# Darrell Velegol

List of Publications by Year
in descending order

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|---|---|---|---|
| 91<br>papers | 10,470<br>citations | 87888<br>38<br>h-index | 48315<br>88<br>g-index |
| 93<br>all docs | 93<br>docs citations | 93<br>times ranked | 15716<br>citing authors |

| # | Article | IF | Citations |
|---|---|---|---|
| 1 | Understanding biophysicochemical interactions at the nanoâ€“bio interface. Nature Materials, 2009, 8, 543-557. | 27.5 | 6,046 |
| 2 | Chemotaxis of Nonbiological Colloidal Rods. Physical Review Letters, 2007, 99, 178103. | 7.8 | 315 |
| 3 | Boundaries can steer active Janus spheres. Nature Communications, 2015, 6, 8999. | 12.8 | 290 |
| 4 | Origins of concentration gradients for diffusiophoresis. Soft Matter, 2016, 12, 4686-4703. | 2.7 | 241 |
| 5 | Understanding the Efficiency of Autonomous Nano- and Microscale Motors. Journal of the American Chemical Society, 2013, 135, 10557-10565. | 13.7 | 230 |
| 6 | Biomimetic behavior of synthetic particles: from microscopic randomness to macroscopic control. Physical Chemistry Chemical Physics, 2010, 12, 1423-1435. | 2.8 | 173 |
| 7 | Enhanced Transport into and out of Dead-End Pores. ACS Nano, 2015, 9, 746-753. | 14.6 | 153 |
| 8 | Positive and negative chemotaxis of enzyme-coated liposome motors. Nature Nanotechnology, 2019, 14, 1129-1134. | 31.5 | 152 |
| 9 | Catalytic Micropumps:Â Microscopic Convective Fluid Flow and Pattern Formation. Journal of the American Chemical Society, 2005, 127, 17150-17151. | 13.7 | 150 |
| 10 | Chemo and phototactic nano/microbots. Faraday Discussions, 2009, 143, 15. | 3.2 | 142 |
| 11 | Cell Traction Forces on Soft Biomaterials. I. Microrheology of Type I Collagen Gels. Biophysical Journal, 2001, 81, 1786-1792. | 0.5 | 131 |
| 12 | Shape-directed rotation of homogeneous micromotors via catalytic self-electrophoresis. Nature Communications, 2019, 10, 495. | 12.8 | 108 |
| 13 | Nanoscale Functionalization and Site-Specific Assembly of Colloids by Particle Lithography. Langmuir, 2005, 21, 4813-4815. | 3.5 | 96 |
| 14 | AFM Imaging Artifacts due to Bacterial Cell Height and AFM Tip Geometry. Langmuir, 2003, 19, 851-857. | 3.5 | 94 |
| 15 | Self-Generated Diffusioosmotic Flows from Calcium Carbonate Micropumps. Langmuir, 2012, 28, 15491-15497. | 3.5 | 88 |
| 16 | Analytical Model for the Effect of Surface Charge Nonuniformity on Colloidal Interactions. Langmuir, 2001, 17, 7687-7693. | 3.5 | 86 |
| 17 | Measurements of Charge Nonuniformity on Polystyrene Latex Particles. Langmuir, 2002, 18, 3454-3458. | 3.5 | 74 |
| 18 | Van der Waals Dispersion Forces between Dielectric Nanoclusters. Langmuir, 2007, 23, 1735-1740. | 3.5 | 73 |

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|---|---|---|---|
| 19 | Oriented Adhesion of Escherichia coli to Polystyrene Particles. Applied and Environmental Microbiology, 2003, 69, 6515-6519. | 3.1 | 69 |
| 20 | Altering Surface Charge Nonuniformity on Individual Colloidal Particles. Langmuir, 2004, 20, 3090-3095. | 3.5 | 66 |
| 21 | Site-Specific Functionalization on Individual Colloids:â€‰ Size Control, Stability, and Multilayers. Langmuir, 2007, 23, 9069-9075. | 3.5 | 66 |
| 22 | Importance of Molecular Details in Predicting Bacterial Adhesion to Hydrophobic Surfaces. Langmuir, 2004, 20, 10625-10629. | 3.5 | 65 |
| 23 | Transport of Rodlike Colloids through Packed Beds. Environmental Science & Technology, 2006, 40, 6336-6340. | 10.0 | 64 |
| 24 | Magnetic Enhancement of Phototaxing Catalytic Motors. Langmuir, 2010, 26, 6308-6313. | 3.5 | 60 |
| 25 | Antimicrobial Sand via Adsorption of Cationic Moringa oleifera Protein. Langmuir, 2012, 28, 2262-2268. | 3.5 | 58 |
| 26 | van der Waals forces between nanoclusters: Importance of many-body effects. Journal of Chemical Physics, 2006, 124, 074504. | 3.0 | 57 |
| 27 | Catalytically Driven Colloidal Patterning and Transport. Journal of Physical Chemistry B, 2006, 110, 24513-24521. | 2.6 | 56 |
| 28 | Motility of Enzyme-Powered Vesicles. Nano Letters, 2019, 19, 6019-6026. | 9.1 | 52 |
| 29 | Multi-ion diffusiophoresis. Journal of Colloid and Interface Science, 2014, 424, 120-123. | 9.4 | 51 |
| 30 | A Theory of Enzyme Chemotaxis: From Experiments to Modeling. Biochemistry, 2018, 57, 6256-6263. | 2.5 | 51 |
| 31 | Nanoscale van der Waals interactions. Molecular Simulation, 2009, 35, 849-866. | 2.0 | 49 |
| 32 | Fabrication of Colloidal Doublets by a Salting Outâ^'Quenchingâ^'Fusing Technique. Langmuir, 2006, 22, 9135-9141. | 3.5 | 46 |
| 33 | Electrophoresis of Spheroidal Particles Having a Random Distribution of Zeta Potential. Langmuir, 2000, 16, 10315-10321. | 3.5 | 44 |
| 34 | Determining the Forces between Polystyrene Latex Spheres Using Differential Electrophoresis. Langmuir, 1996, 12, 4103-4110. | 3.5 | 43 |
| 35 | Localized Electroosmosis (LEO) Induced by Spherical Colloidal Motors. Langmuir, 2014, 30, 2600-2607. | 3.5 | 41 |
| 36 | Designing van der Waals Forces between Nanocolloids. Nano Letters, 2005, 5, 169-173. | 9.1 | 40 |

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|---|---|---|---|
| 37 | E. coli adhesion to silica in the presence of humic acid. Colloids and Surfaces B: Biointerfaces, 2004, 39, 45-51. | 5.0 | 39 |
| 38 | Reactive micromixing eliminates fouling and concentration polarization in reverse osmosis membranes. Journal of Membrane Science, 2017, 542, 8-17. | 8.2 | 39 |
| 39 | Electrophoresis of Spherical Particles with a Random Distribution of Zeta Potential or Surface Charge. Journal of Colloid and Interface Science, 2000, 230, 114-121. | 9.4 | 37 |
| 40 | Probing the Structure of Colloidal Doublets by Electrophoretic Rotation. Langmuir, 1996, 12, 675-685. | 3.5 | 34 |
| 41 | In-solution assembly of colloidal water. Soft Matter, 2009, 5, 1263-1268. | 2.7 | 33 |
| 42 | Diffusiophoresis contributes significantly to colloidal fouling in low salinity reverse osmosis systems. Journal of Membrane Science, 2015, 479, 67-76. | 8.2 | 33 |
| 43 | Particle Deposition on Microporous Membranes Can Be Enhanced or Reduced by Salt Gradients. Langmuir, 2014, 30, 793-799. | 3.5 | 32 |
| 44 | Particle Zeta Potentials Remain Finite in Saturated Salt Solutions. Langmuir, 2016, 32, 11837-11844. | 3.5 | 31 |
| 45 | Assembling colloidal devices by controlling interparticle forces. Journal of Nanophotonics, 2007, 1, 012502. | 1.0 | 29 |
| 46 | Scalable Manufacturing of Plasmonic Nanodisk Dimers and Cusp Nanostructures Using Salting-out Quenching Method and Colloidal Lithography. ACS Nano, 2011, 5, 5838-5847. | 14.6 | 28 |
| 47 | Chemotaxis of Molecular Dyes in Polymer Gradients in Solution. Journal of the American Chemical Society, 2017, 139, 15588-15591. | 13.7 | 28 |
| 48 | Polloidal Chains from Self-Assembly of Flattened Particles. Langmuir, 2013, 29, 10340-10345. | 3.5 | 26 |
| 49 | Fabrication of stable anisotropic microcapsules. Soft Matter, 2009, 5, 827. | 2.7 | 25 |
| 50 | Controlled Flats on Spherical Polymer Colloids. Langmuir, 2010, 26, 7644-7649. | 3.5 | 24 |
| 51 | Collagen Gel Anisotropy Measured by 2-D Laser Trap Microrheometry. Annals of Biomedical Engineering, 2007, 35, 1231-1246. | 2.5 | 21 |
| 52 | Modulation of Spatiotemporal Particle Patterning in Evaporating Droplets: Applications to Diagnostics and Materials Science. ACS Applied Materials & Interfaces, 2017, 9, 43352-43362. | 8.0 | 21 |
| 53 | Measuring Colloidal Forces Using Differential Electrophoresis. Langmuir, 2000, 16, 3372-3384. | 3.5 | 20 |
| 54 | Laser trap studies of end-on E. coli adhesion to glass. Colloids and Surfaces B: Biointerfaces, 2006, 50, 66-71. | 5.0 | 18 |

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|---|---|---|---|
| 55 | Simple Fabrication of Metallic Colloidal Doublets Having Electrical Connectivity. Langmuir, 2008, 24, 4335-4339. | 3.5 | 18 |
| 56 | Maskless Fabrication of Nanowells Using Chemically Reactive Colloids. Nano Letters, 2011, 11, 672-676. | 9.1 | 18 |
| 57 | Force Measurements between Weakly Attractive Polystyrene Particles. Langmuir, 2002, 18, 7328-7333. | 3.5 | 17 |
| 58 | Sediments of soft spheres arranged by effectiveÂdensity. Nature Materials, 2011, 10, 716-721. | 27.5 | 17 |
| 59 | 7 Log Virus Removal in a Simple Functionalized Sand Filter. Environmental Science & Technology, 2019, 53, 12706-12714. | 10.0 | 17 |
| 60 | Localized Functionalization of Individual Colloidal Carriers for Cell Targeting and Imaging. Biomacromolecules, 2007, 8, 1958-1965. | 5.4 | 15 |
| 61 | Self-Assembly of Doublets from Flattened Polymer Colloids. Langmuir, 2012, 28, 4086-4094. | 3.5 | 15 |
| 62 | Nonuniform Crowding Enhances Transport. ACS Nano, 2019, 13, 8946-8956. | 14.6 | 15 |
| 63 | Prolonging Density Gradient Stability. Langmuir, 2010, 26, 4725-4731. | 3.5 | 14 |
| 64 | Force Measurements between Colloidal Particles of Identical Zeta Potentials Using Differential Electrophoresis. Langmuir, 2003, 19, 4090-4095. | 3.5 | 13 |
| 65 | Three-body interactions involving clusters and films. Physical Review B, 2003, 68, . | 3.2 | 13 |
| 66 | Self-Generated Electrokinetic Fluid Flows during Pseudomorphic Mineral Replacement Reactions. Langmuir, 2016, 32, 5233-5240. | 3.5 | 13 |
| 67 | Charge nonuniformity light scattering. Colloids and Surfaces A: Physicochemical and Engineering Aspects, 2005, 267, 79-85. | 4.7 | 12 |
| 68 | Simple fabrication of snowman-like colloids. Journal of Colloid and Interface Science, 2012, 371, 28-33. | 9.4 | 12 |
| 69 | Moringa oleifera Seed Protein Adsorption to Silica: Effects of Water Hardness, Fractionation, and Fatty Acid Extraction. Langmuir, 2018, 34, 4852-4860. | 3.5 | 12 |
| 70 | Electrophoresis of randomly charged particles. Electrophoresis, 2002, 23, 2023. | 2.4 | 11 |
| 71 | Force Measurements between Sub-100 nm Colloidal Particles. Langmuir, 2007, 23, 1275-1280. | 3.5 | 10 |
| 72 | Rayleighâ˜BÃ©nard Instability in Sedimentation. Industrial & Engineering Chemistry Research, 2009, 48, 2414-2421. | 3.7 | 10 |

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|---|---|---|---|
| 73 | Localized Quorum Sensing in Vibrio fischeri. Colloids and Surfaces B: Biointerfaces, 2008, 62, 180-187. | 5.0 | 9 |
| 74 | Design and Characterization of Randomly Speckled Spheres. Langmuir, 2008, 24, 7618-7622. | 3.5 | 9 |
| 75 | Chemical Game Theory. Industrial & Engineering Chemistry Research, 2018, 57, 13593-13607. | 3.7 | 9 |
| 76 | Differences between Chemisorbed and Physisorbed Biomolecules on Particle Deposition to Hydrophobic Surfacesâ€. Environmental Science & Technology, 2005, 39, 6371-6377. | 10.0 | 7 |
| 77 | Fully retarded van der Waals interaction between dielectric nanoclusters. Journal of Chemical Physics, 2006, 125, 174303. | 3.0 | 7 |
| 78 | Van der Waals energy of a 1-dimensional lattice. Molecular Physics, 2008, 106, 1587-1596. | 1.7 | 7 |
| 79 | Limitations of Differential Electrophoresis for Measuring Colloidal Forces:â€‰ A Brownian Dynamics Study. Langmuir, 2005, 21, 10074-10081. | 3.5 | 5 |
| 80 | Evaluating Randomness of Charge Distribution on Colloidal Particles Using Stationary Electrophoresis Angles. Langmuir, 2003, 19, 4592-4596. | 3.5 | 4 |
| 81 | Functional colloidal trimers by quenched electrostatic assembly. Physical Chemistry Chemical Physics, 2010, 12, 11930. | 2.8 | 4 |
| 82 | Digitally Coupled Learning and Innovation Processes. Industrial & Engineering Chemistry Research, 2019, 58, 22445-22455. | 3.7 | 4 |
| 83 | Measuring Particle Diameter and Particleâ^'Particle Gap with Nanometer Precision Using an Optical Microscope. Industrial & Engineering Chemistry Research, 2001, 40, 3042-3047. | 3.7 | 3 |
| 84 | Reducing Surface Charge Nonuniformity on Individual Particles through Annealing. Industrial & Engineering Chemistry Research, 2004, 43, 3478-3483. | 3.7 | 3 |
| 85 | Microfactories for colloidal assemblies. AICHE Journal, 2010, 56, 564-569. | 3.6 | 2 |
| 86 | Modeling the formation of 2,3,7,8-tetrachlorodibenzo-p-dioxin in the historical manufacture of 2,4,5-trichlorophenol. Environmental Forensics, 2017, 18, 307-317. | 2.6 | 2 |
| 87 | Gambling on Innovation. Industrial & Engineering Chemistry Research, 2021, 60, 7689-7699. | 3.7 | 2 |
| 88 | Orientation of irreversible adhesion of spherical particles on prolate spheroidal collectors. Journal of Colloid and Interface Science, 2006, 299, 696-702. | 9.4 | 1 |
| 89 | Brownian sampling in an unbounded space. Journal of Colloid and Interface Science, 2004, 274, 334-336. | 9.4 | 0 |
| 90 | The Design and Control of Catalytic Motors: Manipulating Colloids and Fluids with Self-Generated Forces. Materials Research Society Symposia Proceedings, 2006, 944, 1. | 0.1 | 0 |

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|---|---|---|---|
| 91 | Sustainable energy corps: Building a global collaboration to accelerate transition to a low carbon world. Chemical Engineering Science: X, 2021, 10, 100099. | 1.5 | 0 |