

Personal Data

Title	Dr.
First name	Marcel
Name	Rey
Current position	Post-doc, Marie Curie Fellow
Current institution(s)	Department of Physics, University of Gothenburg, Sweden
ORCID	https://orcid.org/0000-0002-1721-0253

****I will move to the Institut für Physikalische Chemie, Universität Münster in July 2024****

Qualifications and Career

Degree Programme	BSs and MSc in Material Science 2009-2015 , Eidgenössische Technische Hochschule (ETH) Zürich, Switzerland	
Doctorate	Chemical Engineering (Summa Cum Laude) 2015-2020 , Supervised by Prof. Dr. Nicolas Vogel, Institut für Feststoff und Grenzflächenverfahrenstechnik, Friedrich Alexander Universität Erlangen Nürnberg (FAU), Germany	
Stages of academic/ professional career	2022- present	Marie Curie Postdoctoral Fellow at the Soft Matter Group, Department of Physics, University of Gothenburg, Sweden. Mentor: Prof. Dr. Giovanni Volpe.
	2020 - 2022	Schweizerischer Nationalfond Postdoctoral Fellow in the Soft Condensed Matter Group at the University of Edinburgh, UK. Mentor: Prof. Dr. Paul Clegg

Supplementary Career Information

2 children, born 02/2022 and 02/2024
Paternity leave 05/2022 – 07/2022

Activities in the Research System

2023-2024	Responsible for the course “Optical Tweezer and Optical Manipulation” at the University of Gothenburg.
2015-2017	Co-responsible for the course and exercise “Introduction to Polymer Science and Processing” at FAU Erlangen-Nürnberg
2012-2013	Student Representative in the Examination Commission.
2011-2015	Teaching Assistant at ETH Zürich in various subjects: Analysis I, Analysis III, Statistical Thermodynamic I
2010-2014	Student Representative of Study Commission in Material Science

Supervision of Researchers in Early Career Phases

Supervision of Bachelor students: 2
Supervision of Master students: 11
Co-Supervision of PhD students: 1 ongoing

Research Interests and Scientific Focus

My overarching aim is to pioneer the realm of intelligent and responsive particles and materials by seamlessly merging the domains of soft matter and optics. This involves designing particles with precisely defined properties, investigating their interactions, and facilitating their collective assembly into innovative, intelligent functional materials. Recent work has focused on the design and fabrication of metaparticles that harness the momentum of light, rendering them active. These light-driven metaparticles hold promise for achieving orchestrated, preprogrammable, and collective motions.

Scientific Results

Category A

1. **Rey, M.**; Kolker, J.; Richards, J.A.; Malhotra, I.; Glen, T.S.; Li, N.D.; Laidlaw, F.H.; Renggli, D.; Vermant, J.; Schofield, A.B.; Fujii, S.; Löwen, H.; Clegg, P.S. Interactions between interfaces dictate stimuli-responsive emulsion behaviour. *Nature Communications*, **2023**, 14(1), p.6723. <https://doi.org/10.1038/s41467-023-42379-z> open access
2. **Rey, M.**; Volpe, G.; Volpe, G. Light, Matter, Action: Shining light on active matter. *ACS Photonics*, **2023**, 10, 1188-1201. <https://doi.org/10.1021/acsp Photonics.3c00140> open access
3. Muntz, I.; Richards, J.A.; Brown, S.; Schofield, A.B.; **Rey, M.**; Thijssen J.H.J. Contactless interfacial rheology: Probing shear at liquid-liquid interfaces without an interfacial geometry via fluorescence microscopy. *Journal of Rheology*, **2024**, 67, 67-80. <https://doi.org/10.1122/8.0000559> open access
4. **Rey, M.**; Walter, J.; Harrer, J.; Perez, C.M.; Chiera, S.; Nair, S.; Ickler, M.; Fuchs, A.; Michaud, M.; Uttinger, M.J.; Schofield, A.B.; Thijssen J.H.J.; Distaso M.; Peukert W.; Vogel N., Versatile strategy for homogeneous drying patterns of dispersed particles. *Nature Communications*, **2022** 13 (1) 2084. <https://doi.org/10.1038/s41467-022-30497-z> open access
5. **Rey, M.**; Fernandez-Rodriguez, M.Á.; Karg, M.; Isa, L.; Vogel, N. Poly-N-isopropylacrylamide Nanogels and Microgels at Fluid Interfaces. *Accounts of Chemical Research*, **2020**, 53(2), 414-424. <https://doi.org/10.1021/acs.accounts.9b00528>
6. Harrer J.; **Rey, M.**; Ciarella, S.; Löwen, H.; Janssen, L.M.C.; Vogel N. Stimuli-responsive behavior of PNIPAm microgels under interfacial confinement. *Langmuir*, **2019**, 35(32), 10512-10521. <https://doi.org/10.1021/acs.langmuir.9b01208>
7. **Rey, M.**; Law, A. D.; Buzza, D.M.A.; Vogel, N. Anisotropic self-assembly from isotropic colloidal building blocks. *Journal of the American Chemical Society*, **2017**. 139(48), 17464-17473. <https://doi.org/10.1021/jacs.7b08503>
8. **Rey, M.**; Hou, X.; Tang, J.S.J.; Vogel, N. Interfacial arrangement and phase transitions of PNIPAm microgels with different crosslinking densities. *Soft Matter*, **2017**. 13(46), 8717-8727. <https://doi.org/10.1039/C7SM01558E>
9. **Rey, M.**; Fernández-Rodríguez, M.Á.; Steinacher, M.; Scheidegger, L.; Geisel, K.; Richtering, W.; Squires T.M.; Isa, L. Isostructural solid-solid phase transition in monolayers of soft core-shell particles at fluid interfaces: structure and mechanics. *Soft Matter*, **2016**. 12(15), 3545-3557. <https://doi.org/10.1039/C5SM03062E>

10. **Rey, M.**; Elnathan, R.; Ditcovski, R.; Geisel, K.; Zanini, M.; Fernandez-Rodriguez, M.Á.; Naik V.V.; Frutiger A.; Richtering W.; Ellenbogen T.; Voelcker N.H.; Isa L., Fully tunable silicon nanowire arrays fabricated by soft nanoparticle templating. *Nano Letters*, **2016**. 16(1), 157-163. <https://doi.org/10.1021/acs.nanolett.5b03414>

Category B

Patents

1. **Rey, M.**; Vogel, N.; Nair, S. Aqueous particle dispersion and process for forming an aqueous particle dispersion. EP3954744A1.
2. **Rey, M.**; Vogel, N.; Nair, S. Particle dispersion and process for forming a particle dispersion. US20230227674A1.

Selected Academic Distinctions

2022	Best oral presentation at ECIS 2022 out of >200 talks (Award: 500 Euro)
2019	PhD Defense, <i>summa cum laude</i>
2016	Teaching Award – FAU Erlangen-Nürnberg 2016: "Introduction to Polymer Science and Processing" ranked 2/39 course exercises of the Technical Faculty