

Curriculum Vitae  
Anke Lindner, PMMH-ESPCI, Paris, France  
October 2023

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### Personal information

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Researcher unique identifier(s): Research ID: F-3305-2010, google scholar profile Anke Lindner, <https://orcid.org/0000-0002-5007-9568>

Date of birth: 12/09/1971,

Nationality: German,

Marital status: Partner, 2 children

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### Education

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2010 Habilitation, UPMC, Paris

*"Flow induced phenomena in structured fluids"*

1998-2000 Doctorate in Physics of Fluids at the "Ecole Normale Supérieure de Paris"

*"Saffman-Taylor instability in complex fluids"* supervised by J. Meunier and D. Bonn

1996-1997 Master theses at the Theoretical Physics, University of Bayreuth, Germany

*"Pattern formation in liquid crystals"* supervised by L. Kramer

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### Current position

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Since 2021 Professor (Classe Exceptionnelle 1), Université de Paris, France

Since 2018 Professor (PR1), University Paris Diderot, Paris, France

2013-2018 Professor (PR2), University Paris Diderot, Paris, France

Research at the laboratory PMMH (Physique et Mécanique des Milieux Hétérogènes) of the ESPCI (Ecole Supérieure de Physique et Chimie de la Ville de Paris), Paris, France

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### Previous positions

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2002-2013 Assistant Professor Université Pierre et Marie Curie, Paris, France

2001- 2002 Post-Doctorate at the PPMD, ESPCI, France

*"Debonding of soft adhesives"* with C. Creton

2000- 2001 Consultant, McKinsey & Comp., international management consulting, Zurich, Switzerland

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### Research activities

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My research topics can best be summarized as "flow of complex fluids" and cover a broad range of topics from rheology of granular or active suspensions, to adhesion of soft viscoelastic materials and more recently fluid structure interactions, microfluidics and elastic flow instabilities. My fundamental experimental work has always attracted the interest of industrial partners.

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### Major collaborations

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To complement my experimental activities, I have developed strong collaborations, acknowledged by common publications, with theoreticians on an international level. Ongoing collaborations: Mike Shelley, Courant Institute, New York, USA, David Saintillan (UCSD, USA) (active suspensions, fluid-structure interactions); Howard Stone, Princeton University, USA (fluid-structure interactions in confined flows); Manuel Alves, Porto,

Portugal, Rob Poole, University of Liverpool, UK and Alexander Morozov, University of Edinburgh, UK (elastic flow instabilities). I also collaborate with Al Crosby, Amherst University, USA (fabrication techniques, adhesion).

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### **Supervision of graduate students and postdoctoral fellows**

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I have supervised 19 PhD students (6 ongoing), 3 exchange PhD students from USA and Europe, 13 PostDocs (3 ongoing) and numerous Master students. My former students now work as assistant professors at the University of Lyon (O. Ramos), Univ. Pierre et Marie Curie Paris (E. Wandersman), Univ. Montpellier (L. Casanellas) or Univ. Düsseldorf (J. Nase), Perdue University (Chelsea Davis) or in industrial R&D at Total (H. Berthet), France, Arcema, France (F. Tanguy), biomedical start-up companies as Aratinga (Charles Duchenes), Overture-Life, Madrid (Joana Fidalgo) or the Norwegian Geotechnical Institute, Oslo (O. Johnsen).

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### **Fellowships and awards**

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2021	Silver medal of the CNRS <a href="https://www.youtube.com/watch?v=J6qV97eyFDQ&amp;ab_channel=CNRS">https://www.youtube.com/watch?v=J6qV97eyFDQ&amp;ab_channel=CNRS</a> <a href="https://youtu.be/cdml6Vi9WB0">https://youtu.be/cdml6Vi9WB0</a>
Since 2020	Member of the Institute Pierre-Gilles de Gennes for Microfluidics
Since 2019	Fellow of the Division of Fluid Dynamics (DFD) of the American Society of Physics (APS)
2019	Annual award of the French Society of Rheology “Prix Maurice Couette”
2018	Invited Professor, Univ. Massachusetts, Amherst (2 month)
2016-2021	Member of the Global Station for Soft Matter, Hokkaido University, Japan
2015	ERC Consolidator grant PaDyFlow
2020	Member of Academia Net (network for excellent female scientists)
2014	Invited Professor, Univ. Massachusetts, Amherst, USA (2 months)

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### **Publications (81 publications, h index 33 from web of science, 41 google scholar)**

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Author of 81 papers in journals as Nature Physics, Nature Communications, Physical Review Letters, Science Advances, Journal of Fluid Mechanics, Physics of Fluids or Lab on Chip. Seven invited papers (Rheo. Acta, Granular Matter, Soft Matter, Phys. Fluids, Ann. Rev. Fluid. Mech, Chemical Review, MDPI) and a book chapter. See details on the list of publications.

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### **Editorship**

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Invited guest editor for “Biomicrofluidics” in 2016 to edit an issue on “Microfluidic rheology”.

Member of the editorial board, Journal of Non-Newtonian Fluid Mechanics (since 2020)

Chair “Walter’s publication prize” committee JNNFM (since 2021)

Member of the editorial board Phys. Rev. Fluids (since 2022)

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### **Patents**

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European patent “Microfluidic or millifluidic chip comprising a pressure sensing unit using color switching hydrogels”, 2021, EP 3 839 467 A1, US Patent App. 17/785,383 2023

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### **Invited conferences (58 in total)**

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I have been invited to conferences covering all the topics of my research activities (granular suspensions, adhesion, fluid structure interactions and elastic flow instabilities) on fundamental research conferences as well as important industrial meetings. They also include 3 invitations to international summer schools. My

invited conferences include a semi-plenary lecture at the Annual Meeting of the American Society of Physics, Division of Fluid Dynamics in 2013.

[158] Plenary lecture European Fluid Dynamics Conference (EFDC1) EUROMECH, Aachen, Germany, September 2024

[157] 2nd BICTAM-CISM Symposium on Dispersed Multiphase Flows (Beijing, August 21-23, 2024)

[156] Sectional lecture ICTAM 2024, Daegu, Korea August 2024

[155] Workshop Yves Couder, June 2024, Paris

[154] Lorentz Center Workshop, Active Polymers, February 2024, Leiden, Holland

[153] Plenary lecture AERC conference, Leeds, April 2024

[152] Lecturer, Complex Motion in Fluids Summer School, Cambridge, UK, July 2023

[151] Workshop, "Suspension flows and rheology: inertia, shape and roughness matter", Nice, France, June 2023

[150] Workshop IWNMNNF (International Workshop on Numerical Methods for Non-Newtonian Flows), Loch Lomond, UK May 2023

[149] DPG Tagung, Invited Presentation, "Complex Fluids and Colloids, Micelles and Vesicles" Dresden, Germany, March 2023

[148] Equilibrium and non-Equilibrium Pattern Formation in Soft Matter: From Elastic Solids to Complex Fluids, BIRS Workshop, Banff, Canada, July 2022

<http://www.birs.ca/events/2022/5-day-workshops/22w5127/videos/watch/202207250900-Lindner.html>

[147] Colloque « La mécanique, une clé du futur », Académie des Sciences, Juin 2022

[146] Lecturer "Soft Surfaces and Interfaces, Complex Fluids" Summer School Cargèse "Soft Matter" July 2022

[https://www.youtube.com/watch?v=FDMLMhtVxi0&ab\\_channel=Universit%C3%A0diCorsicaPasqualePaoli](https://www.youtube.com/watch?v=FDMLMhtVxi0&ab_channel=Universit%C3%A0diCorsicaPasqualePaoli)

[145] Invited speaker "70 ans de l'Ecole des Houches", Mai 2022

[144] Invited speaker "Young Rheologist Days", postponed July 2021

[143] Invited speaker "60+1 ans de l'Institut d'Études Scientifiques de Cargèse" June 2021

[https://www.youtube.com/watch?v=1927C9Srxde&t=1s&ab\\_channel=Universit%C3%A0diCorsicaPasqualePaoli](https://www.youtube.com/watch?v=1927C9Srxde&t=1s&ab_channel=Universit%C3%A0diCorsicaPasqualePaoli)

[142] Plenary speaker GDR Microfluidics September 2021 Toulouse

[141] Award Session for Eduard Arzt, Adhesion Society Meeting, February 2021

[140] Keynote speaker, session "Micro- and Nano-Fluidics" ICTAM, Italy, August 2020 – postponed August 2021

[139] Invited speaker Workshop "Active Matter" Bonn, April 2020 – postponed October 2021

[138] Workshop "*Fluid-Structure Interactions: From Engineering to Biomimetic Systems*", Okinawa, Japan, January 2020

[137] Award session "Maurice Couette", French Society of Rheology, Montpellier, October 2020

[136] CFCL Colloque sur les systèmes anisotropes auto-organisés, Sète, France, Septembre 2019

[135] Workshop, CECAM, Out-of-Equilibrium Soft Matter in Complex Media, Lausanne, Switzerland, July 2019

[134] International Workshop on Numerical Methods for Non-Newtonian Flows, Regua, Portugal, June 2019

[133] Mathematical Fluids, Materials, and Biology Conference, Ann Arbor, USA, June 2019

[132] Award session for Al Crosby, Adhesion Society Meeting, Hilton Head, USA, February 2019

[131] Midwinter Meeting British Society of Rheology, December 2018, Edinburgh, UK

[130] IUTAM meeting "Motile Cells in Complex Environments" Udine, Italy, May 2018

[129] WCARP Adhesion Society Meeting, keynote speaker, San Diego, USA, February 2018

[128] Gordon conference GRC "Colloidal, Macromolecular and Polyelectrolyte Solutions", Ventura, USA, February 2018

[127] COST workshop "From active matter to complex fluids", Nice, January 2018

[126] Workshop "Physics of micro-swimmers" Cargèse, France, September 2017

[125] "Scottish Condensed Matter Centre for Doctoral Training summer school", St Andrews, UK, August 2017

- [124] Summer school “Aux rencontres de Peyresq”, France, June 2017
- [123] Journées de Physique Statistique 2017, Paris, France
- [122] “Physics of Microfluidics” Workshop, Sde Boker, Israel, January 2017
- [121] OIST Workshop “*New Aspects of Micro- and Macro-scopic Flows in Soft Matters* “ in Okinawa, Japan, August 2016
- [120] 20<sup>th</sup> anniversary of the European Society of Rheology, “*Can rheology save the world?*” Zurich, Switzerland, April 2016
- [119] APS March meeting, Baltimore, USA, Invited session “*Geometry and Mechanics of Folded Filaments, Writhing Ribbons and Braided Bundles*” March 2016
- [118] Keynote speaker general COST meeting Flowing Matter, January 2016
- [117] CISM summer school “Interaction of microfluidic structures and organisms with fluid flows”, Udine, Italy, May 2015
- [116] Workshop “*Small meets Large: connecting microfluidics with marine ecology*”, Okinawa, Japan, May 2015
- [115] Meeting of the German Physical Society, March 2015, Focus Session, “*Disordered systems/glasses*”, Berlin
- [114] CECAM workshop “*Flow and clogging in bottlenecks: simulations and experiments*”, Saragossa, Spain, September, 2014
- [113] ISPAC, “*International Symposium on Polymer Analysis and Characterization,*” Les Diablerettes, Switzerland, June, 2014
- [112] FINAT-Linking the label community, Technical Seminar, (*Yearly meeting of the European Adhesion Industry*), Barcelona, Mars, 2014
- [111] Aspen, Winter Conferences “*Active Fluids: Bridging Complex Fluids and Biofluids*”, January, 2014
- [110] DFD (Annual meeting of the APS Division of Fluid Dynamics) Pittsburg, USA, Semi-Plenary Lecture, November, 2013 “*Flow of complex suspensions*”
- [9] Pressure Sensitive Tape Council Summit (*Yearly meeting of the American Adhesion Industry*), New Orleans, USA, May 2013
- [8] Gordon conference “*Macromolecular Materials*”, Ventura, USA, January, 2013
- [7] Gordon conference “*Granular Matter*”, Charlotte, USA, July, 2012
- [6] IUTAM workshop, “*Mobile particulate systems*”, Bangalore, India, January 2012
- [5] Meeting of the German Physical Society, Focus session, “*Dense granular flows*” Dresden, Germany, March 2011
- [4] Workshop at the Lorentz Center “*Flow instabilities and turbulence in viscoelastic fluids*”, Leiden, Holland, July 2010
- [3] FANAS 2010 Conference in Saarbrücken, Germany, October 2010
- [2] “*Gecko Workshop*”, INM, Saarbrücken, Germany, July 2010
- [1] Workshop “*Jamming and rheology*” Cargèse, France, April 2010

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### **Seminars and oral presentations at conferences**

I am invited to give around 5 seminars in international research institutions (MIT, Max Planck Göttingen, Weizman Institute etc...) per year and I give around 5 oral presentations at international conferences per year. I have been invited to give seminars in three of the big current online seminar series (JNNFM series, Mai 2020 and JFM October 2020, BioActive Fluids 2021).

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### **Organization of scientific meetings (most relevant)**

Aug. 2024	Session chair “Non-Newtonian flows” ICTAM, Korea
April 2024	Session chair “Microrheology and microfluidics” AERC meeting, Leeds, UK
Nov. 2022	Organization International Workshop “Microbial mobility” IPGG Paris
April 2022	Session chair “Micro-, Nanofluidics and Microrheology” AERC meeting, Sevilla
April 2021	Organization committee virtual AERC meeting
April 2021	Session Chair “ Micro and nano fluidics, and microrheology” virtual AERC meeting

Nov. 2019	Conference de Microfluidique, IFPEN, Rueil-Malmaison, Scientific Board
April 2019	Session Chair "Living and Active Fluids" European Rheology conference (AERC), Portoroz, Slovenia
April 2017	<i>Session Chair</i> "Micro and nanorheology, microfluidics" European Rheology conference (AERC), Copenhagen, Denmark
Feb. 2017	<i>Technical Co-Chair</i> of the Annual Meeting of the American Society of Rheology, Tampa, USA
Dec. 2016	<i>Scientific organizing committee</i> , International colloquium "Multi-scale Dynamics of Polymeric Materials" Material Science Chair Michelin, ESPCI, Paris, France
July 2015	<i>Session Chair</i> "Non-Newtonian fluid flows" Bifurcations and Instabilities in Fluid Dynamics (BIFD meeting), Paris France
April 2014	<i>Session Chair</i> "Microfluidic and Microrheology", European Rheology conference (AERC), Karlsruhe, Germany
Dec. 2013	<i>Scientific organizing committee</i> , International colloquium "Flow, fracture and interfaces in heterogeneous soft materials" Material Science Chair Michelin, ESPCI, Paris, France
Sept. 2011	<i>Mini-symposium chair</i> "Complex flows in microfluidic geometries." Dynamics Days Oldenburg, Germany
Sept. 2011	<i>Session Chair</i> , "Soft adhesives" Annual Meeting of the American Adhesion Society, Savannah, USA

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### **Institutional responsibilities**

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2010-2013	Head of the Master's degree program "Complex Systems" in the Physics Department of the University Pierre et Marie Curie.
2016-2021	Member of the scientific counsel of the faculty of Physics Université de Paris

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### **Commissions of trust**

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- <i>Referee</i>	more than 100 papers reviewed for Phys. Rev. Lett, J. Fluid Mech., Micro and Nanofluidics, Rheologica Acta, JNNFM, Soft Matter, Physics of Fluids, Granular Materials, Journal of Adhesion
- <i>PhD committees</i>	member of 40 PhD committees in France and Europe (external referee Spain, 2 <sup>nd</sup> opponent Norway, 1 <sup>st</sup> opponent Sweden, cotutelle Germany etc.), typically 5-10 per year
- <i>Steering committees</i>	Member of the steering committees of the "French Adhesion Society", "Chair Michelin-ESPCI" and the "German Rheological Society"
- <i>Evaluation panels</i>	member of the evaluation panel "DFG (German science foundation) Schwerpunkt "Particles in contact", referee of the ANR (French Science Foundation), selection committee PhD award German Rheological Society, evaluation panel "Sciences de la matière du CNES". Commission des postes Polytechnique (since 2019)
- <i>Recruiting committees</i>	typically one or two per year (Lille, Lyon, Saclay, UP, Marseille), first time as president in 2020 (UP) and promotion committee Sweden, 2019
- <i>Jury du prix de la Chancellerie</i>	Member since 2022

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### **Scientific advisory boards**

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- IFPEnergiesNouvelles, Rueil-Malmaison, France, since 2018
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- “Les Houches – Ecole de Physique” (since 2019)
- Institute for Microfluidics, IPGG, Paris, since 2019
- Leibniz Institute für Neue Materialien, INM, Saarbrücken, Germany, since 2019
- Dutch Polymer Institute Expert on Complex Fluids (2020-2022)

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### **Elected positions at scientific societies**

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- Member of the Euromec council (2022-)
- Delegate of the members of the European Society of Rheology (ESR), 2018 - 2022
- Secretary of the European Society of Rheology (ESR), 2019-2022)
- Vice-president European Society of Rheology (ESR), since 2022
- Member at large American Society of Rheology (SoR), 2019-2021

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### **Projects and industrial contracts (most relevant)**

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- Labex IPGG 2023 “
- ANR PushPull 2022-2026 Participant
- Carnot Microfluidique 2022
- Projet prématuration et Carnot Microfluidique « OptoF » 2021
- Project « Water&Energy » Labex IPGG 2021
- Collaborative Project with Singapor NSU-UP from IDEX UP 2021
- ITN Project, Horizon 2020, PhyMot, PI, 2021-2025
- ITN Project, Horizon 2020, CALIPER, PI 2019-2023
- AAP Emergence UP *Fluid/structure interaction between complex fluids and soft walls : Towards the control of flow instabilities*, 2019-2021, participant
- ERC Consolidator grant **PaDyFlow** “*Particle Dynamics in the Flow of complex suspensions*”, PI, 2016-2022
- ANR **BacFlow** “*Hydrodynamic transport and dispersion of bacterial suspensions: from the micro-hydrodynamic scale up to porous media*”, participant, 2016-2020
- CNRS-RoySoc bilateral program on active matter with University of Edinburgh (travel and exchange program), participant, 2017
- PICS Travel and exchange program “*Fluid-structure interactions of complex shaped new materials*” PMMH-UMass, selected, PI, 2016
- Sanofi, Paris, France “*Flow of protein solutions*”, PI, since 2015
- St Gobain, Paris, France “*Stability of liquid curtains of paint*”, PI, 2012-2014
- Michelin, Clermont-Ferrand, “*Contact of soft adhesives on rough surfaces*”, Co-PI, since 2012
- Schlumberger, Clamart, France “*Flow of fiber suspensions*”, PI, 2008-2011
- European project “MODIFY” “*Multi-scale modeling of interfacial phenomena in acrylic adhesives undergoing deformation*” Participant

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### **Teaching activities**

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Since 2003 I have been an assistant professor and then a full professor at the two main universities with a physics department in Paris, with a yearly teaching load of 192h. I am very committed to teaching and in particular:

- I have built from scratch a new lab course on complex fluids and microfluidics with six different experiments at the Master’s level.
- I was head of the Master “*Fluides complexes et Milieux Divisés*” from 2009-2014
- I was involved in the creation of the Master “*Microfluidics*” (2014) and the international Master “*Paris Physics Master*” (2019) both Masters are taught in English
- I have a special interest in developing the link between the University and Industry and have built a course with the aim to promote the professional career of students of the University.
- I also founded a training course on rheology for industrials that has opened every year between 2009-2015 and has attracted engineers from the research and development departments from food industry, cosmetics,

pharmaceutics and building materials. I have also developed a course on debonding mechanisms as part of a training course on adhesion (12 participants from industry in 2012).

- I have developed Master courses on “Rheology of complex fluids” and “Particulate suspensions” that I teach since 2005 and 2014 respectively

I have been invited to give lectures at international summer schools:

- “Interaction of microscopic structures and organisms with fluid flows” Mai 2015, Udine, Italy, 6h lecture on “Flow of complex suspensions”

- “Biofluids”, Marrakesh, September 2014, 2h lecture on “Active suspensions”

- Summer school “Aux rencontres de Peyresq”, France, June 2017

- “Scottish Condensed Matter Centre for Doctoral Training summer school”, St Andrews, UK, August 2017

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## **Outreach activities**

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Chapter in the book “Etonnante Physique” edited by CNRS for the year de la physique, 2024

Conference “Physics of Toys” IOP London, November 2024

Conference CuriOsity, Sorbonne University