# Oliver Lieleg

## List of Publications by Year in Descending Order



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| 112 papers | 3,466 citations | 31 h-index | 56 g-index |
| 120 ext. papers | 4,266 ext. citations | 7.3 avg, IF | 5.78 L-index |

| # | Paper | IF | Citations |
|---|---|---|---|
| 112 | Bio-based and bio-inspired adhesives from animals and plants for biomedical applications.. *Materials Today Bio*, **2022**, 13, 100203 | 9.9 | 7 |
| 111 | Hot Flows: Evolving an Archaeal Glucose Dehydrogenase for Ultrastable Carba-NADP+ Using Microfluidics at Elevated Temperatures. *ACS Catalysis*, **2022**, 12, 1841-1846 | 13.1 | 1 |
| 110 | Effects of Sterilization Methods on the Integrity and Functionality of Covalent Mucin Coatings on Medical Devices. *Advanced Materials Interfaces*, **2022**, 9, 2101716 | 4.6 | 1 |
| 109 | An improved, filtration-based process to purify functional mucins from mucosal tissues with high yields. *Separation and Purification Technology*, **2022**, 294, 121209 | 8.3 | 0 |
| 108 | Machine learning approaches for biomolecular, biophysical, and biomaterials research. *Biophysics Reviews*, **2022**, 3, 021306 | 2.6 | 1 |
| 107 | Emulsions of hydrolyzable oils for the zero-order release of hydrophobic drugs. *Journal of Controlled Release*, **2021**, 339, 498-505 | 11.7 | 3 |
| 106 | Structural Alterations of Mucins Are Associated with Losses in Functionality. *Biomacromolecules*, **2021**, 22, 1600-1613 | 6.9 | 15 |
| 105 | A novel modelling and simulation approach for the hindered mobility of charged particles in biological hydrogels. *Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences*, **2021**, 477, 20210039 | 2.4 | 3 |
| 104 | Synthesis and characterization of chemically fueled supramolecular materials driven by carbodiimide-based fuels. *Nature Protocols*, **2021**, 16, 3901-3932 | 18.8 | 6 |
| 103 | Purified mucins in drug delivery research. *Advanced Drug Delivery Reviews*, **2021**, 178, 113845 | 18.5 | 3 |
| 102 | Bacterial spores as hydrophobizing agents in mortar. *Cement and Concrete Composites*, **2021**, 120, 104008 | 8.6 | 1 |
| 101 | Comparative study of instrumental properties and sensory profiling of low-calorie chocolate containing hydrophobically modified inulin. Part II: Proton mobility, topological, tribological and dynamic sensory properties. *Food Hydrocolloids*, **2021**, 110, 106144 | 10.6 | 12 |
| 100 | DNA Strands Trigger the Intracellular Release of Drugs from Mucin-Based Nanocarriers. *ACS Nano*, **2021**, 15, 2350-2362 | 16.7 | 7 |
| 99 | Bioinspired Dopamine/Mucin Coatings Provide Lubricity, Wear Protection, and Cell-Repellent Properties for Medical Applications. *Advanced Healthcare Materials*, **2021**, 10, e2000831 | 10.1 | 15 |
| 98 | Advances in Mucin Biopolymer Research: Purification, Characterization, and Applications **2021**, 181-208 | | 3 |
| 97 | Modulating the Bioactivity of Mucin Hydrogels with Crosslinking Architecture. *Advanced Functional Materials*, **2021**, 31, 2008428 | 15.6 | 3 |
| 96 | Biopolymer-based nanoparticles with tunable mucoadhesivity efficiently deliver therapeutics across the corneal barrier. *Materials Science and Engineering C*, **2021**, 121, 111890 | 8.3 | 2 |

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| 95 | Immune-Modulating Mucin Hydrogel Microdroplets for the Encapsulation of Cell and Microtissue. *Advanced Functional Materials*, **2021**, 31, 2105967 | 15.6 | 2 |
| 94 | Machine Learning Approach to Analyze the Surface Properties of Biological Materials. *ACS Biomaterials Science and Engineering*, **2021**, 7, 4614-4625 | 5.5 | 4 |
| 93 | Forgotten but not gone: Particulate matter as contaminations of mucosal systems. *Biophysics Reviews*, **2021**, 2, 031302 | 2.6 | 0 |
| 92 | Viscoelastic behavior of chemically fueled supramolecular hydrogels under load and influence of reaction side products. *Communications Materials*, **2021**, 2, | 6 | 2 |
| 91 | Topography quantifications allow for identifying the contribution of parental strains to physical properties of co-cultured biofilms. *Biofilm*, **2021**, 3, 100044 | 5.9 | 2 |
| 90 | Biofilm Adhesion to Surfaces is Modulated by Biofilm Wettability and Stiffness. *Advanced Materials Interfaces*, **2021**, 8, 2001658 | 4.6 | 4 |
| 89 | Highly Transparent Covalent Mucin Coatings Improve the Wettability and Tribology of Hydrophobic Contact Lenses. *ACS Applied Materials & Interfaces*, **2020**, 12, 28024-28033 | 9.5 | 17 |
| 88 | Covalent Mucin Coatings Form Stable Anti-Biofouling Layers on a Broad Range of Medical Polymer Materials. *Advanced Materials Interfaces*, **2020**, 7, 1902069 | 4.6 | 22 |
| 87 | Chelate chemistry governs ion-specific stiffening of Bacillus subtilis B-1 and Azotobacter vinelandii biofilms. *Biomaterials Science*, **2020**, 8, 1923-1933 | 7.4 | 3 |
| 86 | Glyco-Modification of Mucin Hydrogels to Investigate Their Immune Activity. *ACS Applied Materials & Interfaces*, **2020**, 12, 19324-19336 | 9.5 | 14 |
| 85 | Molecular micromanagement: DNA nanotechnology establishes spatio-temporal control for precision medicine. *Biophysics Reviews*, **2020**, 1, 011305 | 2.6 | 1 |
| 84 | Charged glycan residues critically contribute to the adsorption and lubricity of mucins. *Colloids and Surfaces B: Biointerfaces*, **2020**, 187, 110614 | 6 | 14 |
| 83 | Metal ions weaken the hydrophobicity and antibiotic resistance of NCIB 3610 biofilms. *Npj Biofilms and Microbiomes*, **2020**, 6, 1 | 8.2 | 31 |
| 82 | Biopolymer-Based Coatings: Promising Strategies to Improve the Biocompatibility and Functionality of Materials Used in Biomedical Engineering. *Advanced Materials Interfaces*, **2020**, 7, 2000830 | 4.6 | 31 |
| 81 | Regulating Chemically Fueled Peptide Assemblies by Molecular Design. *Journal of the American Chemical Society*, **2020**, 142, 14142-14149 | 16.4 | 25 |
| 80 | Repulsive Backbone-Backbone Interactions Modulate Access to Specific and Unspecific Binding Sites on Surface-Bound Mucins. *Langmuir*, **2020**, 36, 12973-12982 | 4 | 6 |
| 79 | Smart Biopolymer-Based Multi-Layers Enable Consecutive Drug Release Events on Demand. *Advanced Materials Interfaces*, **2020**, 7, 2000735 | 4.6 | 5 |
| 78 | Bacterial Additives Improve the Water Resistance of Mortar. *ACS Sustainable Chemistry and Engineering*, **2020**, 8, 5704-5715 | 8.3 | 8 |

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| 77 | Several Sterilization Strategies Maintain the Functionality of Mucin Glycoproteins. *Macromolecular Bioscience*, **2020**, 20, e2000090 | 5.5 | 7 |
| 76 | Biopolymer-enriched B. subtilis NCIB 3610 biofilms exhibit increased erosion resistance. *Biomaterials Science*, **2019**, 7, 4675-4686 | 7.4 | 4 |
| 75 | Macromolecular Coatings Enhance the Tribological Performance of Polymer-Based Lubricants. *Advanced Materials Interfaces*, **2019**, 6, 1900366 | 4.6 | 9 |
| 74 | Importance of the biofilm matrix for the erosion stability of NCIB 3610 biofilms.. *RSC Advances*, **2019**, 9, 11521-11529 | 3.7 | 10 |
| 73 | Engineering an orchestrated release avalanche from hydrogels using DNA-nanotechnology. *Journal of Controlled Release*, **2019**, 304, 19-28 | 11.7 | 10 |
| 72 | Continuous Synthesis and Application of Novel, Archaeoinspired Tackifiers from Birch Bark Waste. *ACS Sustainable Chemistry and Engineering*, **2019**, 7, 13157-13166 | 8.3 | 1 |
| 71 | The Lubricity of Mucin Solutions Is Robust toward Changes in Physiological Conditions.. *ACS Applied Bio Materials*, **2019**, 2, 3448-3457 | 4.1 | 9 |
| 70 | Immune-Informed Mucin Hydrogels Evade Fibrotic Foreign Body Response In Vivo. *Advanced Functional Materials*, **2019**, 29, 1902581 | 15.6 | 17 |
| 69 | Synuclein Penetrates Mucin Hydrogels Despite Its Mucoadhesive Properties. *Biomacromolecules*, **2019**, 20, 4332-4344 | 6.9 | 10 |
| 68 | Relation between structural, mechanical and sensory properties of gluten-free bread as affected by modified dietary fibers. *Food Chemistry*, **2019**, 277, 664-673 | 8.5 | 48 |
| 67 | Topographical alterations render bacterial biofilms susceptible to chemical and mechanical stress. *Biomaterials Science*, **2018**, 7, 220-232 | 7.4 | 20 |
| 66 | Macromol. Biosci. 2/2018. *Macromolecular Bioscience*, **2018**, 18, 1870004 | 5.5 | |
| 65 | Macromolecular Coating Enables Tunable Selectivity in a Porous PDMS Matrix. *Macromolecular Bioscience*, **2018**, 18, 1700311 | 5.5 | 6 |
| 64 | Oscillatory Tribology Performed With a Commercial Shear Rheometer. *Biotribology*, **2018**, 14, 11-18 | 2.3 | 17 |
| 63 | Transient binding promotes molecule penetration into mucin hydrogels by enhancing molecular partitioning. *Biomaterials Science*, **2018**, 6, 3373-3387 | 7.4 | 30 |
| 62 | Collapse of genetic division of labour and evolution of autonomy in pellicle biofilms. *Nature Microbiology*, **2018**, 3, 1451-1460 | 26.6 | 28 |
| 61 | Reversible Condensation of Mucins into Nanoparticles. *Langmuir*, **2018**, 34, 13615-13625 | 4 | 11 |
| 60 | Modulation of the mechanical properties of bacterial biofilms in response to environmental challenges. *Biomaterials Science*, **2017**, 5, 887-900 | 7.4 | 44 |

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| 59 | Surface topology affects wetting behavior of biofilms. *Npj Biofilms and Microbiomes*, **2017**, 3, 11 | 8.2 | 37 |
| 58 | Quantification of cartilage wear morphologies in unidirectional sliding experiments: Influence of different macromolecular lubricants. *Biotribology*, **2017**, 12, 43-51 | 2.3 | 13 |
| 57 | Controlled nanoparticle release from a hydrogel by DNA-mediated particle disaggregation. *Journal of Controlled Release*, **2017**, 246, 71-78 | 11.7 | 8 |
| 56 | Matrix composition determines the dimensions of Bacillus subtilis NCIB 3610 biofilm colonies grown on LB agar. *RSC Advances*, **2017**, 7, 31886-31898 | 3.7 | 10 |
| 55 | Evolution of exploitative interactions during diversification in Bacillus subtilis biofilms. *FEMS Microbiology Ecology*, **2017**, 93, | 4.3 | 23 |
| 54 | Non-equilibrium dissipative supramolecular materials with a tunable lifetime. *Nature Communications*, **2017**, 8, 15895 | 17.4 | 159 |
| 53 | Mucin Coatings Prevent Tissue Damage at the Corneal Contact Lens Interface. *Advanced Materials Interfaces*, **2017**, 4, 1700186 | 4.6 | 23 |
| 52 | Mucin-Inspired Lubrication on Hydrophobic Surfaces. *Biomacromolecules*, **2017**, 18, 2454-2462 | 6.9 | 27 |
| 51 | Lipid Head Group Charge and Fatty Acid Configuration Dictate Liposome Mobility in Neurofilament Networks. *Macromolecular Bioscience*, **2017**, 17, 1600229 | 5.5 | 3 |
| 50 | Biophysical Properties of the Basal Lamina: A Highly Selective Extracellular Matrix **2016**, | | 5 |
| 49 | An optimized purification process for porcine gastric mucin with preservation of its native functional properties. *RSC Advances*, **2016**, 6, 44932-44943 | 3.7 | 64 |
| 48 | Hydrophobic Properties of Biofilm-Enriched Hybrid Mortar. *Advanced Materials*, **2016**, 28, 8138-8143 | 24 | 27 |
| 47 | Biofilms: Hydrophobic Properties of Biofilm-Enriched Hybrid Mortar (Adv. Mater. 37/2016). *Advanced Materials*, **2016**, 28, 8315-8315 | 24 | |
| 46 | A Selective Mucin/Methylcellulose Hybrid Gel with Tailored Mechanical Properties. *Macromolecular Bioscience*, **2016**, 16, 567-79 | 5.5 | 22 |
| 45 | Direct Comparison of Physical Properties of Bacillus subtilis NCIB 3610 and B-1 Biofilms. *Applied and Environmental Microbiology*, **2016**, 82, 2424-2432 | 4.8 | 33 |
| 44 | The structure and mechanical properties of articular cartilage are highly resilient towards transient dehydration. *Acta Biomaterialia*, **2016**, 29, 180-187 | 10.8 | 25 |
| 43 | Elongational rheology of bacterial biofilms in situ. *Journal of Rheology*, **2016**, 60, 1085-1094 | 4.1 | 11 |
| 42 | Cationic astringents alter the tribological and rheological properties of human saliva and salivary mucin solutions. *Biotribology*, **2016**, 6, 12-20 | 2.3 | 28 |

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| 41 | A microfluidics approach to study the accumulation of molecules at basal lamina interfaces. *Lab on A Chip*, **2015**, 15, 3326-34 | 7.2 | 8 |
| 40 | A single charge in the actin binding domain of fascin can independently tune the linear and non-linear response of an actin bundle network. *European Physical Journal E*, **2015**, 38, 136 | 1.5 | 10 |
| 39 | Comparison of friction and wear of articular cartilage on different length scales. *Journal of Biomechanics*, **2015**, 48, 3052-8 | 2.9 | 25 |
| 38 | Diffusion Regulation in the Vitreous Humor. *Biophysical Journal*, **2015**, 109, 2171-81 | 2.9 | 58 |
| 37 | Modulating Mucin Hydration and Lubrication by Deglycosylation and Polyethylene Glycol Binding. *Advanced Materials Interfaces*, **2015**, 2, 1500308 | 4.6 | 48 |
| 36 | The biophysical properties of Basal lamina gels depend on the biochemical composition of the gel. *PLoS ONE*, **2015**, 10, e0118090 | 3.7 | 14 |
| 35 | Enzymatically active biomimetic micropropellers for the penetration of mucin gels. *Science Advances*, **2015**, 1, e1500501 | 14.3 | 172 |
| 34 | Adapting a commercial shear rheometer for applications in cartilage research. *Review of Scientific Instruments*, **2014**, 85, 093903 | 1.7 | 23 |
| 33 | Selected metal ions protect Bacillus subtilis biofilms from erosion. *Metallomics*, **2014**, 6, 1441-50 | 4.5 | 35 |
| 32 | Carbohydrate coating reduces adhesion of biofilm-forming Bacillus subtilis to gold surfaces. *Applied and Environmental Microbiology*, **2014**, 80, 5911-7 | 4.8 | 13 |
| 31 | Draft Genome Sequence of the Biofilm-Producing Bacillus subtilis Strain B-1, Isolated from an Oil Field. *Genome Announcements*, **2014**, 2, | | 4 |
| 30 | Publisher's Note: Rheology of Semiflexible Bundle Networks with Transient Linkers [Phys. Rev. Lett. 112, 238102 (2014)]. *Physical Review Letters*, **2014**, 113, | 7.4 | 4 |
| 29 | Rheology of semiflexible bundle networks with transient linkers. *Physical Review Letters*, **2014**, 112, 238102 | 7.4 | 49 |
| 28 | Ion-specific effects modulate the diffusive mobility of colloids in an extracellular matrix gel. *Langmuir*, **2013**, 29, 15965-73 | 4 | 23 |
| 27 | Cervical mucus properties stratify risk for preterm birth. *PLoS ONE*, **2013**, 8, e69528 | 3.7 | 40 |
| 26 | An adsorption chromatography assay to probe bulk particle transport through hydrogels. *Journal of Pharmaceutical Sciences*, **2012**, 101, 436-42 | 3.9 | 9 |
| 25 | A microfluidic in vitro system for the quantitative study of the stomach mucus barrier function. *Lab on A Chip*, **2012**, 12, 4071-9 | 7.2 | 29 |
| 24 | Mucin biopolymers as broad-spectrum antiviral agents. *Biomacromolecules*, **2012**, 13, 1724-32 | 6.9 | 104 |

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| 23 | Slow dynamics and internal stress relaxation in bundled cytoskeletal networks. *Nature Materials*, **2011**, 10, 236-42 | 27 | 115 |
| 22 | Biological hydrogels as selective diffusion barriers. *Trends in Cell Biology*, **2011**, 21, 543-51 | 18.3 | 232 |
| 21 | Mechanical robustness of Pseudomonas aeruginosa biofilms. *Soft Matter*, **2011**, 7, 3307-3314 | 3.6 | 96 |
| 20 | Structure and dynamics of cross-linked actin networks. *Soft Matter*, **2010**, 6, 218-225 | 3.6 | 176 |
| 19 | Characterization of particle translocation through mucin hydrogels. *Biophysical Journal*, **2010**, 98, 1782-9 | 2.9 | 201 |
| 18 | Structural and viscoelastic properties of actin networks formed by espin or pathologically relevant espin mutants. *ChemPhysChem*, **2009**, 10, 2813-7 | 3.2 | 6 |
| 17 | Inside Cover: Structural and Viscoelastic Properties of Actin Networks Formed by Espin or Pathologically Relevant Espin Mutants (ChemPhysChem 16/2009). *ChemPhysChem*, **2009**, 10, 2738-2738 | 3.2 | |
| 16 | Cytoskeletal polymer networks: viscoelastic properties are determined by the microscopic interaction potential of cross-links. *Biophysical Journal*, **2009**, 96, 4725-32 | 2.9 | 89 |
| 15 | Structural and viscoelastic properties of actin/filamin networks: cross-linked versus bundled networks. *Biophysical Journal*, **2009**, 97, 83-9 | 2.9 | 83 |
| 14 | Selective filtering of particles by the extracellular matrix: an electrostatic bandpass. *Biophysical Journal*, **2009**, 97, 1569-77 | 2.9 | 202 |
| 13 | Structural polymorphism in heterogeneous cytoskeletal networks. *Soft Matter*, **2009**, 5, 1796 | 3.6 | 56 |
| 12 | Micro- and macrorheological properties of isotropically cross-linked actin networks. *Biophysical Journal*, **2008**, 94, 688-93 | 2.9 | 54 |
| 11 | Internal stress in kinetically trapped actin bundle networks. *Soft Matter*, **2008**, 4, 2365 | 3.6 | 37 |
| 10 | Cross-linking molecules modify composite actin networks independently. *Physical Review Letters*, **2008**, 101, 118102 | 7.4 | 35 |
| 9 | Transient binding and dissipation in cross-linked actin networks. *Physical Review Letters*, **2008**, 101, 108101 | 7.4 | 98 |
| 8 | Rheological characterization of the bundling transition in F-actin solutions induced by methylcellulose. *PLoS ONE*, **2008**, 3, e2736 | 3.7 | 21 |
| 7 | Specific integrin labeling in living cells using functionalized nanocrystals. *Small*, **2007**, 3, 1560-5 | 11 | 43 |
| 6 | Cross-linker unbinding and self-similarity in bundled cytoskeletal networks. *Physical Review Letters*, **2007**, 99, 158105 | 7.4 | 57 |

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| 5 | Mechanics of bundled semiflexible polymer networks. *Physical Review Letters*, **2007**, 99, 088102 | 7.4 | 112 |
| 4 | Bacterial Materials: Applications of Natural and Modified Biofilms. *Advanced Materials Interfaces*,2101024 | 4.6 | 4 |
| 3 | MUC5AC drives COPD exacerbation severity through amplification of virus-induced airway inflammation | | 3 |
| 2 | Wetting behavior and stability of surface-modified polyurethane materials. *Plasma Processes and Polymers*,e2100126 | 3.4 | 0 |
| 1 | Multifunctional Janus-Type Bilayer Films Combine Broad-Range Tissue Adhesion with Guided Drug Release. *Advanced Functional Materials*,2105721 | 15.6 | 2 |