Lars Borchardt

List of Publications by Year
in descending order

125 papers	8,243 citations	43973 48 h-index	49773 87 g-index
133 all docs	133 docs citations	133 times ranked	9427 citing authors

#	Article	IF	Citations
1	Direct prediction of the desalination performance of porous carbon electrodes for capacitive deionization. Energy and Environmental Science, 2013, 6, 3700.	15.6	461
2	High-Rate Electrochemical Capacitors Based on Ordered Mesoporous Silicon Carbide-Derived Carbon. ACS Nano, 2010, 4, 1337-1344.	7.3	447
3	Carbon Materials for Lithium Sulfur Batteriesâ€"Ten Critical Questions. Chemistry - A European Journal, 2016, 22, 7324-7351.	1.7	353
4	Sulfurâ€Infiltrated Microâ€•and Mesoporous Silicon Carbideâ€Derived Carbon Cathode for Highâ€Performance Lithium Sulfur Batteries. Advanced Materials, 2013, 25, 4573-4579.	11.1	296
5	Hierarchical Microâ€•and Mesoporous Carbideâ€Derived Carbon as a Highâ€Performance Electrode Material in Supercapacitors. Small, 2011, 7, 1108-1117.	5.2	283
6	Tailoring porosity in carbon materials for supercapacitor applications. Materials Horizons, 2014, 1, 157-168.	6.4	278
7	Bimetallic Aerogels: Highâ€Performance Electrocatalysts for the Oxygen Reduction Reaction. Angewandte Chemie - International Edition, 2013, 52, 9849-9852.	7.2	246
8	Fungi-based porous carbons for CO2 adsorption and separation. Journal of Materials Chemistry, 2012, 22, 13911.	6.7	204
9	Toward a molecular design of porous carbon materials. Materials Today, 2017, 20, 592-610.	8.3	202
10	Highly porous nitrogen-doped polyimine-based carbons with adjustable microstructures for CO2 capture. Journal of Materials Chemistry A, 2013, 1, 10951.	5.2	189
11	Highâ€Performance Electrocatalysis on Palladium Aerogels. Angewandte Chemie - International Edition, 2012, 51, 5743-5747.	7.2	181
12	Imine-Linked Polymer-Derived Nitrogen-Doped Microporous Carbons with Excellent CO₂ Capture Properties. ACS Applied Materials & Interfaces, 2013, 5, 3160-3167.	4.0	158
13	Mechanochemical Friedelâ€"Crafts Alkylationâ€"A Sustainable Pathway Towards Porous Organic Polymers. Angewandte Chemie - International Edition, 2017, 56, 6859-6863.	7.2	150
14	Multimetallic Aerogels by Template-Free Self-Assembly of Au, Ag, Pt, and Pd Nanoparticles. Chemistry of Materials, 2014, 26, 1074-1083.	3.2	148
15	A cubic ordered, mesoporous carbide-derived carbon for gas and energy storage applications. Carbon, 2010, 48, 3987-3992.	5.4	140
16	High capacity micro-mesoporous carbonâ€"sulfur nanocomposite cathodes with enhanced cycling stability prepared by a solvent-free procedure. Journal of Materials Chemistry A, 2013, 1, 9225.	5.2	138
17	Carbideâ€Derived Carbon Monoliths with Hierarchical Pore Architectures. Angewandte Chemie - International Edition, 2012, 51, 7577-7580.	7.2	131
18	Controlling the Growth of Palladium Aerogels with High-Performance toward Bioelectrocatalytic Oxidation of Glucose. Journal of the American Chemical Society, 2014, 136, 2727-2730.	6.6	124

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19	Twin Polymerization at Spherical Hard Templates: An Approach to Sizeâ€Adjustable Carbon Hollow Spheres with Microâ€•or Mesoporous Shells. Angewandte Chemie - International Edition, 2013, 52, 6088-6091.	7.2	123
20	Ordered mesoporous carbide derived carbons for high pressure gas storage. Carbon, 2010, 48, 1707-1717.	5.4	115
21	3D Assembly of Semiconductor and Metal Nanocrystals: Hybrid CdTe/Au Structures with Controlled Content. Journal of the American Chemical Society, 2011, 133, 13413-13420.	6.6	112
22	Solventâ€Free Mechanochemical Synthesis of Nitrogenâ€Doped Nanoporous Carbon for Electrochemical Energy Storage. ChemSusChem, 2017, 10, 2416-2424.	3.6	109
23	The mechanochemical synthesis of polymers. Chemical Society Reviews, 2022, 51, 2873-2905.	18.7	108
24	A new route for the preparation of mesoporous carbon materials with high performance in lithiumâ€"sulphur battery cathodes. Chemical Communications, 2013, 49, 5832.	2.2	97
25	Ordered Mesoporous Carbide Derived Carbons: Novel Materials for Catalysis and Adsorption. Journal of Physical Chemistry C, 2009, 113, 7755-7761.	1.5	96
26	Hierarchical Carbideâ€Derived Carbon Foams with Advanced Mesostructure as a Versatile Electrochemical Energyâ€Storage Material. Advanced Energy Materials, 2014, 4, 1300645.	10.2	96
27	Interaction of electrolyte molecules with carbon materials of well-defined porosity: characterization by solid-state NMR spectroscopy. Physical Chemistry Chemical Physics, 2013, 15, 15177.	1.3	90
28	PEGylated hollow mesoporous silica nanoparticles as potential drug delivery vehicles. Microporous and Mesoporous Materials, 2011, 141, 199-206.	2.2	89
29	Direct Mechanocatalysis: Using Milling Balls as Catalysts. Chemistry - A European Journal, 2020, 26, 12903-12911.	1.7	86
30	Self-Supporting Hierarchical Porous PtAg Alloy Nanotubular Aerogels as Highly Active and Durable Electrocatalysts. Chemistry of Materials, 2016, 28, 6477-6483.	3.2	81
31	Nitrogenâ€Doped Biomassâ€Derived Carbon Formed by Mechanochemical Synthesis for Lithiumâ€"Sulfur Batteries. ChemSusChem, 2019, 12, 310-319.	3.6	81
32	Revising the Concept of Pore Hierarchy for Ionic Transport in Carbon Materials for Supercapacitors. Advanced Energy Materials, 2018, 8, 1800892.	10.2	79
33	Preparation and application of cellular and nanoporous carbides. Chemical Society Reviews, 2012, 41, 5053.	18.7	78
34	The Importance of Pore Size and Surface Polarity for Polysulfide Adsorption in Lithium Sulfur Batteries. Advanced Materials Interfaces, 2016, 3, 1600508.	1.9	76
35	Direct Mechanocatalysis: Palladium as Milling Media and Catalyst in the Mechanochemical Suzuki Polymerization. Angewandte Chemie - International Edition, 2019, 58, 18942-18947.	7.2	75
36	Illuminating solid gas storage in confined spaces â€" methane hydrate formation in porous model carbons. Physical Chemistry Chemical Physics, 2016, 18, 20607-20614.	1.3	73

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37	Mechanochemical Suzuki polycondensation â€“ from linear to hyperbranched polyphenylenes. Green Chemistry, 2017, 19, 2973-2979.	4.6	69
38	A guide to direct mechanocatalysis. Chemical Communications, 2022, 58, 1661-1671.	2.2	64
39	Mechanochemical polymerization â€“ controlling a polycondensation reaction between a diamine and a dialdehyde in a ball mill. RSC Advances, 2016, 6, 64799-64802.	1.7	63
40	Role of Surface Functional Groups in Ordered Mesoporous Carbide-Derived Carbon/Ionic Liquid Electrolyte Double-Layer Capacitor Interfaces. ACS Applied Materials & Interfaces, 2014, 6, 2922-2928.	4.0	61
41	Mixed Aerogels from Au and CdTe Nanoparticles. Advanced Functional Materials, 2013, 23, 1903-1911.	7.8	60
42	The mechanochemical Scholl reaction â€“ a solvent-free and versatile graphitization tool. Chemical Communications, 2018, 54, 5307-5310.	2.2	59
43	Methane Hydrate in Confined Spaces: An Alternative Storage System. ChemPhysChem, 2018, 19, 1298-1314.	1.0	59
44	Micro- and mesoporous carbide-derived carbon prepared by a sacrificial template method in high performance lithium sulfur battery cathodes. Journal of Materials Chemistry A, 2014, 2, 17649-17654.	5.2	54
45	Transition metal loaded silicon carbide-derived carbons with enhanced catalytic properties. Carbon, 2012, 50, 1861-1870.	5.4	53
46	Experimental Evidence of Confined Methane Hydrate in Hydrophilic and Hydrophobic Model Carbons. Journal of Physical Chemistry C, 2019, 123, 24071-24079.	1.5	52
47	Nanoimprint lithography of nanoporous carbon materials for micro-supercapacitor architectures. Nanoscale, 2018, 10, 10109-10115.	2.8	51
48	Synthesis, characterization, and hydrogen storage capacities of hierarchical porous carbide derived carbon monolith. Journal of Materials Chemistry, 2012, 22, 23893.	6.7	50
49	Carbon dioxide activated carbide-derived carbon monoliths as high performance adsorbents. Carbon, 2013, 56, 139-145.	5.4	50
50	Hybrid N-Butylamine-Based Ligands for Switching the Colloidal Solubility and Regimentation of Inorganic-Capped Nanocrystals. ACS Nano, 2017, 11, 1559-1571.	7.3	49
51	An Asymmetric Supercapacitorâ€“Diode (CAPode) for Unidirectional Energy Storage. Angewandte Chemie - International Edition, 2019, 58, 13060-13065.	7.2	49
52	Mechanochemical Friedelâ€“Crafts Alkylationâ€”A Sustainable Pathway Towards Porous Organic Polymers. Angewandte Chemie, 2017, 129, 6963-6967.	1.6	47
53	Mechanochemical synthesis of N-doped porous carbon at room temperature. Nanoscale, 2019, 11, 4712-4718.	2.8	47
54	Ordered mesoporous carbide-derived carbons prepared by soft templating. Carbon, 2012, 50, 3987-3994.	5.4	46

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55	Rediscovering zeolite mechanochemistry â€“ A pathway beyond current synthesis and modification boundaries. Microporous and Mesoporous Materials, 2014, 194, 106-114.	2.2	45
56	Trimodal hierarchical carbide-derived carbon monoliths from steam- and CO₂-activated wood templates for high rate lithium sulfur batteries. Journal of Materials Chemistry A, 2015, 3, 24103-24111.	5.2	38
57	Hydrogen production from catalytic decomposition of methane over ordered mesoporous carbons (CMK-3) and carbide-derived carbon (DUT-19). Carbon, 2014, 67, 377-389.	5.4	36
58	Carbon onion/sulfur hybrid cathodes <i>via</i> inverse vulcanization for lithiumâ€“sulfur batteries. Sustainable Energy and Fuels, 2018, 2, 133-146.	2.5	36
59	Mechanochemical synthesis of porous carbon at room temperature with a highly ordered sp2 microstructure. Carbon, 2018, 139, 325-333.	5.4	36
60	Design of Hierarchically Porous Carbons with Interlinked Hydrophilic and Hydrophobic Surface and Their Capacitive Behavior. Chemistry of Materials, 2016, 28, 8715-8725.	3.2	35
61	Carbon onionâ€“sulfur hybrid cathodes for lithiumâ€“sulfur batteries. Sustainable Energy and Fuels, 2017, 1, 84-94.	2.5	34
62	Tailored Mesoporous Carbon/Vanadium Pentoxide Hybrid Electrodes for High Power Pseudocapacitive Lithium and Sodium Intercalation. Chemistry of Materials, 2017, 29, 8653-8662.	3.2	34
63	Microporous novolac-derived carbon beads/sulfur hybrid cathode for lithium-sulfur batteries. Journal of Power Sources, 2017, 357, 198-208.	4.0	33
64	Electrolyte mobility in supercapacitor electrodes â€“ Solid state NMR studies on hierarchical and narrow pore sized carbons. Energy Storage Materials, 2018, 12, 183-190.	9.5	33
65	The mechanochemical Scholl reaction as a versatile synthesis tool for the solvent-free generation of microporous polymers. RSC Advances, 2020, 10, 25509-25516.	1.7	33
66	Structural Characterization of Micro- and Mesoporous Carbon Materials Using In Situ High Pressure ¹²⁹Xe NMR Spectroscopy. Chemistry of Materials, 2014, 26, 3280-3288.	3.2	31
67	Textural Characterization of Micro- and Mesoporous Carbons Using Combined Gas Adsorption and <i>n</i>-Nonane Preadsorption. Langmuir, 2013, 29, 8133-8139.	1.6	30
68	Nanocasting in ball mills â€“ combining ultra-hydrophilicity and ordered mesoporosity in carbon materials. Journal of Materials Chemistry A, 2018, 6, 859-865.	5.2	29
69	Sustainable and rapid preparation of nanosized Fe/Ni-pentlandite particles by mechanochemistry. Chemical Science, 2020, 11, 12835-12842.	3.7	29
70	Comparing pore structure models of nanoporous carbons obtained from small angle X-ray scattering and gas adsorption. Carbon, 2019, 152, 416-423.	5.4	28
71	Influence of surface wettability on methane hydrate formation in hydrophilic and hydrophobic mesoporous silicas. Chemical Engineering Journal, 2021, 405, 126955.	6.6	28
72	Kroll-carbons based on silica and alumina templates as high-rate electrode materials in electrochemical double-layer capacitors. Journal of Materials Chemistry A, 2014, 2, 5131.	5.2	27

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73	Evolution of porosity in carbide-derived carbon aerogels. Journal of Materials Chemistry A, 2014, 2, 18472-18479.	5.2	27
74	Mechanochemicallyâ€Assisted Synthesis of Polyimides. ChemSusChem, 2022, 15, e202101975.	3.6	25
75	Solvent-free synthesis of a porous thiophene polymer by mechanochemical oxidative polymerization. Journal of Materials Chemistry A, 2018, 6, 21901-21905.	5.2	24
76	Mechanochemical synthesis of hyper-crosslinked polymers: influences on their pore structure and adsorption behaviour for organic vapors. Beilstein Journal of Organic Chemistry, 2019, 15, 1154-1161.	1.3	24
77	Ordered Mesoporous Boron Carbide Based Materials via Precursor Nanocasting. Chemistry of Materials, 2010, 22, 4660-4668.	3.2	23
78	Thermogravimetric Analysis of Activated Carbons, Ordered Mesoporous Carbide-Derived Carbons, and Their Deactivation Kinetics of Catalytic Methane Decomposition. Industrial & Engineering Chemistry Research, 2014, 53, 1741-1753.	1.8	23
79	Emulsion soft templating of carbide-derived carbon nanospheres with controllable porosity for capacitive electrochemical energy storage. Journal of Materials Chemistry A, 2015, 3, 17983-17990.	5.2	23
80	Direkte Mechanokatalyse: Palladium als Mahlmaterial und Katalysator in der mechanochemischen Suzukiâ€Polymerisation. Angewandte Chemie, 2019, 131, 19118-19123.	1.6	23
81	Revealing the Impact of Hierarchical Pore Organization in Supercapacitor Electrodes by Coupling Ionic Dynamics at Microâ€and Macroscales. Advanced Energy Materials, 2021, 11, 2100700.	10.2	23
82	Functionalised porous nanocomposites: a multidisciplinary approach to investigate designed structures for supercapacitor applications. Journal of Materials Chemistry A, 2013, 1, 4904.	5.2	22
83	Carbon nano-composites for lithiumâ€"sulfur batteries. Current Opinion in Green and Sustainable Chemistry, 2017, 4, 64-71.	3.2	22
84	Titanium Carbide and Carbideâ€Derived Carbon Composite Nanofibers by Electrospinning of Tiâ€Resin Precursor. Chemie-Ingenieur-Technik, 2013, 85, 1742-1748.	0.4	21
85	Ionic liquid - Electrode materials interactions studied by NMR spectroscopy, cyclic voltammetry, and impedance spectroscopy. Energy Storage Materials, 2019, 19, 432-438.	9.5	21
86	Mechanochemical Cyclodehydrogenation with Elemental Copper: An Alternative Pathway toward Nanographenes. ACS Sustainable Chemistry and Engineering, 2020, 8, 7569-7573.	3.2	21
87	Preparation of cubic ordered mesoporous silicon carbide monoliths by pressure assisted preceramic polymer nanocasting. Microporous and Mesoporous Materials, 2013, 168, 142-147.	2.2	20
88	ZnPd/ZnO Aerogels as Potential Catalytic Materials. Advanced Functional Materials, 2016, 26, 1014-1020.	7.8	20
89	Towards a continuous adsorption process for the enrichment of ACE-inhibiting peptides from food protein hydrolysates. Carbon, 2016, 107, 116-123.	5.4	20
90	Mechanochemistry-assisted synthesis of hierarchical porous carbons applied as supercapacitors. Beilstein Journal of Organic Chemistry, 2017, 13, 1332-1341.	1.3	20

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91	Upcycling of polyurethane waste by mechanochemistry: synthesis of N-doped porous carbon materials for supercapacitor applications. Beilstein Journal of Nanotechnology, 2019, 10, 1618-1627.	1.5	20
92	Salt templated synthesis of hierarchical covalent triazine frameworks. Microporous and Mesoporous Materials, 2017, 239, 190-194.	2.2	19
93	The Direct Mechanocatalytic Suzukiâ€“Miyaura Reaction of Small Organic Molecules. Angewandte Chemie - International Edition, 2022, 61, .	7.2	18
94	Interactions Between Electrolytes and Carbon-Based Materialsâ€”NMR Studies on Electrical Double-Layer Capacitors, Lithium-Ion Batteries, and Fuel Cells. Annual Reports on NMR Spectroscopy, 2016, , 237-318.	0.7	17
95	CeO₂/Pt Catalyst Nanoparticle Containing Carbide-Derived Carbon Composites by a New In situ Functionalization Strategy. Chemistry of Materials, 2011, 23, 57-66.	3.2	16
96	Structuring zeolite bodies for enhanced heat-transfer properties. Microporous and Mesoporous Materials, 2015, 208, 196-202.	2.2	16
97	The mechanochemical Friedelâ€Crafts polymerization as a solventâ€free crossâ€linking approach toward microporous polymers. Journal of Polymer Science, 2022, 60, 62-71.	2.0	16
98	The Formation and Morphology of Nanoparticle Supracrystals. Advanced Functional Materials, 2016, 26, 4890-4895.	7.8	15
99	Tailoring the porosity of a mesoporous carbon by a solvent-free mechanochemical approach. Carbon, 2019, 147, 43-50.	5.4	15
100	Titanium Niobium Oxide Ti₂Nb₁₀O₂₉/Carbon Hybrid Electrodes Derived by Mechanochemically Synthesized Carbide for Highâ€Performance Lithiumâ€Ion Batteries. ChemSusChem, 2021, 14, 398-407.	3.6	15
101	Bronze Age of Direct Mechanocatalysis: How Alloyed Milling Materials Advance Coupling in Ball Mills. Advanced Energy and Sustainability Research, 2021, 2, 2100011.	2.8	15
102	Beyond the Scholl reaction â€“ one-step planarization and edge chlorination of nanographenes by mechanochemistry. RSC Advances, 2021, 11, 38026-38032.	1.7	15
103	On the origin of mesopore collapse in functionalized porous carbons. Carbon, 2019, 149, 743-749.	5.4	14
104	Inâ€…Situ Generation of Electrolyte inside Pyridineâ€Based Covalent Triazine Frameworks for Direct Supercapacitor Integration. ChemSusChem, 2020, 13, 3192-3198.	3.6	14
105	A hard-templating route towards ordered mesoporous tungsten carbide and carbide-derived carbons. Microporous and Mesoporous Materials, 2014, 186, 163-167.	2.2	13
106	Extraction of ACE-inhibiting dipeptides from protein hydrolysates using porous carbon materials. Carbon, 2014, 77, 191-198.	5.4	13
107	Enhancing ACE-inhibition of food protein hydrolysates by selective adsorption using porous carbon materials. Carbon, 2015, 87, 309-316.	5.4	13
108	Mechanochemically Assisted Synthesis of Hexaazatriphenylenehexacarbonitrile. Journal of Organic Chemistry, 2021, 86, 14011-14015.	1.7	13

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109	Complete and partial oxidation of methane on ceria/platinum silicon carbide nanocomposites. Catalysis Science and Technology, 2012, 2, 139-146.	2.1	11
110	A comprehensive approach for the characterization of porous polymers using 13C and 15N dynamic nuclear polarization NMR spectroscopy. Physical Chemistry Chemical Physics, 2020, 22, 23307-23314.	1.3	11
111	Solid-state transformation of aqueous to organic electrolyte â€“ Enhancing the operating voltage window of â€˜<i>in situ</i> electrolyteâ€™ supercapacitors. Sustainable Energy and Fuels, 2020, 4, 2438-2447.	2.5	11
112	Mechanochemical Functionalization of Carbon Black at Room Temperature. Journal of Carbon Research, 2018, 4, 14.	1.4	8
113	Ceria/silicon carbide coreâ€“shell materials prepared by miniemulsion technique. Beilstein Journal of Nanotechnology, 2011, 2, 638-644.	1.5	7
114	The â€œIn Situ Electrolyteâ€•Concept: Using Activation Chemicals as Electrolytes for Carbonâ€Based Supercapacitors. Advanced Sustainable Systems, 2018, 2, 1800087.	2.7	7
115	Tailoring the Adsorption of ACE-Inhibiting Peptides by Nitrogen Functionalization of Porous Carbons. Langmuir, 2019, 35, 9721-9731.	1.6	6
116	An Asymmetric Supercapacitorâ€“Diode (CAPode) for Unidirectional Energy Storage. Angewandte Chemie, 2019, 131, 13194-13199.	1.6	6
117	Die direkte mechanokatalytische Suzukiâ€“Miyauraâ€Kupplung kleiner organischer MolekÃ¼le. Angewandte Chemie, 2022, 134, .	1.6	6
118	Scaleâ€Up of Solventâ€Free, Mechanochemical Precursor Synthesis for Nanoporous Carbon Materials via Extrusion. ChemSusChem, 2022, 15, .	3.6	6
119	Solvent-free hierarchization of zeolites by carbochlorination. Journal of Materials Chemistry A, 2017, 5, 221-229.	5.2	5
120	Diffusion: Revising the Concept of Pore Hierarchy for Ionic Transport in Carbon Materials for Supercapacitors (Adv. Energy Mater. 24/2018). Advanced Energy Materials, 2018, 8, 1870108.	10.2	5
121	Non-porous organic crystals and their interaction with guest molecules from the gas phase. Adsorption, 2020, 26, 1323-1333.	1.4	3
122	Reaktoren fÃ¼r spezielle technisch-chemische Prozesse: Tribochemische Reaktoren. Springer Reference Naturwissenschaften, 2018, , 1-28.	0.2	1
123	Frontispiece: Direct Mechanocatalysis: Using Milling Balls as Catalysts. Chemistry - A European Journal, 2020, 26, .	1.7	0
124	Supercapacitors: Revealing the Impact of Hierarchical Pore Organization in Supercapacitor Electrodes by Coupling Ionic Dynamics at Microâ€•and Macroscales (Adv. Energy Mater. 24/2021). Advanced Energy Materials, 2021, 11, 2170090.	10.2	0
125	Reaktoren fÃ¼r spezielle technisch-chemische Prozesse: Tribochemische Reaktoren. Springer Reference Naturwissenschaften, 2020, , 1155-1182.	0.2	0