

# Wilhelm Schabel

## List of Publications by Year in descending order

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101  
papers

3,131  
citations

136950

32  
h-index

168389

53  
g-index

105  
all docs

105  
docs citations

105  
times ranked

3055  
citing authors

#	ARTICLE	IF	CITATIONS
1	Investigation of film solidification and binder migration during drying of Li-Ion battery anodes. <i>Journal of Power Sources</i> , 2016, 318, 210-219.	7.8	201
2	Moving through the Phase Diagram: Morphology Formation in Solution Cast Polymer/Fullerene Blend Films for Organic Solar Cells. <i>ACS Nano</i> , 2011, 5, 8579-8590.	14.6	159
3	Highly efficient polymer solar cells cast from non-halogenated xylene/anisaldehyde solution. <i>Energy and Environmental Science</i> , 2015, 8, 2744-2752.	30.8	139
4	Pressure drop measurements of ceramic sponges—Determining the hydraulic diameter. <i>Chemical Engineering Science</i> , 2009, 64, 3633-3640.	3.8	138
5	A novel slurry concept for the fabrication of lithium-ion battery electrodes with beneficial properties. <i>Journal of Power Sources</i> , 2014, 265, 81-90.	7.8	131
6	Microstructure formation of lithium-ion battery electrodes during drying — An ex-situ study using cryogenic broad ion beam slope-cutting and scanning electron microscopy (Cryo-BIB-SEM). <i>Journal of Power Sources</i> , 2017, 345, 97-107.	7.8	104
7	Slot-die processing of lithium-ion battery electrodes—Coating window characterization. <i>Chemical Engineering and Processing: Process Intensification</i> , 2013, 68, 32-37.	3.6	102
8	Slot die coating of lithium-ion battery electrodes: investigations on edge effect issues for stripe and pattern coatings. <i>Journal of Coatings Technology Research</i> , 2014, 11, 57-63.	2.5	97
9	In Situ X-Ray Study of Drying—Temperature Influence on the Structural Evolution of Bulk-Heterojunction Polymer/Fullerene Solar Cells Processed by Doctor-Blading. <i>Advanced Energy Materials</i> , 2011, 1, 363-367.	19.5	89
10	Comparison of large scale coating techniques for organic and hybrid films in polymer based solar cells. <i>Chemical Engineering and Processing: Process Intensification</i> , 2013, 68, 38-44.	3.6	80
11	Drying of Lithium-Ion Battery Anodes for Use in High-Energy Cells: Influence of Electrode Thickness on Drying Time, Adhesion, and Crack Formation. <i>Energy Technology</i> , 2019, 7, 1900722.	3.8	79
12	Determination of the thermal properties of ceramic sponges. <i>International Journal of Heat and Mass Transfer</i> , 2010, 53, 198-205.	4.8	78
13	Polymeric anodes from poly(3,4-ethylenedioxythiophene):poly(styrenesulfonate) for 3.5% efficient organic solar cells. <i>Thin Solid Films</i> , 2009, 517, 5900-5902.	1.8	74
14	Effect of Photovoltaic Polymer/Fullerene Blend Composition Ratio on Microstructure Evolution during Film Solidification Investigated in Real Time by X-ray Diffraction. <i>Macromolecules</i> , 2011, 44, 3795-3800.	4.8	74
15	Investigation of non-halogenated solvent mixtures for high throughput fabrication of polymer/fullerene solar cells. <i>Solar Energy Materials and Solar Cells</i> , 2012, 96, 195-201.	6.2	70
16	Drying and film formation of industrial waterborne latices. <i>AIChE Journal</i> , 2007, 53, 549-560.	3.6	67
17	Measurements of sorption isotherms and diffusion coefficients by means of a magnetic suspension balance. <i>Chemical Engineering and Processing: Process Intensification</i> , 2004, 43, 753-763.	3.6	62
18	Process and Product Development of Electrodes for Lithium-Ion Cells. <i>Chemie-Ingenieur-Technik</i> , 2014, 86, 695-706.	0.8	56

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19	Experimental investigation into battery electrode surfaces: The distribution of liquid at the surface and the emptying of pores during drying. <i>Journal of Colloid and Interface Science</i> , 2017, 494, 22-31.	9.4	54
20	Development of a three-stage drying profile based on characteristic drying stages for lithium-ion battery anodes. <i>Drying Technology</i> , 2017, 35, 1266-1275.	3.1	51
21	An experimental and analytical study on intermittent slot die coating of viscoelastic battery slurries. <i>Journal of Coatings Technology Research</i> , 2015, 12, 927-938.	2.5	49
22	Sorption and diffusion measurements in ternary polymer-solvent systems by means of a magnetic suspension balance-Experimental methods and correlations with a modified Flory-Huggins and free-volume theory. <i>Chemical Engineering Science</i> , 2007, 62, 2254-2266.	3.8	47
23	Mass transport measurements in membranes by means of in situ Raman spectroscopy-First results of methanol and water profiles in fuel cell membranes. <i>Journal of Membrane Science</i> , 2007, 303, 37-42.	8.2	46
24	Modelling of alcohol and water diffusion in fuel cell membranes-Experimental validation by means of in situ Raman spectroscopy. <i>Chemical Engineering Science</i> , 2008, 63, 4676-4684.	3.8	42
25	Drying Dynamics of Solution-Processed Perovskite Thin-Film Photovoltaics: In Situ Characterization, Modeling, and Process Control. <i>Advanced Energy Materials</i> , 2019, 9, 1901581.	19.5	42
26	Investigations on knife and slot die coating and processing of polymer nanoparticle films for hybrid polymer solar cells. <i>Chemical Engineering and Processing: Process Intensification</i> , 2011, 50, 478-482.	3.6	40
27	Development of a water based process for stable conversion cathodes on the basis of FeF <sub>3</sub> . <i>Journal of Power Sources</i> , 2016, 313, 213-222.	7.8	39
28	Impact of drying conditions and wet film properties on adhesion and film solidification of lithium-ion battery anodes. <i>Drying Technology</i> , 2017, 35, 1807-1817.	3.1	39
29	Water sorption in poly(vinyl alcohol) membranes: An experimental and numerical study of solvent diffusion in a crosslinked polymer. <i>Chemical Engineering and Processing: Process Intensification</i> , 2011, 50, 543-550.	3.6	34
30	Determination of Concentration-Dependent Diffusion Coefficients in Polymer-Solvent Systems: Analysis of Concentration Profiles Measured by Raman Spectroscopy during Single Drying Experiments Excluding Boundary Conditions and Phase Equilibrium. <i>Macromolecules</i> , 2015, 48, 8608-8614.	4.8	34
31	In Situ Investigations of Simultaneous Two-Layer Slot Die Coating of Component-Graded Anodes for Improved High-Energy Li-Ion Batteries. <i>Energy Technology</i> , 2020, 8, 1901251.	3.8	32
32	New method for binder and carbon black detection at nanometer scale in carbon electrodes for lithium ion batteries. <i>Journal of Power Sources</i> , 2017, 363, 460-469.	7.8	31
33	Structure Formation in Low-Bandgap Polymer:Fullerene Solar Cell Blends in the Course of Solvent Evaporation. <i>Macromolecules</i> , 2012, 45, 7948-7955.	4.8	28
34	From Micro to Nano Thin Polymer Layers: Thickness and Concentration Dependence of Sorption and the Solvent Diffusion Coefficient. <i>Macromolecules</i> , 2015, 48, 8285-8293.	4.8	27
35	Comparative Study of Printed Multilayer OLED Fabrication through Slot Die Coating, Gravure and Inkjet Printing, and Their Combination. <i>Colloids and Interfaces</i> , 2019, 3, 32.	2.1	27
36	Spatially resolved drying kinetics of multi-component solution cast films for organic electronics. <i>Chemical Engineering and Processing: Process Intensification</i> , 2011, 50, 509-515.	3.6	26

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37	Slot Die Coated and Flexo Printed Highly Efficient SMOLEDs. <i>Advanced Materials Technologies</i> , 2017, 2, 1600230.	5.8	23
38	Influence of the drying conditions on the particle distribution in particle filled polymer films: Experimental validation of predictive drying regime maps. <i>Chemical Engineering and Processing: Process Intensification</i> , 2018, 123, 138-147.	3.6	23
39	Drying of NCM Cathode Electrodes with Porous, Nanostructured Particles Versus Compact Solid Particles: Comparative Study of Binder Migration as a Function of Drying Conditions. <i>Energy Technology</i> , 2022, 10, .	3.8	23
40	Analytical determination of process windows for bilayer slot die coating. <i>Journal of Coatings Technology Research</i> , 2015, 12, 877-887.	2.5	22
41	Gaining Further Insight into the Solvent Additive-Driven Crystallization of Bulk-Heterojunction Solar Cells by <i>in Situ</i> X-ray Scattering and Optical Reflectometry. <i>Macromolecules</i> , 2016, 49, 4867-4874.	4.8	22
42	Moisture Adsorption Behavior in Anodes for Li-ion Batteries. <i>Energy Technology</i> , 2020, 8, 1801162.	3.8	22
43	Evaporation from open microchannel grooves. <i>Lab on A Chip</i> , 2014, 14, 771-778.	6.0	20
44	Investigation of surface deformation during drying of thin polymer films due to Marangoni convection. <i>Chemical Engineering and Processing: Process Intensification</i> , 2013, 64, 24-30.	3.6	19
45	Edge Formation in High-Speed Intermittent Slot Die Coating of Disruptively Stacked Thick Battery Electrodes. <i>Energy Technology</i> , 2020, 8, 1900137.	3.8	17
46	Reduced Drying Time of Anodes for Lithium-ion Batteries through Simultaneous Multilayer Coating. <i>Energy Technology</i> , 2021, 9, 2100367.	3.8	17
47	Multilayer OLEDs with four slot die-coated layers. <i>Journal of Coatings Technology Research</i> , 2019, 16, 1643-1652.	2.5	16
48	Investigation of Drying Curves of Lithium-ion Battery Electrodes with a New Gravimetric Double-Side Batch Dryer Concept Including Setup Characterization and Model Simulations. <i>Energy Technology</i> , 2021, 9, 2000889.	3.8	16
49	High-Speed Coating of Primer Layer for Li-ion Battery Electrodes by Using Slot Die Coating. <i>Energy Technology</i> , 2020, 8, 2000259.	3.8	15
50	Investigation of edge formation during the coating process of Li-ion battery electrodes. <i>Journal of Coatings Technology Research</i> , 2022, 19, 121-130.	2.5	15
51	Slot die stripe coating of low viscous fluids. <i>Journal of Coatings Technology Research</i> , 2018, 15, 899-911.	2.5	14
52	Liquid film coating of small molecule OLEDs. <i>Journal of Coatings Technology Research</i> , 2014, 11, 75-81.	2.5	13
53	Formation of blade and slot die coated small molecule multilayers for OLED applications studied theoretically and by XPS depth profiling. <i>AIP Advances</i> , 2016, 6, .	1.3	12
54	Influence of the drying conditions on the particle distribution in particle-filled polymer films: Predictive simulation of the particle distribution during drying. <i>Journal of Composite Materials</i> , 2017, 51, 3391-3403.	2.4	12

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55	Drying and Coating of Perovskite Thin Films: How to Control the Thin Film Morphology in Scalable Dynamic Coating Systems. ACS Applied Materials & Interfaces, 2022, 14, 11300-11312.	8.0	12
56	Influence of non-volatile additives on the diffusion of solvents in polymeric coatings. Chemical Engineering and Processing: Process Intensification, 2011, 50, 551-554.	3.6	11
57	Water sorption in semicrystalline poly(vinyl alcohol) membranes: In situ characterisation of solvent-induced structural rearrangements. Journal of Membrane Science, 2012, 389, 162-172.	8.2	11
58	Investigation of the flow field in thin polymer films due to inhomogeneous drying. Journal of Coatings Technology Research, 2015, 12, 921-926.	2.5	11
59	Hysteresis Behavior in the Sorption Equilibrium of Water in Anodes for Li-Ion Batteries. Langmuir, 2020, 36, 6193-6201.	3.5	11
60	Design of Vacuum Post-Drying Procedures for Electrodes of Lithium-Ion Batteries. Batteries and Supercaps, 2021, 4, 1499-1515.	4.7	11
61	Prediction of diffusion in a ternary solvent-solvent-polymer blend by means of binary diffusion data: Comparison of experimental data and simulative results. Journal of Applied Polymer Science, 2016, 133, .	2.6	10
62	Investigation of interfacial instabilities with a two-layer slide coating process. Journal of Coatings Technology Research, 2017, 14, 991-1001.	2.5	10
63	Diffusion kinetics of water in graphite anodes for Li-ion batteries. Drying Technology, 2022, 40, 1130-1145.	3.1	10
64	Local heat transfer characteristics of a slot nozzle array for batch drying of thin films under industrial process conditions. Journal of Coatings Technology Research, 2015, 12, 915-920.	2.5	9
65	Activity determination of FAD-dependent glucose dehydrogenase immobilized in PEDOT: PSS/PVA composite films for biosensor applications. Engineering in Life Sciences, 2016, 16, 577-585.	3.6	9
66	Correlative In Situ Multichannel Imaging for Large-Area Monitoring of Morphology Formation in Solution-Processed Perovskite Layers. Solar Rrl, 2022, 6, 2100353.	5.8	9
67	Effect of Diffusion on Component Segregation During Drying of Aqueous Solutions Containing Protein and Sugar. Drying Technology, 2015, 33, 288-300.	3.1	8
68	Diffusion in quaternary polymer solutions-Model development and validation. Progress in Organic Coatings, 2017, 110, 187-194.	3.9	8
69	G10 Impinging Jet Flow Heat Transfer. , 2010, , 745-752.		8
70	Influence of Particle Shape on the Drying Regime Maps for Plate-like Particle-Polymer Composites. Langmuir, 2020, 36, 6245-6253.	3.5	8
71	Investigation of Heat Transfer within an Array of Impinging Jets with Local Extraction of Spent Fluid. , 2014, , .		8
72	Sorption isotherms of mixtures of polymers, proteins and electrolytes-Measurement data and model predictions. Chemical Engineering and Processing: Process Intensification, 2013, 68, 45-54.	3.6	7

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73	Slot die-coated blue SMOLED multilayers. <i>Journal of Coatings Technology Research</i> , 2017, 14, 1029-1037.	2.5	7
74	Influence of Layer Thickness on the Drying of Lithium-Ion Battery Electrodes—Simulation and Experimental Validation. <i>Energy Technology</i> , 2021, 9, 2100013.	3.8	7
75	Visualization of surface deformations during thin film drying using a Digital-Image-Correlation method. <i>Chemical Engineering and Processing: Process Intensification</i> , 2011, 50, 569-573.	3.6	6
76	Investigation of the flow structure in thin polymer films using 3D $\mu$ PTV enhanced by GPU. <i>Experiments in Fluids</i> , 2018, 59, 1.	2.4	6
77	Different dominating mass transport mechanisms for drying and sorption of toluene-PMMA films – Visualized with Raman spectroscopy. <i>Polymer</i> , 2021, 222, 123640.	3.8	6
78	Drying Kinetics from Micrometer- to Nanometer-Scale Polymer Films: A Study on Solvent Diffusion, Polymer Relaxation, and Substrate Interaction Effects. <i>Langmuir</i> , 2021, 37, 6022-6031.	3.5	6
79	Coat formation of surface-active proteins on aqueous surfaces during drying. <i>Colloids and Surfaces B: Biointerfaces</i> , 2014, 123, 53-60.	5.0	5
80	Modeling of interdiffusion in poly(vinyl acetate)-poly(methyl methacrylate)-toluene multicomponent systems. <i>Journal of Applied Polymer Science</i> , 2019, 136, 47092.	2.6	5
81	D5 Properties of Multicomponent Fluid Mixtures. , 2010, , 513-550.		4
82	Phase equilibrium of water in different types of PEDOT:PSS. <i>Chemical Engineering and Processing: Process Intensification</i> , 2011, 50, 555-557.	3.6	4
83	Determination of Binary Interaction Parameters for Ternary Polymer-Polymer-Solvent Systems Using Raman Spectroscopy. <i>Advanced Materials Technologies</i> , 2021, 6, 2000149.	5.8	4
84	Critical Solutal Marangoni Number Correlation for Short-Scale Convective Instabilities in Drying Poly(vinyl acetate)-Methanol Thin Films. <i>Polymers</i> , 2021, 13, 2955.	4.5	4
85	Drying kinetic measurements of polymer nanolayers – Experimental results with a model-based validation and interpretation of solvent diffusion. <i>Polymer</i> , 2020, 200, 122595.	3.8	4
86	POLYMER SOLAR CELLS: In Situ X-Ray Study of Drying-Temperature Influence on the Structural Evolution of Bulk-Heterojunction Polymer-Fullerene Solar Cells Processed by Doctor-Blading (Adv.) <i>Tj ETQq0 0 0 rg BT/6 Overlock 10 Tf 50</i>		
87	Dependence of opto-electric properties of (semi-)conducting films in polymer based solar cells on viscous shear during the coating process. <i>Organic Electronics</i> , 2013, 14, 1608-1613.	2.6	3
88	Calibration Routine for Quantitative Three-Dimensional Flow Field Measurements in Drying Polymer Solutions Subject to Marangoni Convection. <i>Colloids and Interfaces</i> , 2019, 3, 39.	2.1	3
89	Surface tension of binary and ternary polymer solutions: Experimental data of poly(vinyl acetate), poly(vinyl alcohol) and polyethylene glycol solutions and mixing rule evaluation over the entire concentration range. <i>Surfaces and Interfaces</i> , 2021, 26, 101352.	3.0	3
90	Determination of Diffusion Coefficients of Non-volatile Additives in Polymeric Coatings by Means of Inverse Micro Raman Spectroscopy. <i>Chemie-Ingenieur-Technik</i> , 2010, 82, 2097-2102.	0.8	2

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91	Numerical investigation of the local mass transfer on flat plates in laminar flow. Chemical Engineering and Processing: Process Intensification, 2011, 50, 503-508.	3.6	2
92	Designing a sensor for local heat transfer in impingement driers. Chemical Engineering and Processing: Process Intensification, 2011, 50, 516-518.	3.6	2
93	Process-dependent conductivity and film homogeneity of slot-die-coated PEDOT:PSS/PVA composite films. Journal of Coatings Technology Research, 2017, 14, 1039-1051.	2.5	2
94	In situ Studies of Morphology Formation in Solution-Processed Polymer/Fullerene Blends. Advances in Polymer Science, 2017, , 1-24.	0.8	1
95	Measurements and predictive modeling of water diffusion coefficients in bovine serum albumin/polymer blends for biosensors. Journal of Applied Polymer Science, 2017, 134, 45368.	2.6	1
96	Transient Three-Dimensional Flow Field Measurements by Means of 3D $\mu$ PTV in Drying Poly(Vinyl) Tj ETQq0 0 0 rgBT/Overlock 10 Tf 50	4.5	1
97	Dampf-Fl $\frac{1}{4}$ ssigkeits-Gleichgewichte und Diffusionskoeffizienten von Polymerl $\frac{1}{4}$ sungen. Springer Reference Technik, 2018, , 1-10.	0.0	0
98	Commentary regarding: "Activity determination of FAD-dependent glucose dehydrogenase immobilized in PEDOT: PSS/PVA composite films for biosensor applications". Engineering in Life Sciences, 2019, 19, 741-748.	3.6	0
99	In situ reflectance- photoluminescence imaging on solution-processed perovskite thin-films. , 2021, , .		0
100	On the drying kinetics of non-spherical particle-filled polymer films: A numerical study. AIChE Journal, 0, , e17398.	3.6	0
101	Spatially resolved monitoring and modelling of the formation dynamics in hybrid perovskite solution thin-films for large-scale morphology control. , 0, , .		0