

Michael Engel

List of Publications by Citations

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68

papers

5,152

citations

31

h-index

71

g-index

74

ext. papers

5,949

ext. citations

11.9

avg, IF

6.19

L-index

| # | Paper | IF | Citations |
|----|---|------|-----------|
| 68 | Self-Assembly of Colloidal Nanocrystals: From Intricate Structures to Functional Materials. <i>Chemical Reviews</i> , 2016 , 116, 11220-89 | 68.1 | 1067 |
| 67 | Predictive self-assembly of polyhedra into complex structures. <i>Science</i> , 2012 , 337, 453-7 | 33.3 | 746 |
| 66 | Disordered, quasicrystalline and crystalline phases of densely packed tetrahedra. <i>Nature</i> , 2009 , 462, 773-7 | 56.4 | 327 |
| 65 | Competition of shape and interaction patchiness for self-assembling nanoplates. <i>Nature Chemistry</i> , 2013 , 5, 466-73 | 17.6 | 253 |
| 64 | Hard-disk equation of state: first-order liquid-hexatic transition in two dimensions with three simulation methods. <i>Physical Review E</i> , 2013 , 87, 042134 | 2.4 | 162 |
| 63 | Understanding shape entropy through local dense packing. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2014 , 111, E4812-21 | 11.5 | 159 |
| 62 | Crystalline assemblies and densest packings of a family of truncated tetrahedra and the role of directional entropic forces. <i>ACS Nano</i> , 2012 , 6, 609-14 | 16.7 | 155 |
| 61 | Entropically patchy particles: engineering valence through shape entropy. <i>ACS Nano</i> , 2014 , 8, 931-40 | 16.7 | 143 |
| 60 | Self-assembly of monatomic complex crystals and quasicrystals with a double-well interaction potential. <i>Physical Review Letters</i> , 2007 , 98, 225505 | 7.4 | 140 |
| 59 | Emergent collective phenomena in a mixture of hard shapes through active rotation. <i>Physical Review Letters</i> , 2014 , 112, 075701 | 7.4 | 132 |
| 58 | Clathrate colloidal crystals. <i>Science</i> , 2017 , 355, 931-935 | 33.3 | 121 |
| 57 | Shape-dependent ordering of gold nanocrystals into large-scale superlattices. <i>Nature Communications</i> , 2017 , 8, 14038 | 17.4 | 114 |
| 56 | Computational self-assembly of a one-component icosahedral quasicrystal. <i>Nature Materials</i> , 2015 , 14, 109-16 | 27 | 110 |
| 55 | Quasicrystalline nanocrystal superlattice with partial matching rules. <i>Nature Materials</i> , 2017 , 16, 214-219 | 27 | 96 |
| 54 | Shape alloys of nanorods and nanospheres from self-assembly. <i>Nano Letters</i> , 2013 , 13, 4980-8 | 11.5 | 87 |
| 53 | A directional entropic force approach to assemble anisotropic nanoparticles into superlattices. <i>Angewandte Chemie - International Edition</i> , 2013 , 52, 13980-4 | 16.4 | 80 |
| 52 | Dense Crystalline Dimer Packings of Regular Tetrahedra. <i>Discrete and Computational Geometry</i> , 2010 , 44, 253-280 | 0.6 | 77 |

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| 51 | Rotating robots move collectively and self-organize. <i>Nature Communications</i> , 2018 , 9, 931 | 17.4 | 69 |
| 50 | Phase diagram of hard tetrahedra. <i>Journal of Chemical Physics</i> , 2011 , 135, 194101 | 3.9 | 67 |
| 49 | Magic number colloidal clusters as minimum free energy structures. <i>Nature Communications</i> , 2018 , 9, 5259 | 17.4 | 67 |
| 48 | Controlled self-assembly of periodic and aperiodic cluster crystals. <i>Physical Review Letters</i> , 2014 , 113, 098304 | 7.4 | 65 |
| 47 | Band gap formation and Anderson localization in disordered photonic materials with structural correlations. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2017 , 114, 9570-9574 | 11.5 | 61 |
| 46 | Shape control and compartmentalization in active colloidal cells. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2015 , 112, E4642-50 | 11.5 | 57 |
| 45 | Role of Short-Range Order and Hyperuniformity in the Formation of Band Gaps in Disordered Photonic Materials. <i>Physical Review Letters</i> , 2016 , 117, 053902 | 7.4 | 56 |
| 44 | Massively parallel Monte Carlo for many-particle simulations on GPUs. <i>Journal of Computational Physics</i> , 2013 , 254, 27-38 | 4.1 | 48 |
| 43 | Degenerate quasicrystal of hard triangular bipyramids. <i>Physical Review Letters</i> , 2011 , 107, 215702 | 7.4 | 42 |
| 42 | Entropic colloidal crystallization pathways via fluid-fluid transitions and multidimensional prenucleation motifs. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2019 , 116, 14843-14851 | 11.5 | 38 |
| 41 | Shape and Symmetry Determine Two-Dimensional Melting Transitions of Hard Regular Polygons. <i>Physical Review X</i> , 2017 , 7, | 9.1 | 38 |
| 40 | Dynamics of particle flips in two-dimensional quasicrystals. <i>Physical Review B</i> , 2010 , 82, | 3.3 | 33 |
| 39 | Complexity in Surfaces of Densest Packings for Families of Polyhedra. <i>Physical Review X</i> , 2014 , 4, | 9.1 | 32 |
| 38 | Structural Color of Colloidal Clusters as a Tool to Investigate Structure and Dynamics. <i>Advanced Functional Materials</i> , 2020 , 30, 1907730 | 15.6 | 32 |
| 37 | Metastable orientational order of colloidal discoids. <i>Nature Communications</i> , 2015 , 6, 8507 | 17.4 | 28 |
| 36 | Complex Crystals from Size-Disperse Spheres. <i>Physical Review Letters</i> , 2019 , 122, 128005 | 7.4 | 27 |
| 35 | Achieving Highly Durable Random Alloy Nanocatalysts through Intermetallic Cores. <i>ACS Nano</i> , 2019 , 13, 4008-4017 | 16.7 | 26 |
| 34 | Unusual multiscale mechanics of biomimetic nanoparticle hydrogels. <i>Nature Communications</i> , 2018 , 9, 181 | 17.4 | 24 |

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| 33 | Symmetry considerations for the targeted assembly of entropically stabilized colloidal crystals via Voronoi particles. <i>ACS Nano</i> , 2015 , 9, 2336-44 | 16.7 | 22 |
| 32 | Free Energy Landscape of Colloidal Clusters in Spherical Confinement. <i>ACS Nano</i> , 2019 , 13, 9005-9015 | 16.7 | 21 |
| 31 | Structural complexity in monodisperse systems of isotropic particles. <i>Zeitschrift für Kristallographie</i> , 2008 , 223, | | 21 |
| 30 | Effect of lattice mismatch and shell thickness on strain in core@shell nanocrystals. <i>Nanoscale Advances</i> , 2020 , 2, 1105-1114 | 5.1 | 20 |
| 29 | Packing and self-assembly of truncated triangular bipyramids. <i>Physical Review E</i> , 2013 , 88, 012127 | 2.4 | 20 |
| 28 | Confirmation of the random tiling hypothesis for a decagonal quasicrystal. <i>Physical Review Letters</i> , 2012 , 109, 225502 | 7.4 | 19 |
| 27 | Non-close-packed three-dimensional quasicrystals. <i>Journal of Physics Condensed Matter</i> , 2017 , 29, 234005.8 | 5.8 | 18 |
| 26 | Imaging the kinetics of anisotropic dissolution of bimetallic core-shell nanocubes using graphene liquid cells. <i>Nature Communications</i> , 2020 , 11, 3041 | 17.4 | 18 |
| 25 | Virial Coefficients and Equations of State for Hard Polyhedron Fluids. <i>Langmuir</i> , 2017 , 33, 11788-11796 | 4 | 16 |
| 24 | Intermediate crystalline structures of colloids in shape space. <i>Soft Matter</i> , 2018 , 14, 8692-8697 | 3.6 | 15 |
| 23 | Symmetries in hard polygon systems determine plastic colloidal crystal mesophases in two dimensions. <i>Soft Matter</i> , 2019 , 15, 2571-2579 | 3.6 | 13 |
| 22 | A unified projection formalism for the AlPdMn quasi-crystal approximants and their metadislocations. <i>Philosophical Magazine</i> , 2005 , 85, 2227-2247 | 1.6 | 13 |
| 21 | Efficient equilibration of hard spheres with Newtonian event chains. <i>Journal of Chemical Physics</i> , 2019 , 150, 174108 | 3.9 | 12 |
| 20 | Controlling Chirality of Entropic Crystals. <i>Physical Review Letters</i> , 2015 , 115, 158303 | 7.4 | 11 |
| 19 | Low-temperature structure of $\sqrt{2}$ -Al-Pd-Mn optimized by ab initio methods. <i>Physical Review B</i> , 2011 , 84, | 3.3 | 11 |
| 18 | Functional materials and devices by self-assembly. <i>MRS Bulletin</i> , 2020 , 45, 799-806 | 3.2 | 11 |
| 17 | Tiling models for metadislocations in AlPdMn approximants. <i>Philosophical Magazine</i> , 2006 , 86, 979-984 | 1.6 | 10 |
| 16 | Particle Shape Control via Etching of Core@Shell Nanocrystals. <i>ACS Nano</i> , 2018 , 12, 9186-9195 | 16.7 | 9 |

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| 15 | Structural variations in β -type AlPd(Mn, Fe) complex metallic alloy phases. <i>Philosophical Magazine</i> , 2008 , 88, 507-521 | 1.6 | 9 |
| 14 | Entropic stabilization of tunable planar modulated superstructures. <i>Physical Review Letters</i> , 2011 , 106, 095504 | 7.4 | 8 |
| 13 | Structure factors of harmonic and anharmonic Fibonacci chains by molecular dynamics simulations. <i>Physical Review B</i> , 2007 , 75, | 3.3 | 8 |
| 12 | Spontaneous Crystallization in Systems of Binary Hard Sphere Colloids. <i>Physical Review Letters</i> , 2020 , 124, 218003 | 7.4 | 7 |
| 11 | Phason dynamics in one-dimensional lattices. <i>Physical Review B</i> , 2010 , 81, | 3.3 | 7 |
| 10 | Stability of the decagonal quasicrystal in the Lennard-Jones-Coulomb system. <i>Philosophical Magazine</i> , 2008 , 88, 1959-1965 | 1.6 | 7 |
| 9 | A Directional Entropic Force Approach to Assemble Anisotropic Nanoparticles into Superlattices. <i>Angewandte Chemie</i> , 2013 , 125, 14230-14234 | 3.6 | 6 |
| 8 | Surfactants and rotelles in active chiral fluids. <i>Science Advances</i> , 2021 , 7, | 14.3 | 4 |
| 7 | Moving beyond the constraints of chemistry via crystal structure discovery with isotropic multiwell pair potentials. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021 , 118, | 11.5 | 4 |
| 6 | Entropic formation of a thermodynamically stable colloidal quasicrystal with negligible phason strain. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021 , 118, | 11.5 | 3 |
| 5 | Computational self-assembly of a one-component icosahedral quasicrystal | | 1 |
| 4 | Newtonian Event-Chain Monte Carlo and Collision Prediction with Polyhedral Particles. <i>Journal of Chemical Theory and Computation</i> , 2021 , 17, 4686-4696 | 6.4 | 1 |
| 3 | Macromolecular Ligand Engineering for Programmable Nanoprism Assembly. <i>Journal of the American Chemical Society</i> , 2021 , 143, 16163-16172 | 16.4 | 1 |
| 2 | Efficient solution of particle shape functions for the analysis of powder total scattering data.. <i>Journal of Applied Crystallography</i> , 2022 , 55, 329-339 | 3.8 | 0 |
| 1 | Computational self-assembly of complex crystals. <i>Acta Crystallographica Section A: Foundations and Advances</i> , 2016 , 72, s94-s94 | 1.7 | |