

# Gil U Lee

## List of Publications by Year in descending order

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90  
papers

5,773  
citations

117453

34  
h-index

74018

75  
g-index

93  
all docs

93  
docs citations

93  
times ranked

5515  
citing authors

| #  | ARTICLE  | IF   | CITATIONS |
|----|--|------|-----------|
| 1  | Direct measurement of the forces between complementary strands of DNA. <i>Science</i> , 1994, 266, 771-773.  | 6.0  | 795       |
| 2  | A biosensor based on magnetoresistance technology. <i>Biosensors and Bioelectronics</i> , 1998, 13, 731-739.   | 5.3  | 757       |
| 3  | Sensing Discrete Streptavidin-Biotin Interactions with Atomic Force Microscopy. <i>Langmuir</i> , 1994, 10, 354-357.   | 1.6  | 688       |
| 4  | Covalent attachment of synthetic DNA to self-assembled monolayer films. <i>Nucleic Acids Research</i> , 1996, 24, 3031-3039.   | 6.5  | 304       |
| 5  | Nanometer-Scale Surface Properties of Mixed Phospholipid Monolayers and Bilayers. <i>Langmuir</i> , 1997, 13, 4779-4784.   | 1.6  | 232       |
| 6  | Advances in the characterization of supported lipid films with the atomic force microscope. <i>Biochimica Et Biophysica Acta - Biomembranes</i> , 2000, 1509, 14-41.   | 1.4  | 186       |
| 7  | Biosensor based on force microscope technology. <i>Journal of Vacuum Science &amp; Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena</i> , 1996, 14, 789. | 1.6  | 129       |
| 8  | Atomic Force Microscope Image Contrast Mechanisms on Supported Lipid Bilayers. <i>Biophysical Journal</i> , 2000, 79, 1107-1118.   | 0.2  | 121       |
| 9  | Traveling wave magnetophoresis for high resolution chip based separations. <i>Lab on A Chip</i> , 2007, 7, 1681.   | 3.1  | 116       |
| 10 | Gas-Phase Concentration, Purification, and Identification of Whole Proteins from Complex Mixtures. <i>Journal of the American Chemical Society</i> , 2002, 124, 7353-7362.   | 6.6  | 103       |
| 11 | Characterization of the physical properties of model biomembranes at the nanometer scale with the atomic force microscope. <i>Faraday Discussions</i> , 1999, 111, 79-94.  | 1.6  | 102       |
| 12 | Scanning tunnelling microscopy of Z-DNA. <i>Nature</i> , 1989, 339, 484-486.   | 13.7 | 100       |
| 13 | A high-sensitivity micromachined biosensor. <i>Proceedings of the IEEE</i> , 1997, 85, 672-680.  | 16.4 | 100       |
| 14 | Scanning tunneling microscopy of nucleic acids. <i>Science</i> , 1989, 244, 475-477.   | 6.0  | 92        |
| 15 | Resistive Pulse Sensing of Analyte-Induced Multicomponent Rod Aggregation Using Tunable Pores. <i>Small</i> , 2012, 8, 2436-2444.  | 5.2  | 84        |
| 16 | Structure, force, and energy of a double-stranded DNA oligonucleotide under tensile loads. <i>European Biophysics Journal</i> , 1999, 28, 415-426.   | 1.2  | 78        |
| 17 | Advances in magnetic tweezers for single molecule and cell biophysics. <i>Integrative Biology (United Tj ETQq1 1 0.784314 rgBT /Overlo</i>   | 0.6  | 78        |
| 18 | Synthesis and Characterization of Paramagnetic Microparticles through Emulsion-Templated Free Radical Polymerization. <i>Langmuir</i> , 2006, 22, 2516-2522.   | 1.6  | 75        |

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|----|--|------|-----------|
| 19 | Topography and Nanomechanics of Live Neuronal Growth Cones Analyzed by Atomic Force Microscopy. <i>Biophysical Journal</i> , 2009, 96, 5060-5072.  | 0.2  | 74        |
| 20 | Implementation of Force Differentiation in the Immunoassay. <i>Analytical Biochemistry</i> , 2000, 287, 261-271.   | 1.1  | 61        |
| 21 | Scanning probe microscopy. <i>Current Opinion in Chemical Biology</i> , 1997, 1, 370-377.  | 2.8  | 55        |
| 22 | Bioâ€Nanoâ€Magnetic Materials for Localized Mechanochemical Stimulation of Cell Growth and Death. <i>Advanced Materials</i> , 2016, 28, 5672-5680.   | 11.1 | 53        |
| 23 | Design and calibration of a scanning force microscope for friction, adhesion, and contact potential studies. <i>Review of Scientific Instruments</i> , 1995, 66, 4566-4574.                  | 0.6  | 51        |
| 24 | Nanometer Scale Surface Properties of Supported Lipid Bilayers Measured with Hydrophobic and Hydrophilic Atomic Force Microscope Probesâ€. <i>Langmuir</i> , 2003, 19, 1899-1907.            | 1.6  | 51        |
| 25 | Mutation of the Membrane-Associated M1 Protease APM1 Results in Distinct Embryonic and Seedling Developmental Defects in <i>Arabidopsis</i> . <i>Plant Cell</i> , 2009, 21, 1693-1721.       | 3.1  | 51        |
| 26 | Specific Adsorption of Histidine-Tagged Proteins on Silica Surfaces Modified with Ni <sup>2+</sup> /NTA-Derivatized Poly(ethylene glycol). <i>Langmuir</i> , 2007, 23, 6281-6288.            | 1.6  | 50        |
| 27 | Magneticâ€Plasmonic Dual Modulated FePtâ€Au Ternary Heterostructured Nanorods as a Promising Nanoâ€Bioprobe. <i>Advanced Materials</i> , 2012, 24, 2485-2490.                                | 11.1 | 47        |
| 28 | High-resolution analysis of neuronal growth cone morphology by comparative atomic force and optical microscopy. <i>Journal of Neurobiology</i> , 2006, 66, 1529-1543.                        | 3.7  | 46        |
| 29 | Development and characterization of surface chemistries for microfabricated biosensors. <i>Journal of Vacuum Science and Technology A: Vacuum, Surfaces and Films</i> , 1999, 17, 2623-2628. | 0.9  | 42        |
| 30 | Rapid detection of dengue virus in serum using magnetic separation and fluorescence detection. <i>Analyst</i> , 2008, 133, 233-240.  | 1.7  | 42        |
| 31 | Low Piconewton Towing of CNS Axons against Diffusing and Surface-Bound Repellents Requires the Inhibition of Motor Protein-Associated Pathways. <i>Scientific Reports</i> , 2014, 4, 7128.   | 1.6  | 42        |
| 32 | Synthesis and characterization of a novel polyimide-based second-order nonlinear optical material. <i>Polymer</i> , 2000, 41, 5237-5245.   | 1.8  | 40        |
| 33 | Single-Molecule Force Spectroscopy of the <i>Aplysia</i> Cell Adhesion Molecule Reveals Two Homophilic Bonds. <i>Biophysical Journal</i> , 2012, 103, 649-657.                               | 0.2  | 39        |
| 34 | Micromagnet arrays enable precise manipulation of individual biological analyteâ€superparamagnetic bead complexes for separation and sensing. <i>Lab on A Chip</i> , 2016, 16, 3645-3663.    | 3.1  | 38        |
| 35 | M13 Bacteriophageâ€Activated Superparamagnetic Beads for Affinity Separation. <i>Small</i> , 2012, 8, 2403-2411.   | 5.2  | 33        |
| 36 | Resistive pulse sensing of magnetic beads and supraparticle structures using tunable pores. <i>Biomicrofluidics</i> , 2012, 6, 014103.   | 1.2  | 32        |

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|----|---|-----|-----------|
| 37 | Advances in affinity ligand-functionalized nanomaterials for biomagnetic separation. <i>Biotechnology and Bioengineering</i> , 2016, 113, 11-25.  | 1.7 | 32        |
| 38 | Transport and functional behaviour of poly(ethylene glycol)-modified nanoporous alumina membranes. <i>Nanotechnology</i> , 2005, 16, 1335-1340.   | 1.3 | 31        |
| 39 | Magnetic Tweezers Measurement of the Bond Lifetime~Force Behavior of the IgG~Protein A Specific Molecular Interaction. <i>Journal of the American Chemical Society</i> , 2007, 129, 6640-6646.          | 6.6 | 31        |
| 40 | Sequence specific electronic conduction through polyion-stabilized double-stranded DNA in nanoscale break junctions. <i>Nanotechnology</i> , 2007, 18, 195202.  | 1.3 | 29        |
| 41 | Creation of recombinant antigen-binding molecules derived from hybridomas secreting specific antibodies. <i>Nature Protocols</i> , 2013, 8, 1125-1148.  | 5.5 | 29        |
| 42 | Chemically-Specific Probes for the Atomic Force Microscope. <i>Israel Journal of Chemistry</i> , 1996, 36, 81-87.   | 1.0 | 28        |
| 43 | Dissociation of Multiple Protein Ion Charge States Following a Single Gas-Phase Purification and Concentration Procedure. <i>Analytical Chemistry</i> , 2002, 74, 4653-4661.                            | 3.2 | 28        |
| 44 | Nanoliter-Scale Reactor Arrays for Biochemical Sensing. <i>Langmuir</i> , 2006, 22, 6723-6726.  | 1.6 | 28        |
| 45 | Atomic Force Microscopy with Patterned Cantilevers and Tip Arrays: Force Measurements with Chemical Arrays. <i>Langmuir</i> , 2000, 16, 4009-4015.  | 1.6 | 27        |
| 46 | Mechanochemical Stimulation of MCF7 Cells with Rod-Shaped Fe-Au Janus Particles Induces Cell Death Through Paradoxical Hyperactivation of ERK. <i>Advanced Healthcare Materials</i> , 2015, 4, 395-404. | 3.9 | 26        |
| 47 | Magnetic Manipulation and Optical Imaging of an Active Plasmonic Single-Particle Fe-Au Nanorod. <i>Langmuir</i> , 2011, 27, 15292-15298.  | 1.6 | 25        |
| 48 | Microtechnologies for studying the role of mechanics in axon growth and guidance. <i>Frontiers in Cellular Neuroscience</i> , 2015, 9, 282.   | 1.8 | 25        |
| 49 | A microfluidic dual gradient generator for conducting cell-based drug combination assays. <i>Integrative Biology (United Kingdom)</i> , 2016, 8, 39-49.   | 0.6 | 25        |
| 50 | Effect of Mechanical Contact on the Molecular Recognition of Biomolecules. <i>Langmuir</i> , 1999, 15, 238-243.   | 1.6 | 21        |
| 51 | Flow enhanced non-linear magnetophoretic separation of beads based on magnetic susceptibility. <i>Lab on A Chip</i> , 2013, 13, 4400.   | 3.1 | 21        |
| 52 | Synthesis of Superparamagnetic Particles with Tunable Morphologies: The Role of Nanoparticle-Nanoparticle Interactions. <i>Langmuir</i> , 2013, 29, 2546-2553.  | 1.6 | 21        |
| 53 | Isolation of Bowman-Birk-Inhibitor from soybean extracts using novel peptide probes and high gradient magnetic separation. <i>Food Chemistry</i> , 2012, 134, 1831-1838.                                | 4.2 | 20        |
| 54 | Rapid, highly sensitive detection of herpes simplex virus-1 using multiple antigenic peptide-coated superparamagnetic beads. <i>Analyst, The</i> , 2014, 139, 6126-6134.                                | 1.7 | 19        |

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|----|---|-----|-----------|
| 55 | Charge and topography patterned lithium niobate provides physical cues to fluidically isolated cortical axons. <i>Applied Physics Letters</i> , 2017, 110, .                                    | 1.5 | 19        |
| 56 | Properties of Mixed Lipid Monolayers Assembled on Hydrophobic Surfaces through Vesicle Adsorption. <i>Langmuir</i> , 2006, 22, 5057-5063.   | 1.6 | 17        |
| 57 | Immunoassays in Nanoliter Volume Reactors Using Fluorescent Particle Diffusometry. <i>Langmuir</i> , 2008, 24, 2947-2952.   | 1.6 | 17        |
| 58 | Rapid Growth Cone Uptake and Dynein-Mediated Axonal Retrograde Transport of Negatively Charged Nanoparticles in Neurons Is Dependent on Size and Cell Type. <i>Small</i> , 2019, 15, e1803758.  | 5.2 | 17        |
| 59 | Neuron Subpopulations with Different Elongation Rates and DCC Dynamics Exhibit Distinct Responses to Isolated Netrin-1 Treatment. <i>ACS Chemical Neuroscience</i> , 2015, 6, 1578-1590.        | 1.7 | 16        |
| 60 | Microfabricated tip arrays for improving force measurements. <i>Applied Physics Letters</i> , 1999, 74, 1489-1491.  | 1.5 | 15        |
| 61 | Flow-Enhanced Nonlinear Magnetophoresis for High-Resolution Bioseparation. <i>Langmuir</i> , 2011, 27, 6496-6503.   | 1.6 | 15        |
| 62 | Characterization of carboxylate nanoparticle adhesion with the fungal pathogen <i>Candida albicans</i> . <i>Nanoscale</i> , 2017, 9, 15911-15922.   | 2.8 | 15        |
| 63 | Neuronal Cell Bodies Remotely Regulate Axonal Growth Response to Localized Netrin-1 Treatment via Second Messenger and DCC Dynamics. <i>Frontiers in Cellular Neuroscience</i> , 2016, 10, 298. | 1.8 | 15        |
| 64 | The application of magnetic force differentiation for the measurement of the affinity of peptide libraries. <i>Journal of Magnetism and Magnetic Materials</i> , 2005, 293, 382-388.            | 1.0 | 14        |
| 65 | Mesoporous Membrane Device for Asymmetric Biosensing. <i>Langmuir</i> , 2005, 21, 1153-1157.  | 1.6 | 13        |
| 66 | Templated synthesis of gold-iron alloy nanoparticles using pulsed laser deposition. <i>Nanotechnology</i> , 2006, 17, 5131-5135.  | 1.3 | 13        |
| 67 | Highly Ordered Fe-Au Heterostructured Nanorod Arrays and Their Exceptional Near-Infrared Plasmonic Signature. <i>Langmuir</i> , 2012, 28, 17101-17107.  | 1.6 | 13        |
| 68 | Magnetic Tweezers-Based Force Clamp Reveals Mechanically Distinct apCAM Domain Interactions. <i>Biophysical Journal</i> , 2012, 103, 1120-1129.   | 0.2 | 13        |
| 69 | Micromagnet arrays for on-chip focusing, switching, and separation of superparamagnetic beads and single cells. <i>Lab on A Chip</i> , 2015, 15, 3370-3379.                                     | 3.1 | 13        |
| 70 | Stable and reproducible electronic conduction through DNA molecular junctions. <i>Applied Physics Letters</i> , 2009, 95, 083106.   | 1.5 | 12        |
| 71 | Probing the Soybean Bowman-Birk Inhibitor Using Recombinant Antibody Fragments. <i>Journal of Agricultural and Food Chemistry</i> , 2012, 60, 6164-6172.  | 2.4 | 11        |
| 72 | Optical Diffusometry Techniques and Applications in Biological Agent Detection. <i>Journal of Fluids Engineering, Transactions of the ASME</i> , 2008, 130, .                                   | 0.8 | 10        |

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|----|---|------|-----------|
| 73 | Direct identification of the herpes simplex virus <i>UL27</i> gene through single particle manipulation and optical detection using a micromagnetic array. <i>Nanoscale</i> , 2020, 12, 3482-3490.  | 2.8  | 9         |
| 74 | Scanning tunneling microscopy and atomic force microscopy visualization of the components of the skeletal muscle glycogenolytic complex. <i>Journal of Vacuum Science &amp; Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena</i> , 1991, 9, 1248. | 1.6  | 8         |
| 75 | Design of micromagnetic arrays for on-chip separation of superparamagnetic bead aggregates and detection of a model protein and double-stranded DNA analytes. <i>Scientific Reports</i> , 2021, 11, 5302.   | 1.6  | 8         |
| 76 | Helical period of Z-DNA. <i>Nature</i> , 1990, 346, 706-706.  | 13.7 | 6         |
| 77 | Influence of viral transport media and freeze-thaw cycling on the sensitivity of qRT-PCR detection of SARS-CoV-2 nucleic acids. <i>Nanoscale</i> , 2021, 13, 15659-15667.   | 2.8  | 6         |
| 78 | Observation of phosphorylase kinase and phosphorylase b at solid-liquid interfaces by scanning tunneling microscopy. <i>Journal of Vacuum Science &amp; Technology an Official Journal of the American Vacuum Society B, Microelectronics Processing and Phenomena</i> , 1991, 9, 1236.                     | 1.6  | 5         |
| 79 | Physical properties of porous titania films composed of nanoparticle aggregates. <i>Journal of Materials Research</i> , 2006, 21, 1738-1746.  | 1.2  | 4         |
| 80 | Analysis of Cell-Cell Contact Mediated by Ig Superfamily Cell Adhesion Molecules. <i>Current Protocols in Cell Biology</i> , 2013, 61, 9.5.1-9.5.85.  | 2.3  | 4         |
| 81 | Rapid and sensitive detection of cardiac troponin I using a force enhanced immunoassay with nanoporous membrane. <i>Nanoscale</i> , 2020, 12, 12568-12577.  | 2.8  | 4         |
| 82 | Structure and dynamics of the fibronectin-III domains of <i>Aplysia californica</i> cell adhesion molecules. <i>Physical Chemistry Chemical Physics</i> , 2015, 17, 9634-9643.  | 1.3  | 2         |
| 83 | Measurement of the Physical and Chemical Properties of Hybrid Lipid Membranes with the Atomic Force Microscope. <i>AIP Conference Proceedings</i> , 2003, , .   | 0.3  | 1         |
| 84 | Mesoporous membrane technologies for the collection of airborne biological pathogens. , 2004, , .   |      | 1         |
| 85 | In vitro study of the interaction of heregulin-functionalized magnetic-optical nanorods with MCF7 and MDA-MB-231 cells. <i>Faraday Discussions</i> , 2014, 175, 189-201.  | 1.6  | 1         |
| 86 | Optical detection of the magnetophoretic transport of superparamagnetic beads on a micromagnetic array. <i>Scientific Reports</i> , 2020, 10, 12876.  | 1.6  | 1         |
| 87 | Parallel Magnetic Tweezers for Pulling CNS Axons Towards a Source of Repellent Factors. <i>Biophysical Journal</i> , 2014, 106, 811a.   | 0.2  | 0         |
| 88 | Neurochemistry: Rapid Growth Cone Uptake and Dynein-Mediated Axonal Retrograde Transport of Negatively Charged Nanoparticles in Neurons Is Dependent on Size and Cell Type (Small 2/2019). <i>Small</i> , 2019, 15, 1970012.  | 5.2  | 0         |
| 89 | Measuring forces between biological macromolecules with the Atomic Force Microscope: characterization and applications. <i>Proceedings Annual Meeting Electron Microscopy Society of America</i> , 1995, 53, 718-719.   | 0.0  | 0         |
| 90 | Characterization of Intermolecular and Intramolecular Interactions with the Atomic Force Microscope. , 2014, , 445-456.   |      | 0         |