# Christoper J Barrett

List of Publications by Year
in descending order



| | | | |
|---|---|---|---|
| 120 papers | 13,148 citations | 44069 48 h-index | 23533 111 g-index |
| 125 all docs | 125 docs citations | 125 times ranked | 12434 citing authors |

| # | Article | IF | Citations |
|---|---|---|---|
| 1 | Production of dimethylfuran for liquid fuels from biomass-derived carbohydrates. Nature, 2007, 447, 982-985. | 27.8 | 2,011 |
| 2 | Production of Liquid Alkanes by Aqueous-Phase Processing of Biomass-Derived Carbohydrates. Science, 2005, 308, 1446-1450. | 12.6 | 1,502 |
| 3 | Photomobile Polymer Materials: Towards Lightâ€Driven Plastic Motors. Angewandte Chemie - International Edition, 2008, 47, 4986-4988. | 13.8 | 919 |
| 4 | Fabrication of Microporous Thin Films from Polyelectrolyte Multilayers. Langmuir, 2000, 16, 5017-5023. | 3.5 | 641 |
| 5 | Photo-mechanical effects in azobenzene-containing soft materials. Soft Matter, 2007, 3, 1249. | 2.7 | 512 |
| 6 | Novel photo-switching using azobenzene functional materials. Journal of Photochemistry and Photobiology A: Chemistry, 2006, 182, 250-261. | 3.9 | 485 |
| 7 | Mechanism of Optically Inscribed High-Efficiency Diffraction Gratings in Azo Polymer Films. The Journal of Physical Chemistry, 1996, 100, 8836-8842. | 2.9 | 478 |
| 8 | Controlling Motion at the Nanoscale: Rise of the Molecular Machines. ACS Nano, 2015, 9, 7746-7768. | 14.6 | 385 |
| 9 | Photomobile polymer materialsâ€"various three-dimensional movements. Journal of Materials Chemistry, 2009, 19, 60-62. | 6.7 | 369 |
| 10 | Azobenzene photomechanics: prospects and potential applications. Polymer Bulletin, 2012, 69, 967-1006. | 3.3 | 339 |
| 11 | Model of laser-driven mass transport in thin films of dye-functionalized polymers. Journal of Chemical Physics, 1998, 109, 1505-1516. | 3.0 | 336 |
| 12 | Shaping Crystals with Light: Crystal-to-Crystal Isomerization and Photomechanical Effect in Fluorinated Azobenzenes. Journal of the American Chemical Society, 2013, 135, 12556-12559. | 13.7 | 268 |
| 13 | pH-Responsive Properties of Multilayered Poly(l-lysine)/Hyaluronic Acid Surfaces. Biomacromolecules, 2003, 4, 1773-1783. | 5.4 | 235 |
| 14 | All-optical patterning of azo polymer films. Current Opinion in Solid State and Materials Science, 2001, 5, 487-494. | 11.5 | 213 |
| 15 | Acidâ"Base Equilibria of Weak Polyelectrolytes in Multilayer Thin Films. Langmuir, 2003, 19, 3297-3303. | 3.5 | 208 |
| 16 | Light-Induced Reversible Volume Changes in Thin Films of Azo Polymers:â€‰ The Photomechanical Effect. Macromolecules, 2005, 38, 10566-10570. | 4.8 | 199 |
| 17 | Using light to control physical properties of polymers and surfaces with azobenzene chromophores. Pure and Applied Chemistry, 2004, 76, 1445-1465. | 1.9 | 177 |
| 18 | Fast, Reversible, and General Photomechanical Motion in Single Crystals of Various Azo Compounds Using Visible Light. Advanced Materials, 2013, 25, 1796-1800. | 21.0 | 155 |

| # | Article | IF | Citations |
|---|---|---|---|
| 19 | Recent twists in photoactuation and photoalignment control. Journal of Materials Chemistry C, 2014, 2, 7155-7162. | 5.5 | 142 |
| 20 | Photo-mechanical azobenzene cocrystals and in situ X-ray diffraction monitoring of their optically-induced crystal-to-crystal isomerisation. Chemical Science, 2014, 5, 3158-3164. | 7.4 | 139 |
| 21 | pH-Dependent Loading and Release Behavior of Small Hydrophilic Molecules in Weak Polyelectrolyte Multilayer Films. Macromolecules, 2004, 37, 5375-5384. | 4.8 | 137 |
| 22 | Halogen-Bonded Cocrystals as Optical Materials: Next-Generation Control over Lightâ€“Matter Interactions. Crystal Growth and Design, 2018, 18, 1245-1259. | 3.0 | 115 |
| 23 | Molecular Addressing? Selective Photoinduced Cooperative Motion of Polar Ester Groups in Copolymers Containing Azobenzene Groups. Macromolecules, 1998, 31, 1155-1161. | 4.8 | 111 |
| 24 | Effects of Charge Density and Counterions on the Assembly of Polyelectrolyte Multilayers. Journal of Physical Chemistry B, 2003, 107, 2525-2530. | 2.6 | 111 |
| 25 | Photoâ€control of biological systems with azobenzene polymers. Journal of Polymer Science Part A, 2013, 51, 3058-3070. | 2.3 | 109 |
| 26 | Photomechanical Surface Patterning in Azo-Polymer Materials. Macromolecules, 2006, 39, 9320-9326. | 4.8 | 107 |
| 27 | Structural and Mechanical Properties of Polyelectrolyte Multilayer Films Studied by AFM. Macromolecules, 2003, 36, 8819-8824. | 4.8 | 100 |
| 28 | Photomechanical Effects in Azo-Polymers Studied by Neutron Reflectometry. Macromolecules, 2006, 39, 9311-9319. | 4.8 | 92 |
| 29 | Surface-Plasmon-Mediated Hydrogenation of Carbonyls Catalyzed by Silver Nanocubes under Visible Light. ACS Catalysis, 2017, 7, 6128-6133. | 11.2 | 90 |
| 30 | Temperature modeling of laser-irradiated azo-polymer thin films. Journal of Chemical Physics, 2004, 120, 1089-1096. | 3.0 | 89 |
| 31 | Supramolecular hierarchy among halogen and hydrogen bond donors in light-induced surface patterning. Journal of Materials Chemistry C, 2015, 3, 759-768. | 5.5 | 87 |
| 32 | Simultaneous Analysis of Optical and Mechanical Properties of Cross-Linked Azobenzene-Containing Liquid-Crystalline Polymer Films. ACS Applied Materials & Interfaces, 2011, 3, 4190-4196. | 8.0 | 86 |
| 33 | NMR Studies of the Effect of Adsorbed Water on Polyelectrolyte Multilayer Films in the Solid State. Macromolecules, 2003, 36, 3616-3625. | 4.8 | 81 |
| 34 | Swelling Dynamics of Multilayer Films of Weak Polyelectrolytes. Chemistry of Materials, 2004, 16, 2734-2739. | 6.7 | 73 |
| 35 | Swelling Behavior of Hyaluronic Acid/Polyallylamine Hydrochloride Multilayer Films. Biomacromolecules, 2005, 6, 1419-1428. | 5.4 | 72 |
| 36 | NMR Studies of PAH/PSS Polyelectrolyte Multilayers Adsorbed onto Silica. Macromolecules, 2004, 37, 4830-4838. | 4.8 | 71 |

| # | Article | IF | Citations |
|---|---|---|---|
| 37 | Shapeâ€Shifting Azo Dye Polymers: Towards Sunlightâ€Driven Molecular Devices. Macromolecular Rapid Communications, 2018, 39, 1700253. | 3.9 | 70 |
| 38 | Azocarbazole Polymethacrylates as Single-Component Electrooptic Materials. Macromolecules, 1998, 31, 4845-4851. | 4.8 | 69 |
| 39 | Photoreversible Soft Azo Dye Materials: Toward Optical Control of Bioâ€Interfaces. Advanced Optical Materials, 2019, 7, 1900091. | 7.3 | 63 |
| 40 | Anomalous Adsorption of Polyelectrolyte Layers. Macromolecules, 2001, 34, 3384-3388. | 4.8 | 62 |
| 41 | Spacer-Free Ionic Dyeâ^'Polyelectrolyte Complexes: Influence of Molecular Structure on Liquid Crystal Order and Photoinduced Motion. Chemistry of Materials, 2009, 21, 3216-3227. | 6.7 | 62 |
| 42 | Preparation and Characterization of Polyelectrolyte-Coated Gold Nanoparticles. Langmuir, 2008, 24, 2532-2538. | 3.5 | 58 |
| 43 | Simple Spacer-Free Dye-Polyelectrolyte Ionic Complex: Side-Chain Liquid Crystal Order with High and Stable Photoinduced Birefringence. Chemistry of Materials, 2008, 20, 29-31. | 6.7 | 58 |
| 44 | Are Two Azo Groups Better than One? Investigating the Photoresponse of Polymer-Bisazobenzene Complexes. Chemistry of Materials, 2014, 26, 5089-5096. | 6.7 | 57 |
| 45 | Fast Magic-Angle Spinning and Double-Quantum1H Solid-State NMR Spectroscopy of Polyelectrolyte Multilayers. Advanced Materials, 2000, 12, 1934-1938. | 21.0 | 55 |
| 46 | Water Distribution in Multilayers of Weak Polyelectrolytes. Langmuir, 2006, 22, 5137-5143. | 3.5 | 50 |
| 47 | Photoreversible Surfaces to Regulate Cell Adhesion. Biomacromolecules, 2012, 13, 2958-2963. | 5.4 | 50 |
| 48 | Scanning wave photopolymerization enables dye-free alignment patterning of liquid crystals. Science Advances, 2017, 3, e1701610. | 10.3 | 50 |
| 49 | Photoinduced multi-directional deformation of azobenzene molecular crystals. Journal of Materials Chemistry C, 2019, 7, 503-508. | 5.5 | 48 |
| 50 | 13C Solid-State NMR Study of Polyelectrolyte Multilayers. Macromolecules, 2003, 36, 1876-1881. | 4.8 | 46 |
| 51 | Azobenzene Photoisomerization under High External Pressures: Testing the Strength of a Light-Activated Molecular Muscle. Journal of Physical Chemistry B, 2012, 116, 9860-9865. | 2.6 | 45 |
| 52 | Nanoindentation studies to separate thermal and optical effects in photo-softening of azo polymers. Journal of Materials Chemistry C, 2015, 3, 995-1003. | 5.5 | 44 |
| 53 | Assessment of combined movements of the lumbar spine in asymptomatic and low back pain subjects using a three-dimensional electromagnetic tracking system. Manual Therapy, 1999, 4, 94-99. | 1.6 | 43 |
| 54 | Controlling Dichroism of Molecular Crystals by Cocrystallization. Crystal Growth and Design, 2016, 16, 541-545. | 3.0 | 41 |

| # | Article | IF | Citations |
|---|---|---|---|
| 55 | Photo-induced motion of azo dyes in organized media: from single and liquid crystals, to MOFs and machines. CrystEngComm, 2016, 18, 7204-7211. | 2.6 | 40 |
| 56 | Photomechanical properties of azobenzene liquid-crystalline elastomers. Liquid Crystals, 2009, 36, 1289-1293. | 2.2 | 35 |
| 57 | Azoâ‹¯phenyl stacking: a persistent self-assembly motif guides the assembly of fluorinated cis-azobenzenes into photo-mechanical needle crystals. Chemical Communications, 2016, 52, 2103-2106. | 4.1 | 35 |
| 58 | Nanoindentation study of light-induced softening of supramolecular and covalently functionalized azo polymers. Journal of Materials Chemistry C, 2013, 1, 2806. | 5.5 | 34 |
| 59 | Layers and Multilayers of Self-Assembled Polymers: Tunable Engineered Extracellular Matrix Coatings for Neural Cell Growth. Langmuir, 2018, 34, 8709-8730. | 3.5 | 33 |
| 60 | Ion distribution in multilayers of weak polyelectrolytes: A neutron reflectometry study. Journal of Chemical Physics, 2008, 129, 084901. | 3.0 | 32 |
| 61 | Effect of head group size on the photoswitching applications of azobenzene Disperse Red 1 analogues. Journal of Materials Chemistry C, 2014, 2, 7505-7512. | 5.5 | 32 |
| 62 | Rapid Mechanically Controlled Rewiring of Neuronal Circuits. Journal of Neuroscience, 2016, 36, 979-987. | 3.6 | 30 |
| 63 | Assembly and dichroism of a four-component halogen-bonded metalâ€“organic cocrystal salt solvate involving dicyanoaurate(I) acceptors. Faraday Discussions, 2017, 203, 441-457. | 3.2 | 29 |
| 64 | Confinement of surface patterning in azo-polymer thin films. Journal of Chemical Physics, 2007, 126, 094908. | 3.0 | 27 |
| 65 | Fluorinated azobenzenes with highly strained geometries for halogen bond-driven self-assembly in the solid state. CrystEngComm, 2015, 17, 73-80. | 2.6 | 27 |
| 66 | Variable temperature, relative humidity (0%â€“100%), and liquid neutron reflectometry sample cell suitable for polymeric and biomimetic materials. Review of Scientific Instruments, 2005, 76, 065101. | 1.3 | 26 |
| 67 | Thermo-, photo-, and mechano-responsive liquid crystal networks enable tunable photonic crystals. Soft Matter, 2017, 13, 7486-7491. | 2.7 | 26 |
| 68 | Stable sensor layers self-assembled onto surfaces using azobenzene-containing polyelectrolytes. Analyst, The, 2001, 126, 1861-1865. | 3.5 | 25 |
| 69 | Controlling the physicochemical properties of weak polyelectrolyte multilayer films through acid/base equilibria. Pure and Applied Chemistry, 2004, 76, 1387-1398. | 1.9 | 24 |
| 70 | Release kinetics of fluphenazine from biodegradable microspheres. Journal of Microencapsulation, 1992, 9, 415-423. | 2.8 | 20 |
| 71 | Stabilization of Neodymium Oxide Nanoparticles via Soft Adsorption of Charged Polymers. ACS Applied Materials & Interfaces, 2011, 3, 3357-3365. | 8.0 | 20 |
| 72 | Photo-tuning of highly selective wetting in inverse opals. Soft Matter, 2014, 10, 1325-1328. | 2.7 | 20 |

| # | Article | IF | Citations |
|---|---|---|---|
| 73 | Stable photo-reversible surface energy switching with azobenzenepolyelectrolyte multilayers. Journal of Materials Chemistry, 2010, 20, 244-247. | 6.7 | 19 |
| 74 | High-throughput cellular screening of engineered ECM based on combinatorial polyelectrolyte multilayer films. Biomaterials, 2012, 33, 5841-5847. | 11.4 | 18 |
| 75 | Halogen bonding to the azulene Ï€-system: cocrystal design of pleochroism. Chemical Communications, 2020, 56, 15145-15148. | 4.1 | 18 |
| 76 | Solution Properties of Self-Assembled Amphiphilic Copolymers Determined by Isomerization Spectroscopy. Journal of Physical Chemistry B, 2002, 106, 8499-8503. | 2.6 | 17 |
| 77 | The Orange Side of Disperse Red 1: Humidityâ€Driven Color Switching in Supramolecular Azoâ€Polymer Materials Based on Reversible Dye Aggregation. Macromolecular Rapid Communications, 2017, 38, 1600582. | 3.9 | 17 |
| 78 | Cold photo-carving of halogen-bonded co-crystals of a dye and a volatile co-former using visible light. Nature Chemistry, 2022, 14, 574-581. | 13.6 | 17 |
| 79 | Fabrication of Two-Dimensional Gradient Layer-by-Layer Films for Combinatorial Biosurface Studies. Macromolecules, 2012, 45, 5704-5711. | 4.8 | 16 |
| 80 | Single-step creation of polarization gratings by scanning wave photopolymerization with unpolarized light. Journal of the Optical Society of America B: Optical Physics, 2019, 36, D112. | 2.1 | 16 |
| 81 | Photo-induced structural modification of silk gels containing azobenzene side groups. Soft Matter, 2017, 13, 2903-2906. | 2.7 | 14 |
| 82 | Unpolarized light-induced alignment of azobenzene by scanning wave photopolymerization. Polymer Journal, 2018, 50, 753-759. | 2.7 | 14 |
| 83 | Direct fabrication of a q-plate array by scanning wave photopolymerization. Journal of the Optical Society of America B: Optical Physics, 2019, 36, D47. | 2.1 | 14 |
| 84 | Self-assembly of microscopic tablets within polymeric thin films: a possible pathway towards new hybrid materials. RSC Advances, 2015, 5, 4780-4787. | 3.6 | 13 |
| 85 | Non-covalent formulation of active principles with dendrimers: Current state-of-the-art and prospects for further development. Journal of Controlled Release, 2017, 264, 288-305. | 9.9 | 13 |
| 86 | The intrinsic rate response of the isolated right atrium of the rat, Rattus norvegicus. Comparative Biochemistry and Physiology Part A, Molecular & Integrative Physiology, 1998, 120, 391-397. | 1.8 | 11 |
| 87 | Electrospinning of photo-responsive Azo-Cellulose: towards smart fibrous materials. Cellulose, 2019, 26, 6903-6915. | 4.9 | 11 |
| 88 | Novel Azobenzene-Functionalized Polyelectrolytes of Different Substituted Head Groups 3: Control of Properties of Self-Assembled Multilayer Thin Films. Journal of Macromolecular Science - Pure and Applied Chemistry, 2010, 47, 571-579. | 2.2 | 10 |
| 89 | High levels of molecular orientation of surface azo chromophores can be optically induced even in a wet biological environment. Physical Chemistry Chemical Physics, 2013, 15, 19985. | 2.8 | 10 |
| 90 | Planar Multilayer Assemblies Containing Block Copolymer Aggregates. Langmuir, 2014, 30, 891-899. | 3.5 | 10 |

| # | Article | IF | Citations |
|---|---|---|---|
| 91 | Temperature-controlled neutron reflectometry sample cell suitable for study of photoactive thin films. Review of Scientific Instruments, 2006, 77, 045106. | 1.3 | 9 |
| 92 | Chapter 17. Azobenzene Polymers as Photomechanical and Multifunctional Smart Materials. , 2007, , 424-446. | | 9 |
| 93 | Control of DNA incorporation into nanoparticles with poly(<scp>L</scp>-lysine) multilayers. Canadian Journal of Chemistry, 2008, 86, 1085-1094. | 1.1 | 8 |
| 94 | Exploring interhemispheric collaboration in older compared to younger adults. Brain and Cognition, 2010, 72, 218-227. | 1.8 | 8 |
| 95 | Computer-aided combined movement examination of the lumbar spine and manual therapy implications: Case report. Manual Therapy, 2016, 21, 297-302. | 1.6 | 8 |
| 96 | Diet as a mechanism of coexistence between intertidal fish species of the U.K.. Hydrobiologia, 2016, 768, 125-135. | 2.0 | 8 |
| 97 | Novel Azobenzene-Functionalized Polyelectrolytes of Different Substituted Head Groups 1: Synthesis, Characterization and Absorption Spectroscopy Studies. Journal of Macromolecular Science - Pure and Applied Chemistry, 2009, 47, 106-118. | 2.2 | 7 |
| 98 | Novel Azobenzene-Functionalized Polyelectrolytes of Different Substituted Head Groups 2: Control of Surface Wetting in Self-Assembled Multilayer Films. Journal of Macromolecular Science - Pure and Applied Chemistry, 2010, 47, 534-544. | 2.2 | 7 |
| 99 | Double-charge model for classical force-field simulations. Physical Review B, 2015, 91, . | 3.2 | 7 |
| 100 | Tunable Engineered Extracellular Matrix Materials: Polyelectrolyte Multilayers Promote Improved Neural Cell Growth and Survival. Macromolecular Bioscience, 2019, 19, 1900036. | 4.1 | 7 |
| 101 | Effect of surface treatment on molecular alignment behavior by scanning wave photopolymerization. Applied Physics Express, 2019, 12, 041004. | 2.4 | 7 |
| 102 | In-Situ Ellipsometric Study of the Optical Properties of LTL-Doped Thin Film Sensors for Copper(II) Ion Detection. Coatings, 2020, 10, 423. | 2.6 | 7 |
| 103 | Theory and experiment of chain length effects on the adsorption of polyelectrolytes onto spherical particles: the long and the short of it. Physical Chemistry Chemical Physics, 2021, 23, 300-310. | 2.8 | 7 |
| 104 | Photoresponsive Behavior of Laminated Films Composed of a Flexible Plastic Sheet and a Crosslinked Azobenzene Liquid-Crystalline Polymer Layer with Different Initial Alignment of Mesogens. Molecular Crystals and Liquid Crystals, 2009, 498, 65-73. | 0.9 | 6 |
| 105 | The Mechanical Performance of a Biomimetic Nanointerface Made of Multilayered Polyelectrolytes. European Journal of Inorganic Chemistry, 2012, 2012, 5380-5389. | 2.0 | 6 |
| 106 | Amorphous Azobenzene Polymers for Light-Induced Surface Patterning. , 0, , 145-175. | | 5 |
| 107 | Photomechanical effect of azobenzene thin polymer films measured with an AFM cantilever based sensor. , 2010, , . | | 3 |
| 108 | Modular assembly of azo photo-switches using click chemistry allows for predictable photo-behaviour. Journal of Photochemistry and Photobiology A: Chemistry, 2014, 294, 62-67. | 3.9 | 3 |

| # | Article | IF | Citations |
|---|---|---|---|
| 109 | Reversing adhesion with light: a general method for functionalized bead release from cells. Biomaterials Science, 2016, 4, 1193-1196. | 5.4 | 3 |
| 110 | Electrospun Azoâ€Cellulose Fabric: A Smart Polysaccharidic Photoâ€Actuator. Macromolecular Rapid Communications, 2022, 43, e2200063. | 3.9 | 3 |
| 111 | Controlled disassembly of azobenzene cellulose-based thin films using visible light. Materials Advances, 2022, 3, 6222-6230. | 5.4 | 3 |
| 112 | After 200 Years: The Structure of Bleach and Characterization of Hypohalite Ions by Singleâ€Crystal Xâ€Ray Diffraction**. Angewandte Chemie - International Edition, 2021, 60, 24400-24405. | 13.8 | 2 |
| 113 | Wetting in color: from photonic fingerprinting of liquids to optical control of liquid percolation. Proceedings of SPIE, 2013, , . | 0.8 | 1 |
| 114 | Crystal structure of 2-oxopyrrolidin-3-yl 4-(2-phenyldiazen-1-yl)benzoate. Acta Crystallographica Section E: Crystallographic Communications, 2018, 74, 458-460. | 0.5 | 1 |
| 115 | Thin films of light-responsive polymers for sensing and surface patterning. , 2003, , . | | 0 |
| 116 | Photo-Mechanical Azo Polymers for Light-Powered Actuation and Artificial Muscles. , 2012, , 107-151. | | 0 |
| 117 | Crystal structure of octane-1,8-diaminium 4,4â€²-(diazene-1,2-diyl)dibenzoate monohydrate. Acta Crystallographica Section E: Crystallographic Communications, 2018, 74, 724-727. | 0.5 | 0 |
| 118 | After 200 Years: The Structure of Bleach and Characterization of Hypohalite Ions by Singleâ€Crystal Xâ€Ray Diffraction**. Angewandte Chemie, 0, , . | 2.0 | 0 |
| 119 | Innentitelbild: After 200 Years: The Structure of Bleach and Characterization of Hypohalite Ions by Singleâ€Crystal Xâ€Ray Diffraction (Angew. Chem. 46/2021). Angewandte Chemie, 2021, 133, 24538-24538. | 2.0 | 0 |
| 120 | Crystal structures of the solvent-free and ethanol disolvate forms of 4,4â€²-(diazenediyl)bis(2,3,5,6-tetrafluorobenzoic acid) exemplifying self-stabilized azobenzene cis-configurations. Acta Crystallographica Section E: Crystallographic Communications, 2018, 74, 1486-1490. | 0.5 | 0 |