# Matthias P Lutolf

List of Publications by Year
in descending order

Source: https://exaly.com/author-pdf/10894829/publications.pdf

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| 77 | 14,651 | 36203 | 74018 |
|---|---|---|---|
| papers | citations | 51 h-index | 75 g-index |

| 81 | 81 | 81 | 18273 |
|---|---|---|---|
| all docs | docs citations | times ranked | citing authors |

| # | Article | IF | Citations |
|---|---|---|---|
| 1 | Designing materials to direct stem-cell fate. Nature, 2009, 462, 433-441. | 13.7 | 1,276 |
| 2 | Designer matrices for intestinal stem cell and organoid culture. Nature, 2016, 539, 560-564. | 13.7 | 1,027 |
| 3 | NAD <sup>+</sup> repletion improves mitochondrial and stem cell function and enhances life span in mice. Science, 2016, 352, 1436-1443. | 6.0 | 907 |
| 4 | Repair of bone defects using synthetic mimetics of collagenous extracellular matrices. Nature Biotechnology, 2003, 21, 513-518. | 9.4 | 797 |
| 5 | Progress and potential in organoid research. Nature Reviews Genetics, 2018, 19, 671-687. | 7.7 | 693 |
| 6 | Bioengineered 3D platform to explore cellâ€“ECM interactions and drug resistance of epithelial ovarian cancer cells. Biomaterials, 2010, 31, 8494-8506. | 5.7 | 533 |
| 7 | Cellâ€demanded release of VEGF from synthetic, biointeractive cellâ€ingrowth matrices for vascularized tissue growth. FASEB Journal, 2003, 17, 2260-2262. | 0.2 | 501 |
| 8 | Engineering organoids. Nature Reviews Materials, 2021, 6, 402-420. | 23.3 | 497 |
| 9 | Metabolic control of adult neural stem cell activity by Fasn-dependent lipogenesis. Nature, 2013, 493, 226-230. | 13.7 | 448 |
| 10 | Homeostatic mini-intestines through scaffold-guided organoid morphogenesis. Nature, 2020, 585, 574-578. | 13.7 | 408 |
| 11 | Heparin-binding domain of fibrin(ogen) binds growth factors and promotes tissue repair when incorporated within a synthetic matrix. Proceedings of the National Academy of Sciences of the United States of America, 2013, 110, 4563-4568. | 3.3 | 401 |
| 12 | Artificial niche microarrays for probing single stem cell fate in high throughput. Nature Methods, 2011, 8, 949-955. | 9.0 | 376 |
| 13 | Protein delivery from materials formed by self-selective conjugate addition reactions. Journal of Controlled Release, 2001, 76, 11-25. | 4.8 | 328 |
| 14 | Biopolymeric delivery matrices for angiogenic growth factors. Cardiovascular Pathology, 2003, 12, 295-310. | 0.7 | 321 |
| 15 | The hope and the hype of organoid research. Development (Cambridge), 2017, 144, 938-941. | 1.2 | 303 |
| 16 | Three-dimensional extracellular matrix-directed cardioprogenitor differentiation: Systematic modulation of a synthetic cell-responsive PEG-hydrogel. Biomaterials, 2008, 29, 2757-2766. | 5.7 | 294 |
| 17 | In situ cell manipulation through enzymatic hydrogel photopatterning. Nature Materials, 2013, 12, 1072-1078. | 13.3 | 282 |
| 18 | The effect of matrix characteristics on fibroblast proliferation in 3D gels. Biomaterials, 2010, 31, 8454-8464. | 5.7 | 271 |

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|---|---|---|---|
| 19 | Biomolecular Hydrogels Formed and Degraded via Site-Specific Enzymatic Reactions. Biomacromolecules, 2007, 8, 3000-3007. | 2.6 | 264 |
| 20 | Microdrop Printing of Hydrogel Bioinks into 3D Tissueâ€Like Geometries. Advanced Materials, 2012, 24, 391-396. | 11.1 | 231 |
| 21 | High-throughput automated organoid culture via stem-cell aggregation in microcavity arrays. Nature Biomedical Engineering, 2020, 4, 863-874. | 11.6 | 231 |
| 22 | Engineering Stem Cell Self-organization to Build Better Organoids. Cell Stem Cell, 2019, 24, 860-876. | 5.2 | 228 |
| 23 | Spotlight on hydrogels. Nature Materials, 2009, 8, 451-453. | 13.3 | 211 |
| 24 | Enzymatic formation of modular cell-instructive fibrin analogs for tissue engineering. Biomaterials, 2007, 28, 3856-3866. | 5.7 | 203 |
| 25 | Bovine Primary Chondrocyte Culture in Synthetic Matrix Metalloproteinase-Sensitive Poly(ethylene) Tj ETQq1 1 0.784314 rgBT /Overl | 4.9 | 192 |
| 26 | Neural tube morphogenesis in synthetic 3D microenvironments. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, E6831-E6839. | 3.3 | 186 |
| 27 | Drug discovery through stem cell-based organoid models. Advanced Drug Delivery Reviews, 2014, 69-70, 19-28. | 6.6 | 172 |
| 28 | Perturbation of single hematopoietic stem cell fates in artificial niches. Integrative Biology (United) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 50 | 0.6 | 170 |
| 29 | Capturing Cardiogenesis in Gastruloids. Cell Stem Cell, 2021, 28, 230-240.e6. | 5.2 | 167 |
| 30 | Biomimetic hydrogels for controlled biomolecule delivery to augment bone regeneration. Advanced Drug Delivery Reviews, 2012, 64, 1078-1089. | 6.6 | 166 |
| 31 | Next-generation cancer organoids. Nature Materials, 2022, 21, 143-159. | 13.3 | 163 |
| 32 | In Situ Patterning of Microfluidic Networks in 3D Cellâ€Laden Hydrogels. Advanced Materials, 2016, 28, 7450-7456. | 11.1 | 145 |
| 33 | The NAD-Booster Nicotinamide Riboside Potently Stimulates Hematopoiesis through Increased Mitochondrial Clearance. Cell Stem Cell, 2019, 24, 405-418.e7. | 5.2 | 143 |
| 34 | Predicting stem cell fate changes by differential cell cycle progression patterns. Development (Cambridge), 2013, 140, 459-470. | 1.2 | 128 |
| 35 | Integration column: microwell arrays for mammalian cell culture. Integrative Biology (United) Tj ETQq1 1 0.784314 rgBT /Overlock 10 T | 0.6 | 125 |
| 36 | Engineered signaling centers for the spatially controlled patterning of human pluripotent stem cells. Nature Methods, 2019, 16, 640-648. | 9.0 | 120 |

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|---|---|---|---|
| 37 | Bioengineering approaches to guide stem cell-based organogenesis. Development (Cambridge), 2014, 141, 1794-1804. | 1.2 | 116 |
| 38 | Mechano-modulatory synthetic niches for liver organoid derivation. Nature Communications, 2020, 11, 3416. | 5.8 | 112 |
| 39 | Synthetic dynamic hydrogels promote degradation-independent in vitro organogenesis. Nature Materials, 2022, 21, 479-487. | 13.3 | 102 |
| 40 | Synthesis and characterization of well-defined hydrogel matrices and their application to intestinal stem cell and organoid culture. Nature Protocols, 2017, 12, 2263-2274. | 5.5 | 98 |
| 41 | 3D Inkjet Printing of Complex, Cell-Laden Hydrogel Structures. Scientific Reports, 2018, 8, 17099. | 1.6 | 96 |
| 42 | The heparin binding domain of von Willebrand factor binds to growth factors and promotes angiogenesis in wound healing. Blood, 2019, 133, 2559-2569. | 0.6 | 81 |
| 43 | Biomaterials meet microfluidics: building the next generation of artificial niches. Current Opinion in Biotechnology, 2011, 22, 690-697. | 3.3 | 75 |
| 44 | Enhancing the Reliability and Throughput of Neurosphere Culture on Hydrogel Microwell Arrays. Stem Cells, 2008, 26, 2586-2594. | 1.4 | 73 |
| 45 | Stem cell niche engineering through droplet microfluidics. Current Opinion in Biotechnology, 2015, 35, 86-93. | 3.3 | 73 |
| 46 | Integration column: Artificial ECM: expanding the cell biology toolbox in 3D. Integrative Biology (United Kingdom), 2009, 1, 235. | 0.6 | 70 |
| 47 | Tailoring hydrogel degradation and drug release via neighboring amino acid controlled esterhydrolysis. Soft Matter, 2009, 5, 440-446. | 1.2 | 66 |
| 48 | The Effect of Thiol Structure on Allyl Sulfide Photodegradable Hydrogels and their Application as a Degradable Scaffold for Organoid Passaging. Advanced Materials, 2020, 32, e1905366. | 11.1 | 58 |
| 49 | Micropatterning of Hydrogels by Soft Embossing. Langmuir, 2009, 25, 8774-8779. | 1.6 | 55 |
| 50 | High-throughput approaches for the analysis of extrinsic regulators of stem cell fate. Current Opinion in Cell Biology, 2012, 24, 236-244. | 2.6 | 54 |
| 51 | A high-capacity cell macroencapsulation system supporting the long-term survival of genetically engineered allogeneic cells. Biomaterials, 2014, 35, 779-791. | 5.7 | 54 |
| 52 | Microscale patterning of hydrogel stiffness through light-triggered uncaging of thiols. Biomaterials Science, 2014, 2, 1640-1651. | 2.6 | 42 |
| 53 | Synthetic 3D PEG-Anisogel Tailored with Fibronectin Fragments Induce Aligned Nerve Extension. Biomacromolecules, 2019, 20, 4075-4087. | 2.6 | 38 |
| 54 | A Versatile Approach to Engineering Biomoleculeâ€Presenting Cellular Microenvironments. Advanced Healthcare Materials, 2013, 2, 292-296. | 3.9 | 37 |

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|---|---|---|---|
| 55 | Cell specific ingrowth hydrogels. Biomaterials, 2013, 34, 6797-6803. | 5.7 | 36 |
| 56 | Antiangiogenic immunotherapy suppresses desmoplastic and chemoresistant intestinal tumors in mice. Journal of Clinical Investigation, 2020, 130, 1199-1216. | 3.9 | 35 |
| 57 | Single-cell analyses identify bioengineered niches for enhanced maintenance of hematopoietic stem cells. Nature Communications, 2017, 8, 221. | 5.8 | 34 |
| 58 | Multiscale microenvironmental perturbation of pluripotent stem cell fate and self-organization. Scientific Reports, 2017, 7, 44711. | 1.6 | 33 |
| 59 | Deterministic scRNA-seq captures variation in intestinal crypt and organoid composition. Nature Methods, 2022, 19, 323-330. | 9.0 | 33 |
| 60 | Robust Phase Unwrapping via Deep Image Prior for Quantitative Phase Imaging. IEEE Transactions on Image Processing, 2021, 30, 7025-7037. | 6.0 | 30 |
| 61 | High-throughput clonal analysis of neural stem cells in microarrayed artificial niches. Integrative Biology (United Kingdom), 2012, 4, 391. | 0.6 | 29 |
| 62 | Lowâ€Defect Thiolâ€Michael Addition Hydrogels as Matrigel Substitutes for Epithelial Organoid Derivation. Advanced Functional Materials, 2020, 30, 2000761. | 7.8 | 28 |
| 63 | Biomimetic PEG hydrogels crosslinked with minimal plasminâ€sensitive triâ€amino acid peptides. Journal of Biomedical Materials Research - Part A, 2010, 93A, 870-877. | 2.1 | 27 |
| 64 | Bioengineering inÂvitro models of embryonic development. Stem Cell Reports, 2021, 16, 1104-1116. | 2.3 | 26 |
| 65 | Patterning of cell-instructive hydrogels by hydrodynamic flow focusing. Lab on A Chip, 2013, 13, 2099. | 3.1 | 23 |
| 66 | Live mammalian cell arrays. Nature Methods, 2013, 10, 550-552. | 9.0 | 20 |
| 67 | Machine Learning of Hematopoietic Stem Cell Divisions from Paired Daughter Cell Expression Profiles Reveals Effects of Aging on Self-Renewal. Cell Systems, 2020, 11, 640-652.e5. | 2.9 | 12 |
| 68 | Microarrayed human bone marrow organoids for modeling blood stem cell dynamics. APL Bioengineering, 2022, 6, . | 3.3 | 12 |
| 69 | Hydrogel Microwell Arrays Allow the Assessment of Protease-Associated Enhancement of Cancer Cell Aggregation and Survival. Microarrays (Basel, Switzerland), 2013, 2, 208-227. | 1.4 | 11 |
| 70 | A Single Metabolite which Modulates Lipid Metabolism Alters Hematopoietic Stem/Progenitor Cell Behavior and Promotes Lymphoid Reconstitution. Stem Cell Reports, 2020, 15, 566-576. | 2.3 | 10 |
| 71 | Extracellular matrix bioengineering and systems biology approaches in liver disease. Systems and Synthetic Biology, 2011, 5, 11-20. | 1.0 | 8 |
| 72 | A generic strategy for pharmacological caging of growth factors for tissue engineering. Chemical Communications, 2013, 49, 5927. | 2.2 | 8 |

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|---|---|---|---|
| 73 | High-throughput stem cell-based phenotypic screening through microniches. Biomaterials Science, 2019, 7, 3471-3479. | 2.6 | 8 |
| 74 | Artificial niche microarrays for identifying extrinsic cell-fate determinants. Methods in Cell Biology, 2018, 148, 51-69. | 0.5 | 6 |
| 75 | Employing Microfluidic Devices to Induce Concentration Gradients. , 2017, , 429-442. | | 4 |
| 76 | Mammary epithelial morphogenesis in 3D combinatorial microenvironments. Scientific Reports, 2020, 10, 21635. | 1.6 | 4 |
| 77 | Synthetic Biomaterials as Cell-Responsive Artificial Extracellular Matrices. , 2008, , 255-278. | | 0 |