

Stefan Schumann

List of Publications by Year in descending order

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Version: 2024-02-01

125
papers

3,202
citations

304743
22
h-index

155660
55
g-index

127
all docs

127
docs citations

127
times ranked

1439
citing authors

#	ARTICLE	IF	CITATIONS
1	Biosensor-Enabled Multiplexed On-Site Therapeutic Drug Monitoring of Antibiotics. <i>Advanced Materials</i> , 2022, 34, e2104555.	21.0	29
2	Biosensor-Enabled Multiplexed On-Site Therapeutic Drug Monitoring of Antibiotics (<i>Adv. Mater.</i>) Tj ETQq0 0 0 rgBT /Overlock 10 Tf 5	21.0	1
3	Understanding pediatric ventilation in the operative setting. Part II: Setting perioperative ventilation. <i>Paediatric Anaesthesia</i> , 2022, 32, 247-254.	1.1	2
4	Understanding pediatric ventilation in the operative setting. Part I: Physical principles of monitoring in the modern anesthesia workstation. <i>Paediatric Anaesthesia</i> , 2022, 32, 237-246.	1.1	0
5	Trigger performance of five pediatric home ventilators and one ICU ventilator depending on circuit type and system leak in a physical model of the lung. <i>Pediatric Pulmonology</i> , 2022, 57, 744-753.	2.0	1
6	Profiling Distinctive Inflammatory and Redox Responses to Hydrogen Sulfide in Stretched and Stimulated Lung Cells. <i>Antioxidants</i> , 2022, 11, 1001.	5.1	1
7	Lung area estimation using functional tidal electrical impedance variation images and active contouring. <i>Physiological Measurement</i> , 2022, 43, 075010.	2.1	3
8	Context-sensitive decrement times for inhaled anesthetics in obese patients explored with Gas Man [®] . <i>Journal of Clinical Monitoring and Computing</i> , 2021, 35, 343-354.	1.6	10
9	Ultrashort inspiratory times homogenize ventilation distribution in an inhomogeneous two-compartment model of the neonatal lung. <i>Pediatric Pulmonology</i> , 2021, 56, 418-423.	2.0	3
10	Mechanical ventilation restores blood gas homeostasis and diaphragm muscle strength in ketamine/medetomidine-anaesthetized rats. <i>Experimental Physiology</i> , 2021, 106, 396-400.	2.0	0
11	Loss of muscular force in isolated rat diaphragms is related to changes in muscle fibre size. <i>Physiological Measurement</i> , 2021, 42, 025003.	2.1	0
12	Prediction of expiratory desflurane and sevoflurane concentrations in lung-healthy patients utilizing cardiac output and alveolar ventilation matched pharmacokinetic models. <i>Medicine (United)</i> Tj ETQq0 0 0 rgBT /Overlock 10 Tf 5	2.1	1
13	Flow-controlled expiration (FLEX) homogenizes pressure distribution in a four compartment physical model of the respiratory system with chest wall compliance. <i>Physiological Measurement</i> , 2021, 42, 07NT01.	2.1	1
14	Air seal performance of personalized and statistically shaped 3D-printed face masks compared with market-available surgical and FFP2 masks. <i>Scientific Reports</i> , 2021, 11, 19347.	3.3	13
15	Control of the expiratory flow in a lung model and in healthy volunteers with an adjustable flow regulator: a combined bench and randomized crossover study. <i>Respiratory Research</i> , 2021, 22, 292.	3.6	1
16	Flow controlled expiration does not impair pedal power during physical exercise on a bicycle ergometer. <i>Respiratory Physiology and Neurobiology</i> , 2020, 271, 103303.	1.6	2
17	Flow-controlled ventilation improves gas exchange in lung-healthy patients—a randomized interventional cross-over study. <i>Acta Anaesthesiologica Scandinavica</i> , 2020, 64, 481-488.	1.6	28
18	Flow-Controlled Ventilation Attenuates Lung Injury in a Porcine Model of Acute Respiratory Distress Syndrome. <i>Critical Care Medicine</i> , 2020, 48, e241-e248.	0.9	38

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19	Dislodgement Forces and Cost Effectiveness of Dressings and Securement for Peripheral Intravenous Catheters: A Randomized Controlled Trial. <i>Journal of Clinical Medicine</i> , 2020, 9, 3192.	2.4	4
20	Sine ventilation in lung injury models: a new perspective for lung protective ventilation. <i>Scientific Reports</i> , 2020, 10, 11690.	3.3	0
21	A linearized expiration flow homogenizes the compartmental pressure distribution in a physical model of the inhomogeneous respiratory system. <i>Physiological Measurement</i> , 2020, 41, 045005.	2.1	5
22	Effect of individualized PEEP titration guided by intratidal compliance profile analysis on regional ventilation assessed by electrical impedance tomography – a randomized controlled trial. <i>BMC Anesthesiology</i> , 2020, 20, 42.	1.8	5
23	A novel mechanical ventilator providing flow-controlled expiration for small animals. <i>Laboratory Animals</i> , 2020, 54, 568-575.	1.0	1
24	Flow-controlled ventilation (FCV) improves regional ventilation in obese patients – a randomized controlled crossover trial. <i>BMC Anesthesiology</i> , 2020, 20, 24.	1.8	24
25	Dependency of respiratory system mechanics on positive end-expiratory pressure and recruitment maneuvers in lung healthy pediatric patients – A randomized crossover study. <i>Paediatric Anaesthesia</i> , 2020, 30, 905-911.	1.1	4
26	The authors reply:. <i>Critical Care Medicine</i> , 2020, 48, e1360-e1361.	0.9	0
27	Ventilation-Like Mechanical Strain Modulates the Inflammatory Response of BEAS2B Epithelial Cells. <i>Oxidative Medicine and Cellular Longevity</i> , 2019, 2019, 1-7.	4.0	5
28	Toward Continuous Monitoring of Breath Biochemistry: A Paper-Based Wearable Sensor for Real-Time Hydrogen Peroxide Measurement in Simulated Breath. <i>ACS Sensors</i> , 2019, 4, 2945-2951.	7.8	138
29	Characterization of Flow-Caused Intrarenal Pressure Conditions During Percutaneous Nephrolithotomy <i>In Vitro</i>. <i>Journal of Endourology</i> , 2019, 33, 235-241.	2.1	9
30	Carbon dioxide diffusion coefficient in noninvasive high-frequency oscillatory ventilation. <i>Pediatric Pulmonology</i> , 2019, 54, 759-764.	2.0	9
31	Glottic visibility for laryngeal surgery. <i>European Journal of Anaesthesiology</i> , 2019, 36, 963-971.	1.7	18
32	Flow-controlled ventilation during ear, nose and throat surgery. <i>European Journal of Anaesthesiology</i> , 2019, 36, 327-334.	1.7	27
33	Peak airway pressure is lower during pressure-controlled than during manual facemask ventilation for induction of anesthesia in pediatric patients – a randomized, clinical crossover trial. <i>Journal of Anesthesia</i> , 2019, 33, 33-39.	1.7	3
34	Intratidal Analysis of Intraoperative Respiratory System Mechanics. <i>Anesthesia and Analgesia</i> , 2018, 126, 724-725.	2.2	1
35	Non-invasive high-frequency oscillatory ventilation in preterm infants: a randomised controlled cross-over trial. <i>Archives of Disease in Childhood: Fetal and Neonatal Edition</i> , 2018, 103, F1-F5.	2.8	33
36	Pressure-flow characteristics of breathing systems and their components for pediatric and adult patients. <i>Paediatric Anaesthesia</i> , 2018, 28, 37-45.	1.1	6

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37	Dorsal recruitment with flow-controlled expiration (FLEX): an experimental study in mechanically ventilated lung-healthy and lung-injured pigs. <i>Critical Care</i> , 2018, 22, 245.	5.8	23
38	Improved lung recruitment and oxygenation during mandatory ventilation with a new expiratory ventilation assistance device. <i>European Journal of Anaesthesiology</i> , 2018, 35, 736-744.	1.7	45
39	Cardiogenic oscillations to detect intratidal derecruitment and overdistension in a porcine model of healthy and atelectatic lungs. <i>British Journal of Anaesthesia</i> , 2018, 121, 928-935.	3.4	1
40	Pneumoperitoneum deteriorates intratidal respiratory system mechanics: an observational study in lung-healthy patients. <i>Surgical Endoscopy and Other Interventional Techniques</i> , 2017, 31, 753-760.	2.4	12
41	Regional ventilation during phonation in professional male and female singers. <i>Respiratory Physiology and Neurobiology</i> , 2017, 239, 26-33.	1.6	5
42	Clinical on-site monitoring of β -lactam antibiotics for a personalized antibiotherapy. <i>Scientific Reports</i> , 2017, 7, 3127.	3.3	22
43	Application of the Novel Ventilation Mode FLOW-Controlled EXpiration (FLEX). <i>Anesthesia and Analgesia</i> , 2017, 125, 1246-1252.	2.2	28
44	Comparative usability of modern anaesthesia ventilators: a human factors study. <i>British Journal of Anaesthesia</i> , 2017, 119, 1000-1008.	3.4	15
45	Coaxial Tubing Systems Increase Artificial Airway Resistance and Work of Breathing. <i>Respiratory Care</i> , 2017, 62, 1171-1177.	1.6	3
46	Biosensors and personalized drug therapy: what does the future hold?. <i>Expert Review of Precision Medicine and Drug Development</i> , 2017, 2, 303-305.	0.7	9
47	Leakage in nasal high-frequency oscillatory ventilation improves carbon dioxide clearanceâ€”A bench study. <i>Pediatric Pulmonology</i> , 2017, 52, 367-372.	2.0	20
48	Increasing positive end-expiratory pressure (re-)improves intraoperative respiratory mechanics and lung ventilation after prone positioning. <i>British Journal of Anaesthesia</i> , 2016, 116, 838-846.	3.4	30
49	Intratidal recruitment/derecruitment persists at low and moderate positive end-expiratory pressure in paediatric patients. <i>Respiratory Physiology and Neurobiology</i> , 2016, 234, 9-13.	1.6	12
50	Compensating Artificial Airway Resistance via Active Expiration Assistance. <i>Respiratory Care</i> , 2016, 61, 1597-1604.	1.6	10
51	Intraoperative compliance profiles and regional lung ventilation improve with increasing positive end-expiratory pressure. <i>Acta Anaesthesiologica Scandinavica</i> , 2016, 60, 1241-1250.	1.6	19
52	Reply from the authors Individualized ventilatory strategy: ameliorate lung injury while preserving physiology. <i>British Journal of Anaesthesia</i> , 2016, 116, 439-440.	3.4	0
53	Double-lumen tubes and auto-PEEP during one-lung ventilation. <i>British Journal of Anaesthesia</i> , 2016, 116, 122-130.	3.4	98
54	The pressure drop across the endotracheal tube in mechanically ventilated pediatric patients. <i>Paediatric Anaesthesia</i> , 2015, 25, 413-420.	1.1	15

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55	Claudin-3, claudin-7, and claudin-10 show different distribution patterns during decidualization and trophoblast invasion in mouse and human. <i>Histochemistry and Cell Biology</i> , 2015, 144, 571-585.	1.7	30
56	Simultaneous monitoring of intratidal compliance and resistance in mechanically ventilated piglets: A feasibility study in two different study groups. <i>Respiratory Physiology and Neurobiology</i> , 2015, 219, 36-42.	1.6	1
57	Intraoperative positive end-expiratory pressure evaluation using the intratidal compliance-volume profile. <i>British Journal of Anaesthesia</i> , 2015, 114, 483-490.	3.4	35
58	Breathing-phase selective filtering of respiratory data improves analysis of dynamic respiratory mechanics. <i>Technology and Health Care</i> , 2014, 22, 717-728.	1.2	2
59	Assessing Respiratory Function Depends on Mechanical Characteristics of Balloon Catheters. <i>Respiratory Care</i> , 2014, 59, 1345-1352.	1.6	22
60	Flow-controlled expiration: a novel ventilation mode to attenuate experimental porcine lung injury. <i>British Journal of Anaesthesia</i> , 2014, 113, 474-483.	3.4	47
61	Monitoring of intratidal lung mechanics: a Graphical User Interface for a model-based decision support system for PEEP-titration in mechanical ventilation. <i>Journal of Clinical Monitoring and Computing</i> , 2014, 28, 613-623.	1.6	12
62	Demands on a continuing education online-study program for physicians. <i>Critical Care</i> , 2014, 18, .	5.8	0
63	Flow Controlled Expiration is perceived as less uncomfortable than positive end expiratory pressure. <i>Respiratory Physiology and Neurobiology</i> , 2014, 202, 59-63.	1.6	4
64	Mechanical load and mechanical integrity of lung cells – Experimental mechanostimulation of epithelial cell- and fibroblast-monolayers. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2014, 40, 201-209.	3.1	3
65	PEEP titration on the basis of intratidal resistance-volume profiles. <i>Critical Care</i> , 2014, 18, .	5.8	0
66	Graphical user interface for visualization of a decision support system for PEEP titration. <i>Critical Care</i> , 2014, 18, .	5.8	0
67	Time-dependent apoptosis induction after spontaneous-breathing or ventilation-analogue experimental mechanostimulation of monolayer lung cell cultures. <i>Critical Care</i> , 2014, 18, .	5.8	0
68	Mechanisms underlying the lung-protective effects of FLOW- controlled EXpiration. <i>Critical Care</i> , 2014, 18, .	5.8	2
69	Determination of respiratory system mechanics during inspiration and expiration by FLOW-controlled EXpiration (FLEX): a pilot study in anesthetized pigs. <i>Minerva Anestesiologica</i> , 2014, 80, 19-28.	1.0	35
70	Endoscopic Imaging to Assess Alveolar Mechanics During Quasi-static and Dynamic Ventilatory Conditions in Rats With Noninjured and Injured Lungs*. <i>Critical Care Medicine</i> , 2013, 41, 1286-1295.	0.9	5
71	A method to measure mechanical properties of pulmonary epithelial cell layers. , 2013, 101, 1164-1171.		6
72	Mechanical properties of human lung cells after mechanostimulation. <i>Biomedizinische Technik</i> , 2013, 58 Suppl 1, .	0.8	1

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73	Time-frequency analysis of photoplethysmogram for measuring deepness of anesthesia. , 2013, , .		4
74	The shape of intratidal resistance-volume and compliance-volume curves in mechanical ventilation â€” an animal study. Biomedizinische Technik, 2013, 58 Suppl 1, .	0.8	0
75	Analysis of Dynamic Respiratory Mechanics Profits from Breathing-Phase Selective Filtering. Biomedizinische Technik, 2013, 58 Suppl 1, .	0.8	0
76	Flow-controlled expiration discloses PEEP-dependent dynamic hysteresis of the pressure-volume loop. Critical Care, 2012, 16, .	5.8	0
77	A device for ventilation-analogue mechanostimulation in vitro. Critical Care, 2012, 16, .	5.8	0
78	Time-dependent recruitment effects in ventilated healthy and lung-injured rats: â€œRecruitment-memoryâ€ Respiratory Physiology and Neurobiology, 2012, 184, 65-72.	1.6	5
79	Ventilation-analogue mechanostimulation of lung epithelial cells in vitro. Biomedizinische Technik, 2012, 57, .	0.8	0
80	Effects of intra-abdominal pressure on respiratory system mechanics in mechanically ventilated rats. Respiratory Physiology and Neurobiology, 2012, 180, 204-210.	1.6	15
81	A new device for dynamic ventilation-analogue mechanostimulation of pliant tissue layers. Acta of Bioengineering and Biomechanics, 2012, 14, 53-62.	0.4	11
82	Stress-strain relationship in pulmonary cells under bidirectional stretch application. Critical Care, 2011, 15, .	5.8	0
83	Analysis of Dynamic Intratidal Compliance in a Lung Collapse Model. Anesthesiology, 2011, 114, 1111-1117.	2.5	26
84	Cardiogenic oscillations in spontaneous breathing airway signal reflect respiratory system mechanics. Acta Anaesthesiologica Scandinavica, 2011, 55, no-no.	1.6	4
85	In vivo characterization of mechanical tissue properties of internal organs using endoscopic microscopy and inverse finite element analysis. Journal of Biomechanics, 2011, 44, 487-493.	2.1	15
86	Endotracheal tube resistance and inertance in a model of mechanical ventilation of newborns and small infantsâ€”the impact of ventilator settings on tracheal pressure swings. Physiological Measurement, 2011, 32, 1439-1451.	2.1	20
87	Mechanostimulation, electrostimulation and force measurement in an <i>in vitro</i> model of the isolated rat diaphragm. Physiological Measurement, 2011, 32, 1899-1912.	2.1	4
88	Mechanostimulation and Mechanics Analysis of Lung Cells, Lung Tissue and the Entire Lung Organ. Notes on Numerical Fluid Mechanics and Multidisciplinary Design, 2011, , 129-154.	0.3	0
89	Compensating for Endotracheal Tube Resistance. Anesthesia and Analgesia, 2010, 110, 639-640.	2.2	2
90	Biaxial distension of precision-cut lung slices. Journal of Applied Physiology, 2010, 108, 713-721.	2.5	47

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91	Low pulmonary artery flush perfusion pressure combined with high positive end-expiratory pressure reduces oedema formation in isolated porcine lungs. <i>Physiological Measurement</i> , 2010, 31, 261-272.	2.1	11
92	Characteristics of highly flexible PDMS membranes for long-term mechanostimulation of biological tissue. <i>Journal of Biomedical Materials Research - Part B Applied Biomaterials</i> , 2009, 91B, 700-705.	3.4	17
93	Estimating intratidal nonlinearity of respiratory system mechanics: a model study using the enhanced gliding-SLICE method. <i>Physiological Measurement</i> , 2009, 30, 1341-1356.	2.1	500
94	Cardiogenic oscillations extracted from spontaneous breathing airway pressure and flow signal are related to chest wall motility and continuous positive airway pressure. <i>Critical Care</i> , 2009, 13, P7.	5.8	0
95	A new in vitro model for force measurements at the isolated entire rat diaphragm. <i>Critical Care</i> , 2009, 13, P30.	5.8	0
96	Control system for automated titration of positive end-expiratory pressure and tidal volume using dynamic nonlinear compliance as the setpoint. <i>Critical Care</i> , 2009, 13, P43.	5.8	0
97	Success of recruitment maneuvers during pneumoperitoneum is dependent on the intraabdominal pressure. <i>Critical Care</i> , 2009, 13, P46.	5.8	0
98	Development of a system for in vivo optical alveolar elastometry. <i>Critical Care</i> , 2009, 13, P52.	5.8	1
99	Expiratory automatic endotracheal tube compensation reduces dynamic hyperinflation in a physical lung model. <i>Critical Care</i> , 2009, 13, R4.	5.8	11
100	Pressure-dependent stress relaxation in acute respiratory distress syndrome and healthy lungs: an investigation based on a viscoelastic model. <i>Critical Care</i> , 2009, 13, R199.	5.8	29
101	On the separate determination of lung mechanics in in- and expiration. <i>IFMBE Proceedings</i> , 2009, , 2049-2052.	0.3	3
102	Parameter estimation of recruitment models in mechanical ventilation. <i>IFMBE Proceedings</i> , 2009, , 2540-2543.	0.3	0
103	Differences in form stability between human non-tumorous alveolar epithelial cells type 2 and alveolar carcinoma cells under biaxial stretching. <i>IFMBE Proceedings</i> , 2009, , 2027-2030.	0.3	2
104	Cardiogenic oscillations reflect the compliance of the respiratory system. <i>IFMBE Proceedings</i> , 2009, , 2045-2048.	0.3	1
105	Dynamic Videomicroscopy reveals correspondence between mechanical characteristics of lung tissue and local morphology on alveolar scale. <i>IFMBE Proceedings</i> , 2009, , 2023-2026.	0.3	1
106	Fabrication of thin and flexible PDMS membranes for biomechanical test applications. <i>IFMBE Proceedings</i> , 2009, , 2007-2010.	0.3	1
107	Contact-free determination of material characteristics using a newly developed pressure-operated strain-applying bioreactor. <i>Journal of Biomedical Materials Research - Part B Applied Biomaterials</i> , 2008, 86B, 483-492.	3.4	18
108	Respiratory system inertance corresponds to extravascular lung water in surfactant-deficient piglets. <i>Respiratory Physiology and Neurobiology</i> , 2008, 160, 313-319.	1.6	2

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109	Pressure loss caused by pediatric endotracheal tubes during high-frequency-oscillation-ventilation. Respiratory Physiology and Neurobiology, 2008, 162, 132-137.	1.6	8
110	Model based analysis reveals differences in viscoelasticity between acute respiratory distress syndrome and healthy lungs. Critical Care, 2008, 12, P281.	5.8	0
111	Perfusion pressure and positive end-expiratory pressure influence edema formation in isolated porcine lungs. Critical Care, 2008, 12, P286.	5.8	0
112	Lung sound analysis to detect recruitment processes during mechanical ventilation. Critical Care, 2008, 12, P308.	5.8	2
113	Determination of expiratory lung mechanics using cardiogenic oscillations during decelerated expiration. Critical Care, 2008, 12, P310.	5.8	0
114	Cardiogenic oscillations reflect nonlinear lung mechanics. Critical Care, 2008, 12, P311.	5.8	0
115	Passive mechanical properties of rat diaphragms: a new method for analyzing mechanical tissue properties. Critical Care, 2008, 12, P321.	5.8	0
116	Intraluminal measurement probe increases resistance of pediatric endotracheal tubes. Critical Care, 2008, 12, P340.	5.8	0
117	Electrical impedance tomography to confirm correct placement of double-lumen tube: a feasibility study. British Journal of Anaesthesia, 2008, 101, 411-418.	3.4	43
118	Determination of Dynamic Respiratory Mechanics with the Adaptive Slice Method. , 2008, , .		3
119	Determining Alveolar Dynamics by Automatic Tracing of Area Changes Within Microscopy Videos. , 2008, , .		4
120	AUTOPILOT-BT: a system for knowledge and model based mechanical ventilation. Technology and Health Care, 2008, 16, 1-11.	1.2	4
121	Moisturizing and mechanical characteristics of a new counter-flow type heated humidifier. British Journal of Anaesthesia, 2007, 98, 531-538.	3.4	24
122	Detection of partial endotracheal tube obstruction by forced pressure oscillations. Respiratory Physiology and Neurobiology, 2007, 155, 227-233.	1.6	9
123	Primate Area MST-I Is Involved in the Generation of Goal-Directed Eye and Hand Movements. Journal of Neurophysiology, 2007, 97, 761-771.	1.8	31
124	Dynamic versus static respiratory mechanics in acute lung injury and acute respiratory distress syndrome. Critical Care Medicine, 2006, 34, 2090-2098.	0.9	1,217
125	Posterior Parietal Cortex Neurons Encode Target Motion in World-Centered Coordinates. Neuron, 2004, 43, 145-151.	8.1	109