ERC Consolidator grant “Soft Wetting”, Nov. 2013
2012	Winner “Education Award Applied Physics 2012”, University of Twente, Mar. 2012.
2012	Member of the Young Academy of the University of Twente, March. 2012.
2011	Milton van Dyke Award, Gallery of Fluid Motion, “Freezing singularities in water drops”, Division of Fluid Dynamics, American Physical Society Meeting, Baltimore, Nov. 2011.
2011	Visiting Professor, Université Paris 7
2011	Physical Review Letters selected our paper <i>Order-to-disorder transition in ring-shaped colloidal stains</i> , Marin, Gelderblom, Lohse and Snoeijer, Phys. Rev. Lett. 107 , 085502 (2011), as Editors Suggestion and issued a special Viewpoint article.
2010	VIDI laureate Innovational Research Incentives Scheme, Dutch Science Foundation
2010	Milton van Dyke Award, Gallery of Fluid Motion, “Avalanche of particles in evaporating coffee drops”, Division of Fluid Dynamics, American Physical Society Meeting, Long Beach, Nov. 2010.
2006	Marie Curie Intra-European Fellowship
2004	Marie Curie Intra-European Fellowship

Grants & Research contracts

▪ Principal Investigator

2016	“Dynamics of wetting ridges”, 1 PhD within Marie Curie Research and Initial Training Network “Lubricant impregnated Slippery Surfaces”
2016	“Coalescence of complex droplets”, 1 PhD within FOM-IPP “Fundamental Fluid Dynamics challenges in Inkjet printing”
2013	“Soft Wetting”, 3 PhD, 1 postdoc, ERC Consolidator Grant
2012	“Inkjet printing of suspensions”, 1 PhD, Dutch Polymer Institute, collaboration with Holst Center, TNO
2011	“Drying in the presence of flow and surface tension gradients”, 1 PhD, contract with LAM Research
2010	“Inertial contact lines: how wetting affects large scale flows”, 1 PhD and 1 postdoc, VIDI (STW/NWO)
2009	“Effect of acceleration on contact line dynamics”, 1 PhD within Marie Curie Research and Initial Training Network S.P.A.M,
2008	“Theory of contact line (in)stability”, 1 PhD within FOM-IPP “Contact line control during wetting and dewetting”, with ASML and OCE

▪ Postdoctoral Fellowships

- 2006 “Impacting drops”,
Marie Curie Intra-European Fellowship
- 2004 “Singularities near a moving contact lines: from sliding drops to avalanches”,
Marie Curie Intra-European Fellowship

▪ **Other**

- 2013 co-applicant of FOM Industrial Partnership Programme “Fundamental fluid dynamics challenges of extreme ultraviolet lithography”, with ASML.
1 programme leader & 3 PhD positions
- 2008 I was one of the initiators of the FOM Industrial Partnership Programme “Contact line control during wetting and dewetting”, with ASML & OCE.
6 PhD positions

Publications & Talks

▪ **Publications (H-index Web of Knowledge: 28, Google Scholar: 36)**

1 paper in Nature Communications, 3 paper in PNAS, 15 papers in Physical Review Letters
2 invited reviews (Soft Matter 2010, Ann. Rev. Fluid Mech. 2013)
90 peer reviewed papers

▪ **Invited Talks**

- 2017 COST workshop on Dynamics of Interfaces in Complex Fluids, Erlangen
- 2016 Kickoff collaborative research center on wetting phenomena, Darmstadt
- 2016 American Association of Physics Teachers, New Orleans
- 2015 American Physical Society, Division of Fluid Dynamics
- 2015 Gordon Research Conference on Science of Adhesion, South Hadley, Massachusetts
- 2015 International Conference of the International Association of Colloid and Interface Science (IACIS 2015), Mainz, Germany
- 2015 Nonlinear dynamics of structure formation at interfaces, Muenster, Germany
- 2014 10th European Fluid Mechanics Conference, EUROMECH, Copenhagen, Denmark
- 2014 Americal Physical Society, March Meeting, Denver
- 2014 Biannual conference of the Canadian Society for Mechanical Engineering, Toronto, Canada
- 2013 European Coating Symposium 2013, Mons, Belgium
- 2013 Micromast Annual meeting, Durbuy, Belgium
- 2013 Summerschool on Complex Motion in Fluids, Krogerup, Denmark,
- 2013 Invited lecture series, Institut de Physique, Université de Rennes, France
- 2013 Spring meeting Deutsche Physikalische Gesellschaft, Regensburg, Germany
- 2012 International workshop on Multiscale Complex Fluid Flows and Interfacial Phenomena, Dresden, Germany
- 2012 International Symposium on Surfactants in Solution, Alberta, Canada
- 2011 Canadian Congress of Applied Mechanics, Vancouver, Canada,
- 2010 Workshop on Capillary shaping of solutes, Leiden, the Netherlands
- 2009 Workshop on Flow of Foams, Leiden, the Netherlands
- 2008 Dutch Soft Matter Meeting, Eindhoven, the Netherlands
- 2007 Symposium on Dynamics of Patterns, Enschede, the Netherlands
- 2005 Session on Granular Matter, Institut Henri Poincaré, Paris, France
- 2003 Plenary talk at annual FOM meeting on condensed matter, Veldhoven, the Netherlands

▪ **Other Talks**

35 invited group seminars
20 international conferences and workshops

Supervision

▪ As principal supervisor

Postdoc	Maxime Costalonga (2016-2018) Hadi Mehrabian (2014-2016) Stefan Karpitschka (2014-2016) Marie-Jean Thoraval (2013-2015) Antonin Eddi (2011-2013) Francois Boyer (2012-2013) Siddhartha Das (2009-2011)
Ph.D	Liz Mensink (defense 2019) Anupam Pandey (defense 2018) Mathijs van Gorcum (defense 2018) Wilco Bouwhuis (2011-2015) Federico Hernandez Sanchez (2011-2015) Koen Winkels (2009-2013) Tak Shing Chan (2008-2012)
MSc.	Michiel Hack (2017) Myrthe Bruning (2016) Martijn van der Ouderaa (2015) Bram Stapelbroek (2013) Wolter van der Velde (2013) Luuk Lubbers (defense 2013) Maurice Hendrix (2013) Oscar Bloemen (2011) Diederik Keij (2011) Dimitrios Razis (2010) Joost Weijs (2010)
Erasmus	Thomas Gueudré (2010) Jean-Christophe Giret (2009)

▪ As co-supervisor

Postdoc	Alvaro Marin (2009-2011)
Ph.D.	Maciej Chudak (defense 2020) Sten Reijers (defense 2019) Marise Gielen (defense 2017) Enrique Sandoval (defense 2016) Joost Weijs (2010-2013) Hanneke Gelderblom (2009-2013) Stefan von Kann (2008-2012) Johanna Ziegler (during postdoc Bristol) Giles Delon, Nolwenn LeGrand, Emmanuelle Rio (during postdoc Paris)
MSc.	Wilco Bouwhuis (2011) Theo Driessen (2010)

Teaching

▪ Undergraduate

2008 – present	University of Twente, Enschede, The Netherlands Dynamics & Relativity, Introduction to Fluid Mechanics, Advanced Fluid Mechanics, Fluids & Elasticity, Granular Matter, Supervision internships and
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- master projects.
 Module coordinator Dynamica & Relativity
 2006 – 2008 School of Mathematics, University of Bristol, United Kingdom.
 Tutorials on Calculus and Mechanics (1st year).
 Stand-in lecturer Mechanics (1st year).
 2000 – 2003 Physics Department of the Leiden University, the Netherlands.
 Tutorials on Statistical Physics (3rd year), Classical Mechanics for (1st year) and
 Classical Mechanics (2nd year).
 1999 – 2000 Hogeschool Enschede, the Netherlands. Preparatory physics courses serving as an
 entry requirement for a Bachelor in Civil and Electronic Engineering.

▪ **Postgraduate courses**

- 2017 *Capillary flows*,
 Dutch Winterschool on Physical Chemistry, Han-sur-Lesse, Belgium
 2016 *Self-similarity in capillary flows*,
 Micromast Springschool on ‘Fundamentals of surface tension and wetting’,
 Bruxelles, Belgium
 2015 *Wetting & variational principles in capillarity*,
 JMBC course ‘Capillarity-driven flows in microfluidics’, De Lutte, The Netherlands
 2015 *Capillarity & Elasticity*,
 Dutch Winterschool on Physical Chemistry, Han-sur-Lesse, Belgium
 2013 Lubrication theory & drop coalescence, Summerschool on ‘Complex motion in
 fluids’, Krogerup, Denmark
 2013 *Hydrodynamics of wetting phenomena*,
 Invited lecture series, Institut de Physique, Université de Rennes, France
 2013 *Wetting, similarity solutions & contact line dynamics*,
 JMBC course ‘Capillarity-driven flows in microfluidics’, De Lutte, The Netherlands
 2013 *Dynamics of wetting*,
 Dutch Winterschool on Physical Chemistry, Han-sur-Lesse, Belgium
 2011 *Lubrication, Landau-Levich films & contact line dynamics*,
 JMBC course ‘Capillarity-driven flows in microfluidics’, Enschede, The Netherlands
 2011 *Contact line dynamics*,
 Winterschool Marie Curie Training Network S.P.A.M., Delft, The Netherlands
 2010 *Force networks in static granular matter*,
 JMBC course “Physics of granular matter”, Enschede, The Netherlands
 2009 *Lubrication, Landau-Levich films & contact line dynamics*,
 JMBC course ‘Capillarity-driven flows in microfluidics’, Enschede, The Netherlands
 2009 *Physics of dense granular matter*,
 Dutch Research School for Theoretical Physics (DRSTP), Driebergen, The
 Netherlands

Organization & Committees

▪ **Conferences and workshops (co-organizer)**

- 2015 Lorentz Center workshop “Capillarity of Soft Interfaces”, Leiden, The Netherlands
 2015 “Droplets 2015”, University of Twente, The Netherlands
 2015 “Fluid & Elasticity”, 3rd international conference, Biarritz, France
 2014 “Flow 14: 1st international conference on micro and nanofluidics”, University of
 Twente, The Netherlands
 2013 Focus session on “Wetting of soft materials”, Physics@FOM, Veldhoven, The
 Netherlands
 2012 - present Member program committee “Physics With Industry”, Leiden, The Netherlands
 2011 Case study at “Physics With Industry”, Leiden, The Netherlands
 2010 Symposium “Complexity & Patterns”, Enschede, The Netherlands
 2010 Lorentz Center workshop “Contact Line Instabilities” Leiden, The Netherlands
 2009 Focus session on “Contact line dynamics”, Physics@FOM, Veldhoven, The
 Netherlands
 2008 – 2010 Various “Dynamics of Patterns Days”, Amsterdam, The Netherlands

2007 – 2008 Fluids Group Seminar, University of Bristol, United Kingdom

▪ **Postgraduate courses (co-organizer)**

2016 Summerschool “Complex Motion in Fluids”, Zenderen, The Netherlands
2015 JMBC course “Capillarity-driven flows in microfluidics”, Enschede, The Netherlands
2013 JMBC course “Capillarity-driven flows in microfluidics”, Enschede, The Netherlands
2011 JMBC course “Capillarity-driven flows in microfluidics”, Enschede, The Netherlands
2010 JMBC course “Physics of Granular Matter”, Enschede, The Netherlands
2009 JMBC course “Capillarity-driven flows in microfluidics”, Enschede, The Netherlands

▪ **Other**

2015 – 2016 Chair Scientific Advisory Board (physics) of the Lorentz Center
2015 – 2016 Member Scientific Advisory Board (physics) of the Lorentz Center
2013 – present Member Scientific Advisory Board for “Micromast”, Belgian research network on Micromanipulation and Microfluidics.
2013 – present Member OLC-TN (Education committee), University of Twente
2013 – 2015 Board of the Young Academy of the University of Twente
2012 – present Member of the Young Academy of the University of Twente
2011 – 2014 Mentor Bachelor students Applied Physics, University of Twente
2010 – 2012 Member of OKC-TN (Quality of education), University of Twente
2009 – present Mentor Master students at Physics of Fluids (internships, masterprojects)
2001 – 2003 Member of the Institute Council at the Leiden Institute of Physics, University of Leiden, the Netherlands

Popularization and Outreach

2017 Press coverage on our article *On the shape of giant soap bubbles*, Cohen, Darbois-Texier, Reyssat, Snoeijer, Quere and Clanet, PNAS 2017, by Le Monde
2016 Press coverage on our article *Liquid drops attract or repel by the inverted Cheerios effect*, Karpischka, Pandey, Lubbers, Weijs, Botto, Das, Andreotti and Snoeijer, PNAS 2016, by New York Times and various international websites.
2016 Appearance on Dutch TV Show “De Kennis van Nu”, February 2016
2015 Press coverage on our article *Drop shaping by laser-pulse impact*, Klein, Bouwhuis, Visser, Lhuissier, Sun, Snoeijer, Villermaux, Lohse and Gelderblom, Phys. Rev. Appl. 2015, in national newspaper NRC
2014 Press coverage on our article *Physics of the granite sphere fountain*, Snoeijer and van der Weele, Am. J. Physics 2014, in national newspaper NRC
2013 Contribution to the Dutch National Science Quiz
2012 Science café lecture on *Huis, tuin en keukenfysica*, Enschede,
2012 Press coverage on our article *Freezing singularities in water drops*, Enriquez, Marin, Winkels and Snoeijer, Phys. Fluids 2012, in national newspaper NRC Handelsblad, Daily mail and various international websites. Articles can be downloaded: <http://stilton.tnw.utwente.nl/people/snoeijer/>
2012 Press coverage on our article *Building microscopic soccer-balls with evaporating colloidal fakir drops Order-to-disorder transition in ring-shaped colloidal stains*, Marin, Gelderblom, A. Susarrey-Arce, A. van Houselt, L. Lefferts, H. Gardeniers, D. Lohse and J.H. Snoeijer, PNAS 2012, in national newspaper De Volkskrant. Article can be downloaded: <http://stilton.tnw.utwente.nl/people/snoeijer/>
2012 Article in Dutch Physics Journal:
Fysica aan de koffietafel, Nederlands Tijdschrift voor Natuurkunde
2012 Appearance in Dutch radio show “Hoe?Zo!”, June 2012
2012 Contribution to the Dutch Scientific Calender 2012 (Wetenschappelijke Scheurkalender)
2011 Our “Freezing drops” appear as a question in the Dutch National Science Quiz
2011 Press coverage on our article *Order-to-disorder transition in ring-shaped colloidal stains*, Marin, Gelderblom, Lohse and Snoeijer, Phys. Rev. Lett. **107**, 085502 (2011), in national newspapers NRC Handelsblad, NRC Next, de Telegraaf. Articles can be downloaded: <http://stilton.tnw.utwente.nl/people/snoeijer/>

References

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