

CURRICULUM VITAE

PERSONAL DATA

Name Prof. Dr.-Ing. Laura De Laporte
Date/Place of Birth 03.12.1980, Gent, Belgium
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WORK EXPERIENCE

11/2024 – current W3 Professor, Chair ‘Macromolecular Materials for Medicine’, Chemistry Department RWTH, joined appointment with DWI and Institute of Applied Medical Engineering, UKA RWTH Aachen, DE
09/2018 – 10/2024 W2 Professor, Teaching and Research Area ‘Advanced Materials for Biomedicine’, Chemistry Department RWTH, joined appointment with DWI and Institute of Applied Medical Engineering, UKA RWTH Aachen, DE
03/2019 – current Fellow of the Max Planck School – Matter to Life
10/2013 – 08/2018 Group leader at DWI-Leibniz Institute for Interactive Materials, Aachen, DE
07/2009 – 09/2012 Postdoctoral Research, Laboratory of Prof. Jeffrey Hubbell, Life Sciences – Ecole Polytechnique Fédérale de Lausanne, Switzerland
09/2003 – 08/2004 Research assistant, Laboratory of Prof. Lonnie Shea, Department of Chemical and Biological Engineering – Northwestern University (NU), Evanston, US

EDUCATION

10/2017 Privatdozentin RWTH - Chemie
09/2004 – 06/2009 PhD, Department of Chemical and Biological Engineering – NU, Evanston, US; *Multiple channel bridges with the ability for DNA and protein delivery for spinal cord regeneration* Promoter: Prof. Lonnie Shea - GPA: 4.0/4.0
09/1998 – 06/2003 Bachelor and Masters in Chemical Engineering – Ghent University, BE; *Great Distinction*

BOARDS

2022 – current Steering Committee, GKR2145 Mechanobiology
2020 – current Scientific Advisory Board, Advanced Healthcare Materials
2021 – current ENLIGHT Advisory Board Member, Utrecht University
2021 – 2024 Board of Directors, International Society for Biofabrication ISBF
2020 – 2021 Associated Editor, ACS Advanced Materials and Interfaces

GRANTS

01/2025 – 12/2029 EU NEOLIVER Automated generation of dense, functional and perfusable bioprinted liver constructs for transplantation (1,062,172 €)
10/2024 – 09/2028 Leibniz ScienceCampus „Sonopharmacology - Activation of drugs by ultrasound” (ACTISONO) (98,000 €)
10/2024 – 09/2028 DFG SPP2451 ‘Engineered living Materials’: ProbioGel as Adaptive Living Skin and Wound Therapeutics (448,421 €)
10/2024 – 09/2027 DFG: RTG2375: Tumor-Targeted Drug Delivery, P7: Development of a molecular combined chemoimmunotherapy for treatment of hepatocellular carcinoma (278,420 €)
01/2024 – 06/2028 DFG: RTG2415: Mechanobiology in Epithelial 3D Tissue Constructs (ME3T) 2nd funding period, Project D1: Pre-programming anisometric microgels to

orthogonally study the effect of mechanical signals on epithelia in 3D tissue models (278,420 €)

09/2024 – 03/2026 EU: European Research Council Proof of Concept (POC 101150675) AnisoPlate: High-throughput production of anisotropic 3D human tissue models (150,000 €)

08/2023 – 07/2024 ERS RWTH Seed fund: Conductive phantom cell as sensor for retinal organoids, with Jacopo di Russo and Francesca Santoro (73,165 €)

01/2023 – 12/2026 EU Marie Skłodowska-Curie Doctoral Network 101073374 ReWire: Technology-driven combinatorial therapy to rewire the spinal cord after injury (781,617 €)

10/2022 – 09/2027 EU ERC CoG 101043656 Heartbeat: 3D-assembly of interactive microgels to grow in vitro vascularized, structured, and beating human cardiac tissues in high-throughput (2,969,219 €)

06/2022 – 05/2025 SAW Transfer Leibniz 111/2021 with IPF and INM: μ Tissuefab: Multiphasic hydrogels for high throughput human in vitro tissue and disease models, with Prof. Carsten Werner, IPF, and Prof. Arancha del Campo, INM (333,301 €)

01/2022 – 12/2025 Werner Siemens Foundation: TriggerINK: 4D in would printing for functional tissue repair (9,921,562 € total budget, coordinator of joined grant with Prof. Andreas Herrmann, Prof. Stefan Hecht, and Prof. Matthias Wessling)

01/2022 – 07/2024 IGF: Hydrosprin: Production process for cell fiber-based meat substitutes (249,371 €)

10/2021 – 09/2025 New Frontiers in Research Funds (NFRF) Transformations: Mend the Gap (1,900,000 CAD)

08/2021 – 07/2024 DFG: Light responsive hydrogels to understand mechanotransduction in cardiac infarctions and muscular dystrophy (230,050 €)

08/2021 – 07/2022 ERS RWTH Seed fund: Cell-mimicking Microgels to Model Retinal Epithelium Ageing with Dr. Jacopo di Russo (20,300 €)

08/2021 – 02/2023 EU: European Research Council Proof of Concept (POC) BioArchitecture (150,000 €)

07/2021 – 06/2024 DFG: CRU5011: Integrating emerging methods to advance translational kidney research (InteraKD), P1: Development of high-throughput platforms for human kidney disease modeling (217,840 €)

09/2020 – 08/2023 DFG: Rapid prototyped microfluidic systems for synthesizing and screening of microgel capsules as growth factor delivery systems for angiogenesis (199,650 €)

07/2020 – 06/2024 DFG: CRC985 Functional microgels and microgel systems B5: Anisometric microgels to construct 3D responsive macroporous matrices to direct and mechanically trigger cells (334,800 €)

07/2020 – 06/2024 DFG: CRC985 Functional microgels and microgel systems C9: Gene regulation enabled by ferro-microgels (334,800 €)

07/2020 – 10/2022 IGF: Apartex: Electrospun bi-layer anti-adhesion hydrogel fiber mat to prevent post-operative adhesion (236,190 €)

01/2020 – 12/2022 EU: Research and Innovation SC1-BHC-07-2019 OrganTrans (532,725 €)

01/2020 – 12/2021 ERS Prep Fund Project – Life Science: Magnetic field-assisted bioprinting for the fabrication of three-dimensional *in vitro* tissue models (195,000 €)

10/2020 – 12/2021 ERS RWTH Seed fund: Casein microparticles for sustained drug delivery in regenerative materials with Prof. Twan Lammers and Prof. Ronald Gebhardt (10,800 €)

11/2019 – 10/2020 ERS RWTH Seed fund: Actuating hydrogel to mechanically direct stem cell fate, with Sabine Neuss-Stein (67,200 €)

08/2019 – 12/2020 EU: European Research Council Proof of Concept (POC 842452) PeriGO: Peripheral nerve Gel-based Orientation (150,000 €)

07/2019 – 12/2023 DFG: RTG2415: Mechanobiology in Epithelial 3D Tissue Constructs (ME3T), Project D1: Natural and synthetic hybrid hydrogels to study the effect of mechanical anisotropy on cell behavior and guidance (235,000 €)

06/2018 – 05/2023 SAW Leibniz-Wettbewerb: Professorinnenprogramm (1,667,843 €)

06/2018 – 05/2021	Abgel: Development of organspacer to reduce side effects of radiation therapy during prostate cancer (Leitmarkt Agentur NRW: Neue Werkstoffe) (380,831 €)
03/2015 – 02/2021	EU: European Research Council (ERC) Starting Grant ANISOGEL, 637853 (1,435,396 €)
06/2016 – 05/2020	DFG: CRC985 Functional microgels and microgel systems, B5: Continuous fabrication of rod-shaped microgels to investigate their structural assembly (253,300 €)
01/2015 – 12/2018	EU: Marie Skłodowska-Curie Innovative Training Networks BIOGEL, 642687 (747,650 €, part for my research group)
07/2015 – 11/2018	DFG: Nachwuchsakademie MatWerk (350,500 €)
01/2016 – 12/2016	ERS RWTH Seed fund: Biofunctional hydrogel systems fostering stem cell derived peripheral neurons to study chronic pain disease, with Prof. Angelika Lampert (27,500 €)
11/2015 – 05/2017	RWTH: Umbrella project in collaboration with Prof. Avi Schroeder, Technion University, Israel (15,000 €)
04/2014 – 05/2016	DFG: CRC985 Functional microgels and microgel systems, ramp-up project (51,000 €)

PUBLICATIONS *Authors contributed equally. [§]Co-corresponding authors.

- Günther D, Bergerbit C, Marsee A, Vedaraman S, Pueyo-Moliner A, Bastard C, Eelen G, Gerardo Nava JL, Dewerschin M, Carmeliet P, Kramann R, Schneeberger K, Spee B, **De Laporte L**. Synergizing bioprinting and 3D cell culture to enhance tissue formation in printed synthetic constructs. *Biofabrication* 2025, Online.
- Bouwens D, Kabgani N, Bergerbit C, Kim H, Ziegler S, Ijaz S, Abdallah A, Haraszti T, Maryam S, Omidinia-Anarkoli A, **De Laporte L**, Hayat S, Jansen J, Kramann R. A bioprinted and scalable model of human tubulo-interstitial kidney fibrosis. *Biomaterials*. 2025, 316: 123009.
- Steinbeck L, Paul R, Litke J, Karkoszka I, Wiese GP, Linkhorst J, **De Laporte L**, Wessling M. Hierarchically structured and tunable hydrogel patches: design, characterization and application. *Small* 2024, 21: e2407311.
- Hoeft K, Koch L, Ziegler S, Zhang L, Luetke S, Tanzer MC, Mohanta D, Schumacher D, Schreibung F, Long Q, Kim H, Klinkhammer BM, Schikarski C, Maryam S, Baens M, Hermann J, Krieg S, Peisker F, **De Laporte L**, Schaefer GJ, Menzel S, Jankowski J, Humphreys BD, Wahida A, Schneider RK, Versele M, Boor P, Mann M, Sengle G, Hayat S, Kramann R. ADAMTS12 promotes fibrosis by restructuring extracellular matrix to enable activation of injury-responsive fibroblasts. *J Clin Invest*. 2024, 134: e170246.
- Rommel D, Häßel B, Pietryszek P, Mork M, Jung O, Emondts M, Norkin N, Doolaar IC, Kittel Y, Yazdani G, Anarkoli AO, Schweizerhof S, Kim K, Mourran A, Möller M, Guck J, **De Laporte L**. Thermally assisted microfluidics to produce chemically equivalent microgels with tunable network morphologies. *Angew Chem Int Ed Engl*. 2024, e202411772.
- Morozov JM, Quilis NJ, Fossati S, **De Laporte L**, Gusenbauer C, Weber A, Toca-Herrera JL, Wiesner F, Jonas U, Dostalek J. Plasmon-enhanced multiphoton polymer crosslinking for selective modification of plasmonic hotspots. *J. Phys. Chem. C* 2024, Online.
- Mathews HF, Çeper T, Speen T, Bastard C, Bulut S, Pieper MI, Schacher FH, **De Laporte L**, Pich A. Engineering poly(dehydroalanine)-based gels *via* droplet-based microfluidics: from bulk to microspheres. *Soft Matter* 2024, 20: 6231-46.
- Castro AL, Vedaraman S, Haraszti T, Barbosa MA, Gonçalves RM, **De Laporte L**. Engineering anisotropic cell models: development of collagen hydrogel scaffolds with magneto-responsive PEG microgels for tissue engineering applications. *Adv. Materials Technologies* 2024, 9: 2301391.
- Castro Nava A*, Doolaar IC*, Labude N, Malyaran H, Babu S, Chandorkar Y, Di Russo J, Neuss S[§], **De Laporte L**[§]. Actuation of soft thermoresponsive hydrogels mechanically stimulates osteogenesis in human mesenchymal stem cells without biochemical factors. *ACS Appl. Mater. Interfaces* 2024, 16: 30.

10. Bulut S*, Günther D*, Bund M, Haats C, Bissing T, Bastard C, Wessling M, **De Laporte L**[§], Pich A[§]. Cellular architects at work: cells building their own microgel houses. *Adv. Healthc. Mat.* 2023, 2302957.
11. Kittel Y, Guerzoni LPB, Itzin C, Rommel D, Mork M, Bastard C, Häßel B, Omidinia-Anarkoli A, Centeno SP, Haraszti T, Kim K, Guck J, Kuehne AJC[§], **De Laporte L**[§], Varying the stiffness and diffusivity of rod-shaped microgels independently through their molecular building blocks. *Angewandte Chemie Int. Ed.* 2023, e202309779.
12. Schynke L, Meeremans M, Meyer AA, Schoolaert E, Geltmeyer J, Omidinia-Anarkoli A, Van Vlierberghe S, Daelemans L, **De Laporte L**, De Schauwer C, Hoogenboom R, De Clerck K. Cell guiding multicomponent nanoyarn tendon scaffolds with tunable morphology and flexibility. *ACS Appl. Mater. Interfaces* 2023, 15: 42241.
13. Jung SH, Meyer F, Hörnig S, Bund M, Häßel B, Guerzoni LPB, **De Laporte L**, Ben Messaoud G, Centeno SP, Pich A. On-Chip fabrication of colloidal suprastructures by assembly and supramolecular interlinking of microgels. *Small* 2023, 13: e2303444.
14. Bastard C, Günther D, Gerardo-Nava J, Dewerchin M, Sprycha P, Licht C, Lüken A, Wessling M, **De Laporte L**. How does temporal and sequential delivery of multiple growth factors affect vascularization inside 3D hydrogels? *Advanced Therapeutics* 2023, 2300091.
15. **De Laporte L**, Kiessling F. Transformative medical materials. *Adv. Healthc. Mat.* 2023, e2301637.
16. Gerardo-Nava JL*, Jansen J*, Günther D*, Klasen L, Thiebes AL, Niessig B, Bergerbit C, Meyer AA, Linkhorst J, Bart M, Akhyari P, Stingl J, Nagel S, Stiehl T, Lampert A, Leube R, Wessling M, Santoro F, Ingebrandt S, Jockenhoevel S, Herrmann A, Fischer H, Wagner W, Schmitt RH, Kiessling F, Kramann R, **De Laporte L**. Transformative materials to create 3D functional human tissue models in vitro in a reproducible manner. *Adv. Healthc. Mat.* 2023, e2301030.
17. Fernández-Colino A, Kiessling F, Slabu I, **De Laporte L**, Akhyari P, Nagel SK, Stingl J, Reese S, Jockenhoevel S. Lifelike Transformative Materials for Biohybrid Implants: Inspired by Nature, Driven by Technology. *Adv. Healthc. Mat.* 2023, e2300991.
18. Dasgupta A, Sun T, Palomba R, Rama E, Zhang Y-Z, Power C, Moeckel D, Liu M, Weiler M, Motta A, Barmin A, Graham A, McClelland A, Rommel D, Kiessling F, Pallares RM, **De Laporte L**, Decuzzi P, McDannold N, Mitragotri S*, Lammers T*. Nonspherical ultrasound bubbles. *PNAS* 2023, 120: e2218847120.
19. Boesveld S*, Kittel Y*, Luo Y, Jans A, Oezciftci A, Bartneck M, Preisinger C, Rommel D, Boersma A, Haraszti T, Trautwein C[§], **De Laporte L**[§], Kuehne AJC[§], Strnad P[§]. Microgels as platforms for antibody-mediated cytokine scavenging. *Adv. Healthc. Mat.* 2023, e2300695.
20. Sheybanifard M, Guerzoni LPB, Omidinia-Anarkoli A, **De Laporte L**, Buyel J, Besseling R, Damen M, Gerich A, Lammers L, Metselaar JM. Liposome manufacturing under continuous flow conditions: towards a fully integrated set-up with in-line control of critical quality attributes. *Lab on a Chip* 2022, 23: 182.
21. Barmin R, Dasgupta A, Rix A, Weiler M, Appold L, Rutten S, Padilla F, Kuehne A, Pich A, **De Laporte L**, Kiessling F, Pallares R[§], Lammers T[§]. Enhanced stable cavitation and non-linear acoustic responses of PBCA polymeric microbubbles after bioconjugation. *ACS Biomaterials Science & Engineering* 2022, Online.
22. Suturen AC, Krüger AJD, Neidig K, Klos N, Bund M, Gronemann T, Sebers R, Manukanc A, Yazdani G, Kittel Y, Rommel D, Haraszti T, Köhler J, **De Laporte L**. Assembly of high aspect ratio microgels to vary macropores of 3D cell scaffolds, *Advanced Healthcare Materials* 2022, 11: e2200989.
23. Braunmiller DL*, Babu S*, Gehlen DB, Seuß M, Haraszti T, Falkenstein A, Eigen J, **De Laporte L**[§], Crassous J[§]. Pre-programmed rod-shaped microgels to create multi-directional Anisogels for 3D tissue engineering. *Advanced Functional Materials* 2022, 32: 2202430.
24. Friedman F, Babu S, Springer R, Konrad J, Herfs Y, Gerlach S, Gehlen J, Krause H.-J., **De Laporte L**, Merkel R, Noetzel E. ECM-transmitted shear stress induces apoptotic cell extrusion in early breast gland development. *Frontiers in Cell and Developmental Biology* 2022, 10: 947430.
25. Barmin R, Dasgupta A, Bastard C, **De Laporte L**, Rütten S, Weiler M, Kiessling K, Lammers T, Pallares RM. Engineering the acoustic response and drug loading capacity of PBCA-based polymeric microbubbles with surfactants. *Molecular Pharmaceutics* 2022, 19: 3256.

26. Guerzoni LPB, de Goes AVC, Kalacheva M, Hadula J, Mork M, **De Laporte L**, Boersma AJ. High macromolecular crowding in liposomes from microfluidics. *Advanced Sciences* 2022, 9: 2201169.
27. Babu S, Chen I, Vedaraman S, Gerardo-Nava J, Licht C, Kittel Y, Haraszti T, Russo JD, **De Laporte L**. How do the local physical, biochemical, and mechanical properties of a synthetic Anisogel affect oriented nerve growth? *Advanced Functional Materials* 2022, 32: 2202468.
28. Bai X, Sun Q, Guerzoni LPB, Wuttke S, Kiessling F, **De Laporte L**, Lammers T, Shi Y. Controlled covalent self-assembly of a homopolymer for multi-scale materials engineering. *Advanced Materials* 2022, 34: 2109701.
29. Rommel D, Vedaraman S, Mork M, **De Laporte L**. Interlinked macroporous 3D scaffolds from microgel rods. *Journal of Visualized Experiments* 2022,184, e64010.
30. Chandorkar Y, Bastard C, Di Russo J, Haraszti T, **De Laporte L**. Cells feel the beat – Temporal effect of cyclic mechanical actuation on muscle cells. *Applied Materials Today* 2022, 27: 101492.
31. Jung S-H, Bulut S, Guerzoni LPB, Günther D, Braun S, **De Laporte L**, Pich A. Fabrication of pH-degradable supramolecular microgels with tunable size and shape via droplet-based microfluidics. *Journal of Colloid and Interface Science* 2022, 617: 409.
32. Rommel D, Mork M, Vedaraman S, Bastard C, Guerzoni LPB, Kayku Y, Vinokur R, Born N, Haraszti T, **De Laporte L**. Functionalized microgel rods crosslinked into soft macroporous structures for 3D cell culture. *Advanced Science* 2022, e2103554.
33. Kittel Y, Kuehne AJC*, **De Laporte L***. Translating therapeutic microgels into clinical applications. *Advanced Healthcare Materials* 2021, e2101989.
34. De Keer L, Cavalli F, Estupiñán D, Krüger AJD, Rocha S, Van Steenberge PHM, Reyniers M-F, **De Laporte L**, Hofkens J, Barner L, D’hooge DR. Synergy of advanced experimental and modeling tools to underpin the synthesis of static step-growth-based networks involving polymeric precursor building blocks. *Macromolecules* 2021, 54: 9280.
35. Vedaraman S, Perez-Tirado A, Gerardo-Nava J, Haraszti T, Nishiguchi A, **De Laporte L**. Anisometric microstructures to determine minimal critical physical cues required for neurite alignment. *Adv. Healthcare Materials* 2021, 10: e2100874.
36. Babu S, Albertine F, Omidinia-Anarkoli A, **De Laporte L**. Controlling structure with injectable biomaterials to better mimic tissue heterogeneity and anisotropy. *Advanced Healthcare Materials* 2021, 10: e2002221.
37. Vedaraman S, Licht JC, Bernhagen D, Timmerman P, **De Laporte L**. Bicyclic RGD peptides enhance nerve growth in synthetic PEG-based Anisogels. *Biomaterials Science* 2021, 9: 4329.
38. Nothdurft K, Muller DH, Murtz S, Meyer AA, Brands T, Guerzoni LPB, Jahns A, Kuehne AJC, **De Laporte L**, Bardow A, Vedaraman S, Richtering W. Is the Microgel Collapse a two-Step process? Exploiting cononsolvency to probe the collapse dynamics of poly-N-isopropylacrylamide (pNIPAM). *The Journal of Physical Chemistry B* 2021, 125: 1503.
39. Duarto Campos D, **De Laporte L**. Digitally fabricated and naturally augmented in vitro tissues. *Advanced Healthcare Materials* 2021, 10: e2001253.
40. Lüken A, Linkhorst J, Fröhlingsdorf R, Lippert L, Rommel D, **De Laporte L**, Wessling M. Unravelling colloid filter cake motions in membrane cleaning procedures. *Scientific Reports* 2020, 10: 20043.
41. Gehlen DB, Juergens N, George J, Walther A, Ye, **De Laporte L**. Granular cellulose nanofibril hydrogel scaffolds for 3D cell cultivation. *Macromolecular Rapid Communications* 2020, 41: e2000191.
42. Rose JC, Gehlen D, Omidinia Anarkoli A, Fölster M, Haraszti T, Jaekel E, **De Laporte L**. How much physical guidance is needed to orient growing axons in 3D hydrogels? *Advanced Healthcare Materials* 2020, 21: e2000886.
43. Omidinia Anarkoli A, Ephraim J, Rimal R, **De Laporte L**. Hierarchical fibrous guiding cues at different scales influence linear neurite extension. *Acta Biomaterialia* 2020, 113: 350.
44. Krüger M, Oosterhoff LA, van Wolferen ME, Schiele SA, Walther A, Geijsen N, **De Laporte L**, van der Laan LJW, Kock LM, Spee B. Cellulose Nanofibril Hydrogel Promotes Hepatic Differentiation of Human Liver Organoids. *Adv. Heathc. Mater.* 2020, e1901658.
45. Wolff HJM, Linkhorst J, Göttlich T, Savinsky J, Krüger AJD, **De Laporte L**, Wessling M. Soft Temperature-Responsive Microgels of Complex Shape in Stop-Flow-Lithography. *Lab on a Chip* 2020, 20: 285.

46. Rose JC, Fölster M, Kivilip L, Gerardo-Nava JL, Jaekel EE, Gehlen DB, Rohlf s W[§], **De Laporte L**[§]. Predicting the orientation of magnetic microgel rods for soft anisotropic biomimetic hydrogels. *Polymer Chemistry* 2020, 11: 496.
47. Jans A, Lölsberg J, Omidinia-Anarkoli A, Viermann R, Möller M, **De Laporte L**, Wessling M, Kühne AJC. High-throughput production of micrometer sized double emulsions and microgel capsules in parallelized 3D printed microfluidic devices. *Polymers* 2019, 15: e1887.
48. Krüger AJK*, Bakirman O*, Guerzoni LPB, Jans A, Gehlen DB, Rommel D, Haraszti T, Kuehne AJC, **De Laporte L**. Compartmentalized jet polymerization as high-resolution process to continuously produce anisometric microgel rods with adjustable size and stiffness. *Adv Mater.* 2019, e1903668.
49. Gehlen DB, De Lencastre Novaes LC, Long W. Joelle Ruff A, Jakob F, Haraszti T, Liangliang Y, Schwaneberg U, **De Laporte L**. Rapid and robust coating method to render polydimethylsiloxane surfaces cell adhesive. *ACS Appl Mater Interfaces* 2019, 11: 41091.
50. Licht CJ, Rose CJ, Omidinia-Anarkoli A, Blondel D, Roccio M, Haraszti T, Hubbell JA, Lutolf M, **De Laporte L**. Synthetic 3D PEG-Anisogels tailored with fibronectin fragments induce aligned nerve extension. *Biomacromolecules* 2019, 20: 4075.
51. Chandorkar Y, Castro Nava A, Schweizerhof S, van Dongen M, Haraszti T, Köhler J, Zhang H, Windoffer R, Mourran A, Möller M, **De Laporte L**. Cellular responses to beating hydrogels to investigate mechanotransduction. *Nat Commun.* 2019, 10: 4027.
52. Guerzoni LPB, Tsukamoto Y, Akashi M, **De Laporte L**. A Layer-by-layer single-cell coating technique to produce injectable mini heart tissues via microfluidics. *Biomacromolecules.* 2019, 20(10): 3746.
53. Dietrich D, Licht CJ, **De Laporte L**, Janiak C. Metallo- and aerogels based on a bisamide tetracarboxyl ligand for carbon dioxide, sulfur dioxide and selective dye uptake. *ACS Appl Mater Interfaces* 2019, 11: 19654.
54. Guerzoni LPB, Jans A, Gehlen DB, Rose J, Haraszti T, Wessling M, Kuehne AJC, **De Laporte L**. Cell encapsulation in soft, anisometric poly(ethylene) glycol microgels using a novel radical-free microfluidic system. *Small* 2019, 15: e1900692.
55. Omidinia-Anarkoli A, Rimal R, Chandorkar Y, Gehlen D, Rose J, Rahimi K, **De Laporte L**. Solvent induced nanotopographies of single microfibers regulate cell mechanotransduction. *ACS Appl Mater Interfaces* 2019, 11: 7671.
56. Krüger M, Spee B, Walther A, **De Laporte L**, Kock LM. Nanofibrillar cellulose as an enzymatically and flow driven degradable scaffold for 3D tissue engineering. *ASME J of Medical Diagnostics* 2019, 2: 041001.
57. Krüger AJK, Köhler J, Rose J, Gehlen DB, Haraszti T, Möller M, **De Laporte L**. A catalyst-free, temperature controlled gelation system for in-mold fabrication of microgels. *Chem Commun.* 2018, 54: 6943.
58. Repenko T, Rix A, Haehnle B, Lederle W, **De Laporte L**, Kuehne AJC. A water-soluble PEGylated RGD-functionalized bisbithiophenyl diketopyrrolopyrrole as a photoacoustic sonophore. *Photochem Photobiol Sci.* 2018, 17: 617.
59. Goetzke R, Sechi A*, **De Laporte L***, Neuss S*, Wagner W*. Why the impact of mechanical stimuli on stem cells remains a challenge. *Review paper Cellular and molecular life sciences* 2018, 7: 3297.
60. Rose JC, Gehlen DB, Haraszti T, Köhler J, Licht CJ, **De Laporte L**. Biofunctionalized aligned microgels to provide 3D cell guidance to mimic complex tissue matrices. *Biomaterials*, 2018, 163: 128.
61. Rose J, **De Laporte L**. Hierarchical design of tissue regenerative constructs. *Review paper. Adv Healthc Mater.* 2018, 7: e1701067.
62. Repenko T, Rix A, Nedilkoc A, Rose J, Hermann A, Vinokur R, Moli S, Cao-Milànd R, von Plessen G, König TAF, Fery A, **De Laporte L**, Lederle W, Chigrina DN, Kuehne AJC. Strong photoacoustic signal enhancement by coating gold nanoparticles with melanin for biomedical imaging. *Adv Funct Mater.* 2018, 28: 1705607.
63. Omidinia-Anarkoli A, Boesveld S, Tuvshindorj U, Rose J, Haraszti T, **De Laporte L**. An injectable hybrid hydrogel with oriented short fibers induces unidirectional growth of functional nerve cells. *Small* 2017, 13: 1702207.
64. Guerzoni LPB, Bohl J, Jans A, Rose JC, Köhler J, Kuehne AJC, **De Laporte L**. Microfluidic fabrication of polyethylene glycol microgel capsules with tailored properties for the delivery of biomolecules. *Biomaterials Science.* 2017, 5: 1549.

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66. Rose J, Cámara-Torres M, Rahimi K, Köhler J, Möller M, **De Laporte L**. Nerve cells decide to orient inside an injectable hydrogel with minimal structural guidance. *Nano Letters*, 2017, 17: 3782.
67. Torres-Rendon JG, Köpf M, Gehlen D, Blaeser A, Fisher H, **De Laporte L**, Walther A. Cellulose nanofibril hydrogel tubes as sacrificial templates for freestanding tubular cell constructs. *Biomacromolecules* 2016, 17: 905.
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70. Hopkins AM, **De Laporte L**, Tortelli F, Spedden E, Staii C, Atherton T, Hubbell JA, Kaplan DL. Silk hydrogels as soft substrates for neural tissue engineering. *Adv Funct Mater.* 2013, 23: 5140.
71. **De Laporte L***, Rice JJ*, Tortelli F, Hubbell JA. Tenascin C promiscuously binds growth factors via its fifth fibronectin type III-like domain. *PLoS One* 2013, 8: e62076.
72. Rice JJ*, Martino MM*, **De Laporte L***, Tortelli F*, Briquez PS, Hubbell JA. Engineering the regenerative microenvironment with biomaterials. *Adv Healthc Mater.* 2013, 2: 57.
73. **De Laporte L**, des Rieux A, Tuinstra HM, Zelivyanskaya ML, De Clerck NM, Postnov AA, Préat V, Shea LD. Vascular endothelial growth factor and fibroblast growth factor 2 delivery from spinal cord bridges to enhance angiogenesis following injury. *J Biomed Mater Res Part A* 2011, 98: 372.
74. **De Laporte L**, Huang A, Ducommun M, Zelivyanskaya ML, Aviles MO, Adler A, Shea LD. Patterned gene expression from tissue engineering scaffolds for spinal cord regeneration. *Acta Biomaterialia* 2010, 6: 2889.
75. Yang Y, **De Laporte L**, Zelivyanskaya ML, Whittlesey KJ, Anderson AJ, Cummings BJ, Shea LD. Multiple channel bridges for spinal cord injury: cellular characterization of host response. *Tissue Eng Part A* 2009, 15: 3283.
76. Zhang XQ, Tang H, Hoshi R, **De Laporte L**, Qiu H, Xu X, Shea LD, Ameer GA. Sustained transgene expression via citric acid-based polyester elastomers. *Biomaterials* 2009, 30: 2632.
77. **De Laporte L**, Yan AL, Shea LD. Local gene delivery from ECM-coated poly(lactide-co-glycolide) multiple channel bridges after spinal cord injury. *Biomaterials* 2009, 30: 2361.
78. **De Laporte L**, Yang Y, Zelivyanskaya ML, Cummings BJ, Anderson AJ, Shea LD. Plasmid releasing multiple channel bridges for transgene expression after spinal cord injury. *Mol Ther.* 2009 17: 318
79. **De Laporte L**, Shea LD. Matrices and Scaffolds for DNA Delivery in Tissue Engineering. *Adv Drug Delivery Reviews* 2006, 59: 292.
80. **De Laporte L**, Cruz Rea J, Shea LD. Design of modular non-viral gene therapy vectors. *Biomaterials* 2006, 28: 947.
81. Yang Y, **De Laporte L**, Rives CB, Jang J-H, Shull K, Shea LD. Controlled NGF release from single-lumen and multi-lumen conduits for nerve regeneration. *J. Control Release* 2005, 104: 433.

BOOK CHAPTERS

1. Gerardo Nava, Jose L., Jonas C. Rose, Haktan Altinova, Paul D. Dalton, **Laura De Laporte**, and Gary A. Brook. Book Chapter "Nanofibers and Nanostructured Scaffolds for Nervous System Lesions." In *Nanomedicines for Brain Drug Delivery*, pp. 61-101. Humana, New York, NY, 2021. DOI: 10.1007/978-1-0716-0838-8_3

PATENTS

1. **De Laporte L**, Köhler J, Krüger A: Deutsche Patentanmeldung Nr. 10 2023 108 039.3 Titel: Ein System zur Herstellung eines degradierbaren Hydrogels, March 2023.

2. **De Laporte L**, Moeller M, Rose JC, Omidinia-Anarkoli A: Macroscopically alignable, injectable, soft hydrogel composite (EP 3452120 B1, May 27 2020; US 11071806 B2, Jul 21 2021; EP 20166781.3 Divisional, 2022).
3. Hubbell JA, Martino MM, **De Laporte L**, Rice JJ, Tortelli F.: Tissue Repair Formulations from extracellular matrix heparin-binding domains. U.S. Patent (US 20140011978 A1, Jan 9 2014)
4. Shea LD, Shea LL, Whittlesey KJ, Yang Y, Rives CB, **De Laporte L**, Jang J-H. Biodegradable scaffolds and uses thereof. U.S. Patent (Patent No US 7,846,466 B2, Dec 7 2010)

TEACHING AT RWTH

2020 – current	Polymer Properties and Characterization Methods, Max Planck School – Matter to Life (<i>10 h, SS Summer Semester</i>)
2019 – current	Macromolecular Chemistry II, Chemistry B.Sc., RWTH (<i>10,5 h, SS</i>)
2018 – current	Biomaterials, Chemistry M.Sc., RWTH (<i>10,5 h, both WS and SS</i>)
2018 – current	Introduction to Polymers, Chemistry and Biochemistry, Biomedical Engineering M.Sc., UKA/RWTH (<i>10,5 hrs, WS Winter Semester</i>)
2015 – 2017	Introduction to Polymers, Chemistry and Biochemistry, Biomedical Engineering M.Sc., UKA/RWTH (<i>6 hrs, WS</i>)
2016 – current	Materials Science and Processing, Biomedical Engineering M.Sc., UKA/RWTH (<i>4,5 hrs</i>)
2017 – current	Biointerface/Implantologie, Biomedical Engineering M.Sc., UKA/RWTH (<i>1,5 hrs, WS</i>)
09/2022	Passion for Science, Max Planck School Days, Berlin
09/2022	Summer School SFB985 RWTH: Microgels as solution to solve challenges in tissue engineering, Monschau
10/2021	Digital Seminar SFB1459 – Intelligent Matter, Westfälische Wilhelms-Universität (WWU) Münster
09/2021	Lecture: Synthetic hydrogels for Tissue Engineering, GRK2415 – Mechanobiology, Aachen
11/2021	Lecture: Production methods and characterization of microgels to tackle tissue engineering challenges, GRK2415 – Mechanobiology, Aachen
05/2021	Digital Rudolf Mößbauer Colloquium - Max Planck Institute for Medical Research
01/2019	Colloquium Macromolecular Chemistry, University of Mainz
12/2018	Colloquium Physical Chemistry, University of Dusseldorf
09/2018	Guest Lecture RTG1865: Hydrogel-based microsystems, Dresden
07/2018	Summer School SFB985 RWTH - Georgia Tech University: Microgels for regenerative medicine, Monschau
05/2018	Ringlecture Collaborative Research Center, CRC985 Functional microgels and microgel systems, RWTH
06/2016	Neurosciences, Biomedical Engineering M.Sc., RWTH (<i>1,5 hrs</i>)
06/2015	Summer School RWTH - Georgia Tech University: Fabrication of anisometric microgels, Aachen
04/2015	Colloquium Biotechnology, Uniklinik Aachen
09/2014	Biomaterials for Tissue Engineering, Biotechnology, RWTH (<i>Guest lecture</i>)
04/2014	Introduction to Tissue Engineering, University of Ghent (<i>Guest lecture</i>)

AWARDS

2024	Belgian Polymer Award
2019	Steinhofer Vorlesung
2018	Young Investigator Award – Engineering Conferences International
2016	Max-Buchner-Forschungstiftung

09/2008 – 06/2009 Terminal Year Richter Fellowship, Northwestern University
2008 AIChE Women's Initiatives Committee Travel Award, USA
2006, 2007, 2008 Conference Travel Grant, Northwestern University (yearly)
2006 CGM Travel Fellowship Award, USA
09/2004 – 08/2005 International Doctoral Fellowship, Northwestern University

SCIENTIFIC PRESENTATIONS

2024 Presence: Joint Workshop RWTH, Tokyo Tech and TMDU: Novel materials and AI-based methods for healthcare applications, Tokyo JP; Seminar Heinrich Heine University Düsseldorf; Seminar Max Planck Institute for Polymer Research, Mainz; Annual Meeting Material-driven regeneration, Eindhoven NL; Future 3D Additive Manufacturing Conference, Schöntal Monestary; World Biomaterials Congress, Daegu S. Korea; Belgian Polymer Conference, De Haan, BE; Annual Meeting European Society for Artificial Organs, Aachen; Annual meeting Belgian Society for Tissue Engineering, Leuven BE; Joint Workshop RWTH and Institute of Science Tokyo: Transformative medical materials

Digital: BASF

2023 Digital: International Webinars on Topics on Cell and Tissue Engineering (CTEng), University of Aveiro PT.

Presence: 4th Patricia Levy Zusman International Workshop on Neuroregeneration, Houston Methodist Hospital US; BME Neuroscience seminar, University Hospital RWTH Aachen; Killam Seminar, McGill University Montreal CA; Summer School 3D printing and Biofabrication, University Medical Center Utrecht NL; ETH Zürich Seminar, CH; SPP2451 Living Material Workshop, Saarland University Saarbrücken; Dresden Polymer Conference; Center for Molecular Medicine Cologne Seminar, University of Cologne; European Society for Biomaterials, Davos CH; Chemistry for a better Life, RWTH Aachen.

2022 Digital: 16th Annual Meeting RSC Biomaterials Chemistry; Faculty Club RWTH; Spring Days Max Planck School Matter to Life

Presence: Institute for Complex Molecular Systems (ICMS) symposium, Eindhoven; Max Planck School Days, Berlin; SIIRI Symposium Hannover; Spinal Research (ISRT), London; Material Science and Engineering (MSE), Darmstadt; Joint Symposium RTG2375 RWTH-TU Eindhoven, Aachen; Seminar, TU Eindhoven; Merck-GDCh-Kolloquiums, Darmstadt; Biofabrication meets Infection Symposium, Würzburg, Physiologisches Kolloquium UKA, Aachen

2021 Digital: Tissue Engineering and Regenerative Medicine International Society (TERMIS) World Conference; Japanese Society for Cell Synthesis Research; Seminar CRC 1459 – Intelligent Matter; European Society for Biomaterials (ESB); Korean Spinal Research Society; International Online Spinal Cord Injury seminar Series (I-OSCIRS); GDCh Lectures; Seminar University of Hasselt; Umbrella Meeting with Technion University Israel; Rudolf Mößbauer Colloquium - Max Planck Institute for Medical Research; Webinar International Society for Biofabrication (ISBF); Seminar University of Erlangen; Japan-Aachen Workshop Nanomedicine; German-American Frontiers of Engineering (GAFOE)

2020 Digital: 5th Bioinspired Materials, Irsee; Max Planck School: Matter to Life Lecture Series Webinar; SynCell2020 Virtual Symposium; Online seminar for the German Society for Biomaterials; Leibniz Meet the Scientist; Online Seminar EPFL; Tissue Engineering Conference UKA Aachen; Moderator Brightland Feel the Chemistry, Health Challenge, Geleen, NL

2019 Seminar University Duisburg-Essen; Seminar University Mainz; Biospine Rome IT; Steinhof Vorlesung Freiburg DE; Leibniz Gemeinschaft ERC workshop, Berlin; Max Planck School, Heidelberg; 16th Biennial Bayreuth Polymer Symposium; Particle Based Materials Symposium, Ulm; Biofabrication, Columbus OH, USA; RWTH Senioren, Aachen; N2 Event, Berlin; Sino Event, Aachen; APC Twin Waters, Australia; Bioinspired Materials, Monte Verita, CH; MERLN PhD Symposium Maastricht, NL; Chains Eindhoven, NL; Block-Kolloquium Biomedical materials INM Saarbrücken

2018 Seminar University Dusseldorf; Jahrestagung der Deutschen Gesellschaft für Biomaterialien, Braunschweig; Magnetism, Paris FR; Biointerface International Conference, Zurich CH, Nanotechnology in Medicine II, Albufeira PT, Konferenz Materialinnovationen - Material Vital, München, 2nd Theodore von Kármán - Discussion Conference on Materials for Life, Bergisch Gladbach;

KStV Grotenburg Lusatia, Aachen; Kékulé Cycle, Antwerp BE; ACS Annual Meeting, New Orleans, US; Seminar Forces, materials, cellular responses, Aachen; 9th Workshop of Chemical and Biological Micro Laboratory Technology, Ilmenau.

2017 Ringberg Castle Symposium on 4D Molecular Systems Engineering, Schlöss Ringberg; Jahrestagung der Deutschen Gesellschaft für Biomaterialien, Würzburg; American Institute of Chemical Engineers (AIChE), Minneapolis US; Particle-Based Materials Symposium, Saarbrücken; Mechanobiologie-Kolloquium, Aachen DE; 12th International Conference on Advanced Polymers via Macromolecular Engineering, Ghent BE; NVMB-NBTE symposium, Lunteren NL; Biospine, Berlin; eFFECT event on ChemTech & Healthcare, Ghent BE; Mechanobiology-Symposium, Uniklinik Aachen; The 13th Zsigmondy colloquium of the German Colloid Society, Saarbrücken; Symposium “Biomaterials-based approaches to personalized medicine”, Leibniz Gesundheitstechnologien, Berlin; 5th International Conference on Multifunctional, Hybrid and Nanomaterials, Lisbon Portugal.

2016 7th BSRT Symposium “Regenerate me if you can” Foster success in compromised regenerative processes, Charité, Berlin DE; American Institute of Chemical Engineers (AIChE), San Francisco US; Biomedical engineering Society (BMES) (*poster*), Minneapolis US; Jahrestagung der Deutschen Gesellschaft für Biomaterialien, Aachen DE; Active Hydrogels - An interdisciplinary symposium on the different designs and utilizations of hydrogels, Schlöss Ringberg DE.

2015 BSRT Symposium “Revealing Prometheus secrets” Current technologies for tissue & organ regeneration and their clinical perspective, Charité, Berlin DE; Engineering Life: Synthetic biology meets bio-inspired materials, Dresden DE; Engineering of functional interfaces (Enfi), Hannover DE; Seleca Symposium, Osaka University Japan; Umbrella Symposium, Haifa Israel.

2014 Umbrella Symposium, Aachen DE; Aachen Polymer Chain (APC) Talks, Aachen DE.

<2014 Tissue Engineering & Regenerative Medicine International Society (TERMIS): Vienna, Austria (2014), Galway, Ireland (2010); AIChE: Philadelphia, US (2008), Salt Lake City US (2007), San Francisco US (2006); Society for Neuroscience, Atlanta, US (*poster*) (2006).

ORGANIZATION CONFERENCES

09/2023	European Society for Biomaterials Conference, Davos CH
2021-24	Women Interactive Materials Award (WIMA), DWI
09/2022	GDCh meeting of the Macromolecular Chemistry Division, Aachen
04/2019	GDCh-Wissenschaftsforums Chemie 2019 – Session „Interactive Materials for Life“, Aachen
04/2018	2nd Theodore von Kármán – Discussion Conference on Materials for Life: Bioinspired and biomimetic hydrogels, Bergisch Gladbach
08/2016	Jahrestagung der Deutschen Gesellschaft für Biomaterialien, Aachen