

# Hyowon Lee

## List of Publications by Year in descending order

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107  
papers

2,851  
citations

159525

30  
h-index

197736

49  
g-index

110  
all docs

110  
docs citations

110  
times ranked

3342  
citing authors

#	ARTICLE	IF	CITATIONS
1	Identification and quantitation of lipid C=C location isomers: A shotgun lipidomics approach enabled by photochemical reaction. Proceedings of the National Academy of Sciences of the United States of America, 2016, 113, 2573-2578.	3.3	260
2	Three-dimensional gradients of voltage during development of the nervous system as invisible coordinates for the establishment of embryonic pattern. Developmental Dynamics, 1995, 202, 101-114.	0.8	143
3	Immediate recovery from spinal cord injury through molecular repair of nerve membranes with polyethylene glycol. FASEB Journal, 2000, 14, 27-35.	0.2	115
4	Acute Repair of Crushed Guinea Pig Spinal Cord by Polyethylene Glycol. Journal of Neurophysiology, 1999, 81, 2406-2414.	0.9	111
5	Pathological correlations between traumatic brain injury and chronic neurodegenerative diseases. Translational Neurodegeneration, 2017, 6, 20.	3.6	104
6	Conduction Deficits and Membrane Disruption of Spinal Cord Axons as a Function of Magnitude and Rate of Strain. Journal of Neurophysiology, 2006, 95, 3384-3390.	0.9	101
7	Acrolein-mediated injury in nervous system trauma and diseases. Molecular Nutrition and Food Research, 2011, 55, 1320-1331.	1.5	91
8	Glutamate Excitotoxicity Inflicts Paranodal Myelin Splitting and Retraction. PLoS ONE, 2009, 4, e6705.	1.1	86
9	Chitosan nanoparticle-based neuronal membrane sealing and neuroprotection following acrolein-induced cell injury. Journal of Biological Engineering, 2010, 4, 2.	2.0	67
10	Facile fabrication of flexible glutamate biosensor using direct writing of platinum nanoparticle-based nanocomposite ink. Biosensors and Bioelectronics, 2019, 131, 257-266.	5.3	66
11	Uncoupling histogenesis from morphogenesis in the vertebrate embryo by collapse of the transneuronal tube potential. Developmental Dynamics, 1995, 203, 456-467.	0.8	65
12	Polyethylene glycol repairs membrane damage and enhances functional recovery: a tissue engineering approach to spinal cord injury. Neuroscience Bulletin, 2013, 29, 460-466.	1.5	56
13	Anti-Biofouling Strategies for Long-Term Continuous Use of Implantable Biosensors. Chemosensors, 2020, 8, 66.	1.8	56
14	The Morphology of Supragranular Pyramidal Neurons in the Human Insular Cortex: A Quantitative Golgi Study. Cerebral Cortex, 2009, 19, 2131-2144.	1.6	54
15	Mitigation of sensory and motor deficits by acrolein scavenger phenelzine in a rat model of spinal cord contusive injury. Journal of Neurochemistry, 2016, 138, 328-338.	2.1	52
16	Effects of 4-Aminopyridine on Stretched Mammalian Spinal Cord: The Role of Potassium Channels in Axonal Conduction. Journal of Neurophysiology, 2003, 90, 2334-2340.	0.9	51
17	Rapid In Situ Profiling of Lipid C=C Location Isomers in Tissue Using Ambient Mass Spectrometry with Photochemical Reactions. Analytical Chemistry, 2018, 90, 5612-5619.	3.2	50
18	Point-of-Care Tissue Analysis Using Miniature Mass Spectrometer. Analytical Chemistry, 2019, 91, 1157-1163.	3.2	44

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19	Novel Potassium Channel Blocker, 4-AP-3-MeOH, Inhibits Fast Potassium Channels and Restores Axonal Conduction in Injured Guinea Pig Spinal Cord White Matter. <i>Journal of Neurophysiology</i> , 2010, 103, 469-478.	0.9	40
20	Mesenchymal Stem Cell-Derived Exosomes: Hope for Spinal Cord Injury Repair. <i>Stem Cells and Development</i> , 2020, 29, 1467-1478.	1.1	40
21	Endogenous ionic currents and voltages in amphibian embryos. <i>The Journal of Experimental Zoology</i> , 1994, 268, 307-322.	1.4	39
22	Acrolein as a novel therapeutic target for motor and sensory deficits in spinal cord injury. <i>Neural Regeneration Research</i> , 2014, 9, 677.	1.6	39
23	Wearable Glucose Monitoring and Implantable Drug Delivery Systems for Diabetes Management. <i>Advanced Healthcare Materials</i> , 2021, 10, e2100194.	3.9	38
24	Acrolein contributes to $\text{TRPA1}$ up-regulation in peripheral and central sensory hypersensitivity following spinal cord injury. <i>Journal of Neurochemistry</i> , 2015, 135, 987-997.	2.1	37
25	Real-Time Sample Analysis Using a Sampling Probe and Miniature Mass Spectrometer. <i>Analytical Chemistry</i> , 2015, 87, 8867-8873.	3.2	37
26	Structural and biochemical abnormalities in the absence of acute deficits in mild primary blast-induced head trauma. <i>Journal of Neurosurgery</i> , 2016, 124, 675-686.	0.9	36
27	Electrochemical Evaluations of Fractal Microelectrodes for Energy Efficient Neurostimulation. <i>Scientific Reports</i> , 2018, 8, 4375.	1.6	36
28	Acrolein-mediated neuronal cell death and alpha-synuclein aggregation: Implications for Parkinson's disease. <i>Molecular and Cellular Neurosciences</i> , 2018, 88, 70-82.	1.0	35
29	Clioquinol improves motor and non-motor deficits in MPTP-induced monkey model of Parkinson's disease through AKT/mTOR pathway. <i>Aging</i> , 2020, 12, 9515-9533.	1.4	35
30	Differences in postinjury auditory system pathophysiology after mild blast and nonblast acute acoustic trauma. <i>Journal of Neurophysiology</i> , 2017, 118, 782-799.	0.9	34
31	Nonlinear damping for vibration isolation of microsystems using shear thickening fluid. <i>Applied Physics Letters</i> , 2013, 102, .	1.5	33
32	Dimercaprol is an acrolein scavenger that mitigates acrolein-mediated PC12 cells toxicity and reduces acrolein in rat following spinal cord injury. <i>Journal of Neurochemistry</i> , 2017, 141, 708-720.	2.1	30
33	The dynamics of axolemmal disruption in guinea pig spinal cord following compression. <i>Journal of Neurocytology</i> , 2004, 33, 203-211.	1.6	28
34	Potassium channel blockers as an effective treatment to restore impulse conduction in injured axons. <i>Neuroscience Bulletin</i> , 2011, 27, 36-44.	1.5	27
35	Printable Nonenzymatic Glucose Biosensors Using Carbon Nanotube-PtNP Nanocomposites Modified with AuRu for Improved Selectivity. <i>ACS Biomaterials Science and Engineering</i> , 2020, 6, 5315-5325.	2.6	27
36	<i>In Vivo</i> Glutamate Sensing inside the Mouse Brain with Perovskite Nickelate-Nafion Heterostructures. <i>ACS Applied Materials &amp; Interfaces</i> , 2020, 12, 24564-24574.	4.0	27

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37	Acrolein Contributes to the Neuropathic Pain and Neuron Damage after Ischemic Reperfusion Spinal Cord Injury. <i>Neuroscience</i> , 2018, 384, 120-130.	1.1	25
38	Cognition based bTBI mechanistic criteria; a tool for preventive and therapeutic innovations. <i>Scientific Reports</i> , 2018, 8, 10273.	1.6	25
39	Rapid custom prototyping of soft poroelastic biosensor for simultaneous epicardial recording and imaging. <i>Nature Communications</i> , 2021, 12, 3710.	5.8	24
40	Development of microfabricated magnetic actuators for removing cellular occlusion. <i>Journal of Micromechanics and Microengineering</i> , 2011, 21, 054006.	1.5	22
41	Electrical neurostimulation with imbalanced waveform mitigates dissolution of platinum electrodes. <i>Journal of Neural Engineering</i> , 2016, 13, 054001.	1.8	22
42	Simple minimally-invasive automatic antidote delivery device (A2D2) towards closed-loop reversal of opioid overdose. <i>Journal of Controlled Release</i> , 2019, 306, 130-137.	4.8	22
43	Acrolein-mediated alpha-synuclein pathology involvement in the early post-injury pathogenesis of mild blast-induced Parkinsonian neurodegeneration. <i>Molecular and Cellular Neurosciences</i> , 2019, 98, 140-154.	1.0	21
44	Towards smart self-clearing glaucoma drainage device. <i>Microsystems and Nanoengineering</i> , 2018, 4, 35.	3.4	19
45	Systemic Acrolein Elevations in Mice With Experimental Autoimmune Encephalomyelitis and Patients With Multiple Sclerosis. <i>Frontiers in Neurology</i> , 2018, 9, 420.	1.1	19
46	Unilateral microinjection of acrolein into thoracic spinal cord produces acute and chronic injury and functional deficits. <i>Neuroscience</i> , 2016, 326, 84-94.	1.1	18
47	Exogenous Acrolein intensifies sensory hypersensitivity after spinal cord injury in rat. <i>Journal of the Neurological Sciences</i> , 2017, 379, 29-35.	0.3	18
48	Public Regulatory Databases as a Source of Insight for Neuromodulation Devices Stimulation Parameters. <i>Neuromodulation</i> , 2018, 21, 117-125.	0.4	17
49	Zwitterionic Porous Conjugated Polymers as a Versatile Platform for Antibiofouling Implantable Bioelectronics. <i>ACS Applied Polymer Materials</i> , 2020, 2, 528-536.	2.0	17
50	Synergistic bactericidal activity between hyperosmotic stress and membrane-disrupting nanoemulsions. <i>Journal of Medical Microbiology</i> , 2013, 62, 69-77.	0.7	16
51	The Association of Iron and the Pathologies of Parkinson's Diseases in MPTP/MPP+-Induced Neuronal Degeneration in Non-human Primates and in Cell Culture. <i>Frontiers in Aging Neuroscience</i> , 2019, 11, 215.	1.7	16
52	Acrolein scavenger dimercaprol offers neuroprotection in an animal model of Parkinson's disease: implication of acrolein and TRPA1. <i>Translational Neurodegeneration</i> , 2021, 10, 13.	3.6	16
53	Nanomedicine strategies for treatment of secondary spinal cord injury. <i>International Journal of Nanomedicine</i> , 2015, 10, 923.	3.3	15
54	Anti-biofouling implantable catheter using thin-film magnetic microactuators. <i>Sensors and Actuators B: Chemical</i> , 2018, 273, 1694-1704.	4.0	15

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55	Iron overload resulting from the chronic oral administration of ferric citrate induces parkinsonism phenotypes in middle-aged mice. <i>Aging</i> , 2019, 11, 9846-9861.	1.4	15
56	Neuroprotective mechanisms of red clover and soy isoflavones in Parkinson's disease models. <i>Food and Function</i> , 2021, 12, 11987-12007.	2.1	14
57	One-Step Large-Scale Nanotexturing of Nonplanar PTFE Surfaces to Induce Bactericidal and Anti-inflammatory Properties. <i>ACS Applied Materials &amp; Interfaces</i> , 2020, 12, 26893-26904.	4.0	14
58	Deficiency of autism-related <i>Scn2a</i> gene in mice disrupts sleep patterns and circadian rhythms. <i>Neurobiology of Disease</i> , 2022, 168, 105690.	2.1	14
59	Evaluation of magnetic resonance imaging issues for implantable microfabricated magnetic actuators. <i>Biomedical Microdevices</i> , 2014, 16, 153-161.	1.4	12
60	Acrolein-mediated conduction loss is partially restored by K <sup>+</sup> channel blockers. <i>Journal of Neurophysiology</i> , 2016, 115, 701-710.	0.9	12
61	Mapping lipid C=C location isomers in organ tissues by coupling photochemical derivatization and rapid extractive mass spectrometry. <i>International Journal of Mass Spectrometry</i> , 2019, 445, 116206.	0.7	12
62	Coupling the PaternÅ <sup>2</sup> -BÅ <sup>1</sup> / <sub>4</sub> chi (PB) Reaction With Mass Spectrometry to Study Unsaturated Fatty Acids in Mouse Model of Multiple Sclerosis. <i>Frontiers in Chemistry</i> , 2019, 7, 807.	1.8	12
63	Structural disruption of the bloodâ€“brain barrier in repetitive primary blast injury. <i>Fluids and Barriers of the CNS</i> , 2021, 18, 2.	2.4	12
64	Peripheral Neuropathy and Hindlimb Paralysis in a Mouse Model of Adipocyte-Specific Knockout of <i>Lkb1</i> . <i>EBioMedicine</i> , 2017, 24, 127-136.	2.7	11
65	Simple Fabrication of Flexible Biosensor Arrays Using Direct Writing for Multianalyte Measurement from Human Astrocytes. <i>SLAS Technology</i> , 2020, 25, 33-46.	1.0	11
66	Targeted delivery of acrolein scavenger hydralazine in spinal cord injury using folate-linker-drug conjugation. <i>Free Radical Biology and Medicine</i> , 2022, 184, 66-73.	1.3	11
67	Shape Memory Polymer-Based Endovascular Devices: Design Criteria and Future Perspective. <i>Polymers</i> , 2022, 14, 2526.	2.0	11
68	Toward an implantable functional electrical stimulation device to correct strabismus. <i>Journal of AAPOS</i> , 2009, 13, 229-235.e1.	0.2	10
69	Mechanical Evaluation of Unobstructing Magnetic Microactuators for Implantable Ventricular Catheters. <i>Journal of Microelectromechanical Systems</i> , 2014, 23, 795-802.	1.7	10
70	Graphene prevents neurostimulation-induced platinum dissolution in fractal microelectrodes. <i>2D Materials</i> , 2019, 6, 035037.	2.0	10
71	Parallel Evaluation of Two Potassium Channel Blockers in Restoring Conduction in Mechanical Spinal Cord Injury in Rat. <i>Journal of Neurotrauma</i> , 2018, 35, 1057-1068.	1.7	9
72	Effects of Carbon Nanotube Infiltration on a Shape Memory Polymerâ€“Based Device for Brain Aneurysm Therapeutics: Design and Characterization of a Jouleâ€“Heating Triggering Mechanism. <i>Advanced Engineering Materials</i> , 2021, 23, 2100322.	1.6	9

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73	Acute systemic accumulation of acrolein in mice by inhalation at a concentration similar to that in cigarette smoke. <i>Neuroscience Bulletin</i> , 2014, 30, 1017-1024.	1.5	7
74	A model of acute compressive spinal cord injury with a minimally invasive balloon in goats. <i>Journal of the Neurological Sciences</i> , 2014, 337, 97-103.	0.3	7
75	Fabrication and ex vivo evaluation of activated carbon@Pt microparticle based glutamate biosensor. <i>Journal of Electroanalytical Chemistry</i> , 2020, 866, 114136.	1.9	7
76	Longitudinal auditory pathophysiology following mild blast-induced trauma. <i>Journal of Neurophysiology</i> , 2021, 126, 1172-1189.	0.9	7
77	Current advances in neurotrauma research: diagnosis, neuroprotection, and neurorepair. <i>Neural Regeneration Research</i> , 2014, 9, 1093.	1.6	7
78	Piezoresistor-Embedded Multifunctional Magnetic Microactuators for Implantable Self-Clearing Catheter. <i>IEEE Sensors Journal</i> , 2019, 19, 1373-1378.	2.4	6
79	Critical role of mitochondrial aldehyde dehydrogenase 2 in acrolein sequestering in rat spinal cord injury. <i>Neural Regeneration Research</i> , 2022, 17, 1505.	1.6	6
80	High-Throughput Magnetic Actuation Platform for Evaluating the Effect of Mechanical Force on 3D Tumor Microenvironment. <i>Advanced Functional Materials</i> , 2021, 31, .	7.8	5
81	Zwitterionic liquid crystalline polythiophene as an antibiofouling biomaterial. <i>Journal of Materials Chemistry B</i> , 2021, 9, 349-356.	2.9	5
82	Psychosocial impairment following mild blast-induced traumatic brain injury in rats. <i>Behavioural Brain Research</i> , 2021, 412, 113405.	1.2	5
83	Nondermal irritating hyperosmotic nanoemulsions reduce treatment times in a contamination model of wound healing. <i>Wound Repair and Regeneration</i> , 2016, 24, 669-678.	1.5	4
84	Whole body measurements using near-infrared spectroscopy in a rat spinal cord contusion injury model. <i>Journal of Spinal Cord Medicine</i> , 2021, , 1-13.	0.7	4
85	Development of an In Vitro Hemorrhagic Hydrocephalus Model for Functional Evaluation of Magnetic Microactuators Against Shunt Obstructions. <i>World Neurosurgery</i> , 2021, 155, e294-e300.	0.7	4
86	In Vitro Magnetic Techniques for Investigating Cancer Progression. <i>Cancers</i> , 2021, 13, 4440.	1.7	4
87	Potassium channel blockers restore axonal conduction in CNS trauma and disease. <i>Neural Regeneration Research</i> , 2016, 11, 1226.	1.6	4
88	Evidence of acrolein in synovial fluid of dogs with osteoarthritis as a potential inflammatory biomarker. <i>BMC Musculoskeletal Disorders</i> , 2021, 22, 894.	0.8	4
89	Application of magnetically actuated self-clearing catheter for rapid in situ blood clot clearance in hemorrhagic stroke treatment. <i>Nature Communications</i> , 2022, 13, 520.	5.8	4
90	Polyimide-based magnetic microactuators for biofouling removal. , 2016, 2016, 5757-5760.		3

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91	Unobstructing magnetic microactuators for implantable catheters. , 2009, , .		2
92	Low-cost rapid prototyping of liquid crystal polymer based magnetic microactuators for glaucoma drainage devices. , 2016, 2016, 4212-4215.		2
93	Elevated axonal membrane permeability and its correlation with motor deficits in an animal model of multiple sclerosis. Translational Neurodegeneration, 2017, 6, 5.	3.6	2
94	A Photo-Crosslinkable Chitosan Hydrogel for Peripheral Nerve Anastomosis. , 2009, , .		1
95	Contribution of Cytoskeletal Elements to the Mechanical Property of Axons. , 2010, , .		1
96	Ex vivo electrochemical measurement of glutamate release during spinal cord injury. MethodsX, 2019, 6, 1894-1900.	0.7	1
97	Molecular Imaging of Central Nervous System with Multi-modal Nonlinear Optical Microscopy. , 2007, , .		0
98	Modeling Primary Blast Injury in Isolated Spinal Cord White Matter. , 2009, , .		0
99	Tensile Physiology: Measuring Force and Conduction in Peripheral Nerves Undergoing Controlled Stretch. , 2009, , .		0
100	BIOMIMETIC MATERIALS FOR ENGINEERING OF NEURAL TISSUES: CONTROL OF CELL ADHESION AND GUIDING NEURAL CELL OUTGROWTH WITH PEPTIDE-CONJUGATED POLYMER STRUCTURES. , 2010, , 347-372.		0
101	MRI compatibility of microfabricated magnetic actuators for implantable catheters: Mechanical evaluations. , 2010, 2010, 907-10.		0
102	Designing a nerve tissue scaffold of tunable stiffness from natural biomaterials. , 2011, , .		0
103	Determination of Acrolein-Associated T1 and T2 Relaxation Times and Noninvasive Detection Using Nuclear Magnetic Resonance and Magnetic Resonance Spectroscopy. Applied Magnetic Resonance, 2019, 50, 1291-1303.	0.6	0
104	In Vivo Evaluation of Fractal Microelectrodes Towards a More Targeted and Energyâ€Efficient Vagus Nerve Stimulation. FASEB Journal, 2021, 35, .	0.2	0
105	Effects of Carbon Nanotube Infiltration on a Shape Memory Polymerâ€Based Device for Brain Aneurysm Therapeutics: Design and Characterization of a Jouleâ€Heating Triggering Mechanism. Advanced Engineering Materials, 2021, 23, 2170022.	1.6	0
106	Cytocompatibility and Material Properties of Poly-carbonate Urethane/Carbon Nanofiber Composites for Neural Applications. Materials Research Society Symposia Proceedings, 2003, 774, 7301.	0.1	0
107	Cytocompatibility of Carbon Nanofiber Materials for Neural Applications. Materials Research Society Symposia Proceedings, 2003, 774, 7351.	0.1	0