Stefan Schumann

List of Publications by Year
in descending order

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125	3,202	304743	155660
papers	citations	22	55
		h-index	g-index

127	127	127	1439
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	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
2	Estimating intratidal nonlinearity of respiratory system mechanics: a model study using the enhanced gliding-SLICE method. Physiological Measurement, 2009, 30, 1341-1356.	2.1	500
3	Toward Continuous Monitoring of Breath Biochemistry: A Paper-Based Wearable Sensor for Real-Time Hydrogen Peroxide Measurement in Simulated Breath. ACS Sensors, 2019, 4, 2945-2951.	7.8	138
4	Posterior Parietal Cortex Neurons Encode Target Motion in World-Centered Coordinates. Neuron, 2004, 43, 145-151.	8.1	109
5	Double-lumen tubes and auto-PEEP during one-lung ventilation. British Journal of Anaesthesia, 2016, 116, 122-130.	3.4	98
6	Biaxial distension of precision-cut lung slices. Journal of Applied Physiology, 2010, 108, 713-721.	2.5	47
7	Flow-controlled expiration: a novel ventilation mode to attenuate experimental porcine lung injury. British Journal of Anaesthesia, 2014, 113, 474-483.	3.4	47
8	Improved lung recruitment and oxygenation during mandatory ventilation with a new expiratory ventilation assistance device. European Journal of Anaesthesiology, 2018, 35, 736-744.	1.7	45
9	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
10	Flow-Controlled Ventilation Attenuates Lung Injury in a Porcine Model of Acute Respiratory Distress Syndrome. Critical Care Medicine, 2020, 48, e241-e248.	0.9	38
11	Intraoperative positive end-expiratory pressure evaluation using the intratidal compliance-volume profile. British Journal of Anaesthesia, 2015, 114, 483-490.	3.4	35
12	Determination of respiratory system mechanics during inspiration and expiration by FLow-controlled EXpiration (FLEX): a pilot study in anesthetized pigs. Minerva Anestesiologica, 2014, 80, 19-28.	1.0	35
13	Non-invasive high-frequency oscillatory ventilation in preterm infants: a randomised controlled cross-over trial. Archives of Disease in Childhood: Fetal and Neonatal Edition, 2018, 103, F1-F5.	2.8	33
14	Primate Area MST-l Is Involved in the Generation of Goal-Directed Eye and Hand Movements. Journal of Neurophysiology, 2007, 97, 761-771.	1.8	31
15	Claudin-3, claudin-7, and claudin-10 show different distribution patterns during decidualization and trophoblast invasion in mouse and human. Histochemistry and Cell Biology, 2015, 144, 571-585.	1.7	30
16	Increasing positive end-expiratory pressure (re-)improves intraoperative respiratory mechanics and lung ventilation after prone positioning. British Journal of Anaesthesia, 2016, 116, 838-846.	3.4	30
17	Pressure-dependent stress relaxation in acute respiratory distress syndrome and healthy lungs: an investigation based on a viscoelastic model. Critical Care, 2009, 13, R199.	5.8	29
18	Biosensorâ€Enabled Multiplexed Onâ€Site Therapeutic Drug Monitoring of Antibiotics. Advanced Materials, 2022, 34, e2104555.	21.0	29

#	Article	IF	Citations
19	Application of the Novel Ventilation Mode FLow-Controlled EXpiration (FLEX). Anesthesia and Analgesia, 2017, 125, 1246-1252.	2.2	28
20	Flowâ€controlled ventilation improves gas exchange in lungâ€healthy patientsâ€" a randomized interventional crossâ€over study. Acta Anaesthesiologica Scandinavica, 2020, 64, 481-488.	1.6	28
21	Flow-controlled ventilation during ear, nose and throat surgery. European Journal of Anaesthesiology, 2019, 36, 327-334.	1.7	27
22	Analysis of Dynamic Intratidal Compliance in a Lung Collapse Model. Anesthesiology, 2011, 114, 1111-1117.	2.5	26
23	Moisturizing and mechanical characteristics of a new counter-flow type heated humidifier. British Journal of Anaesthesia, 2007, 98, 531-538.	3.4	24
24	Flow-controlled ventilation (FCV) improves regional ventilation in obese patients â€" a randomized controlled crossover trial. BMC Anesthesiology, 2020, 20, 24.	1.8	24
25	Dorsal recruitment with flow-controlled expiration (FLEX): an experimental study in mechanically ventilated lung-healthy and lung-injured pigs. Critical Care, 2018, 22, 245.	5.8	23
26	Assessing Respiratory Function Depends on Mechanical Characteristics of Balloon Catheters. Respiratory Care, 2014, 59, 1345-1352.	1.6	22
27	Clinical on-site monitoring of ÃŸ-lactam antibiotics for a personalized antibiotherapy. Scientific Reports, 2017, 7, 3127.	3.3	22
28	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
29	Leakage in nasal highâ€frequency oscillatory ventilation improves carbon dioxide clearanceâ€"A bench study. Pediatric Pulmonology, 2017, 52, 367-372.	2.0	20
30	Intraoperative compliance profiles and regional lung ventilation improve with increasing positive endâ€expiratory pressure. Acta Anaesthesiologica Scandinavica, 2016, 60, 1241-1250.	1.6	19
31	Contactâ€free determination of material characteristics using a newly developed pressureâ€operated strainâ€applying bioreactor. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2008, 86B, 483-492.	3.4	18
32	Glottic visibility for laryngeal surgery. European Journal of Anaesthesiology, 2019, 36, 963-971.	1.7	18
33	Characteristics of highly flexible PDMS membranes for longâ€term mechanostimulation of biological tissue. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2009, 91B, 700-705.	3.4	17
34	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
35	Effects of intra-abdominal pressure on respiratory system mechanics in mechanically ventilated rats. Respiratory Physiology and Neurobiology, 2012, 180, 204-210.	1.6	15
36	The pressure drop across the endotracheal tube in mechanically ventilated pediatric patients. Paediatric Anaesthesia, 2015, 25, 413-420.	1.1	15

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37	Comparative usability of modern anaesthesia ventilators: a human factors study. British Journal of Anaesthesia, 2017, 119, 1000-1008.	3.4	15
38	Air seal performance of personalized and statistically shaped 3D-printed face masks compared with market-available surgical and FFP2 masks. Scientific Reports, 2021, 11, 19347.	3.3	13
39	Monitoring of intratidal lung mechanics: a Graphical User Interface for a model-based decision support system for PEEP-titration in mechanical ventilation. Journal of Clinical Monitoring and Computing, 2014, 28, 613-623.	1.6	12
40	Intratidal recruitment/derecruitment persists at low and moderate positive end-expiratory pressure in paediatric patients. Respiratory Physiology and Neurobiology, 2016, 234, 9-13.	1.6	12
41	Pneumoperitoneum deteriorates intratidal respiratory system mechanics: an observational study in lung-healthy patients. Surgical Endoscopy and Other Interventional Techniques, 2017, 31, 753-760.	2.4	12
42	Expiratory automatic endotracheal tube compensation reduces dynamic hyperinflation in a physical lung model. Critical Care, 2009, 13, R4.	5.8	11
43	Low pulmonary artery flush perfusion pressure combined with high positive end-expiratory pressure reduces oedema formation in isolated porcine lungs. Physiological Measurement, 2010, 31, 261-272.	2.1	11
44	A new device for dynamic ventilation-analogue mechanostimulation of pliant tissue layers. Acta of Bioengineering and Biomechanics, 2012, 14, 53-62.	0.4	11
45	Compensating Artificial Airway Resistance via Active Expiration Assistance. Respiratory Care, 2016, 61, 1597-1604.	1.6	10
46	Context-sensitive decrement times for inhaled anesthetics in obese patients explored with Gas ManÂ®. Journal of Clinical Monitoring and Computing, 2021, 35, 343-354.	1.6	10
47	Detection of partial endotracheal tube obstruction by forced pressure oscillations. Respiratory Physiology and Neurobiology, 2007, 155, 227-233.	1.6	9
48	Biosensors and personalized drug therapy: what does the future hold?. Expert Review of Precision Medicine and Drug Development, 2017, 2, 303-305.	0.7	9
49	Characterization of Flow-Caused Intrarenal Pressure Conditions During Percutaneous Nephrolithotomy In Vitro. Journal of Endourology, 2019, 33, 235-241.	2.1	9
50	Carbon dioxide diffusion coefficient in noninvasive highâ€frequency oscillatory ventilation. Pediatric Pulmonology, 2019, 54, 759-764.	2.0	9
51	Pressure loss caused by pediatric endotracheal tubes during high-frequency-oscillation-ventilation. Respiratory Physiology and Neurobiology, 2008, 162, 132-137.	1.6	8
52	A method to measure mechanical properties of pulmonary epithelial cell layers. , 2013, 101, 1164-1171.		6
53	Pressureâ€flow characteristics of breathing systems and their components for pediatric and adult patients. Paediatric Anaesthesia, 2018, 28, 37-45.	1.1	6
54	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

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55	Endoscopic Imaging to Assess Alveolar Mechanics During Quasi-static and Dynamic Ventilatory Conditions in Rats With Noninjured and Injured Lungs*. Critical Care Medicine, 2013, 41, 1286-1295.	0.9	5
56	Regional ventilation during phonation in professional male and female singers. Respiratory Physiology and Neurobiology, 2017, 239, 26-33.	1.6	5
57	Ventilation-Like Mechanical Strain Modulates the Inflammatory Response of BEAS2B Epithelial Cells. Oxidative Medicine and Cellular Longevity, 2019, 2019, 1-7.	4.0	5
58	A linearized expiration flow homogenizes the compartmental pressure distribution in a physical model of the inhomogeneous respiratory system. Physiological Measurement, 2020, 41, 045005.	2.1	5
59	Effect of individualized PEEP titration guided by intratidal compliance profile analysis on regional ventilation assessed by electrical impedance tomography â€“ a randomized controlled trial. BMC Anesthesiology, 2020, 20, 42.	1.8	5
60	Determining Alveolar Dynamics by Automatic Tracing of Area Changes Within Microscopy Videos. , 2008, , .		4
61	Cardiogenic oscillations in spontaneous breathing airway signal reflect respiratory system mechanics. Acta Anaesthesiologica Scandinavica, 2011, 55, no-no.	1.6	4
62	Mechanostimulation, electrostimulation and force measurement in anin vitromodel of the isolated rat diaphragm. Physiological Measurement, 2011, 32, 1899-1912.	2.1	4
63	Time-frequency analysis of photoplethysmogram for measuring deepness of anesthesia. , 2013, , .		4
64	Flow Controlled Expiration is perceived as less uncomfortable than positive end expiratory pressure. Respiratory Physiology and Neurobiology, 2014, 202, 59-63.	1.6	4
65	Dislodgement Forces and Cost Effectiveness of Dressings and Securement for Peripheral Intravenous Catheters: A Randomized Controlled Trial. Journal of Clinical Medicine, 2020, 9, 3192.	2.4	4
66	Dependency of respiratory system mechanics on positive endâ€expiratory pressure and recruitment maneuvers in lung healthy pediatric patientsâ€”A randomized crossover study. Paediatric Anaesthesia, 2020, 30, 905-911.	1.1	4
67	AUTOPILOT-BT: a system for knowledge and model based mechanical ventilation. Technology and Health Care, 2008, 16, 1-11.	1.2	4
68	Determination of Dynamic Respiratory Mechanics with the Adaptive Slice Method. , 2008, , .		3
69	Mechanical load and mechanical integrity of lung cells â€“ Experimental mechanostimulation of epithelial cell- and fibroblast-monolayers. Journal of the Mechanical Behavior of Biomedical Materials, 2014, 40, 201-209.	3.1	3
70	Coaxial Tubing Systems Increase Artificial Airway Resistance and Work of Breathing. Respiratory Care, 2017, 62, 1171-1177.	1.6	3
71	Peak airway pressure is lower during pressure-controlled than during manual facemask ventilation for induction of anesthesia in pediatric patientsâ€”a randomized, clinical crossover trial. Journal of Anesthesia, 2019, 33, 33-39.	1.7	3
72	Ultrashort inspiratory times homogenize ventilation distribution in an inhomogeneous twoâ€compartment model of the neonatal lung. Pediatric Pulmonology, 2021, 56, 418-423.	2.0	3

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73	On the separate determination of lung mechanics in in- and expiration. IFMBE Proceedings, 2009, , 2049-2052.	0.3	3
74	Lung area estimation using functional tidal electrical impedance variation images and active contouring. Physiological Measurement, 2022, 43, 075010.	2.1	3
75	Respiratory system inertance corresponds to extravascular lung water in surfactant-deficient piglets. Respiratory Physiology and Neurobiology, 2008, 160, 313-319.	1.6	2
76	Lung sound analysis to detect recruitment processes during mechanical ventilation. Critical Care, 2008, 12, P308.	5.8	2
77	Compensating for Endotracheal Tube Resistance. Anesthesia and Analgesia, 2010, 110, 639-640.	2.2	2
78	Breathing-phase selective filtering of respiratory data improves analysis of dynamic respiratory mechanics. Technology and Health Care, 2014, 22, 717-728.	1.2	2
79	Mechanisms underlying the lung-protective effects of FLow- controlled EXpiration. Critical Care, 2014, 18, .	5.8	2
80	Flow controlled expiration does not impair pedal power during physical exercise on a bicycle ergometer. Respiratory Physiology and Neurobiology, 2020, 271, 103303.	1.6	2
81	Differences in form stability between human non-tumorous alveolar epithelial cells type 2 and alveolar carcinoma cells under biaxial stretching. IFMBE Proceedings, 2009, , 2027-2030.	0.3	2
82	Understanding pediatric ventilation in the operative setting. Part II: Setting perioperative ventilation. Paediatric Anaesthesia, 2022, 32, 247-254.	1.1	2
83	Development of a system for in vivo optical alveolar elastometry. Critical Care, 2009, 13, P52.	5.8	1
84	Mechanical properties of human lung cells after mechanostimulation. Biomedizinische Technik, 2013, 58 Suppl 1, .	0.8	1
85	Simultaneous monitoring of intratidal compliance and resistance in mechanically ventilated piglets: A feasibility study in two different study groups. Respiratory Physiology and Neurobiology, 2015, 219, 36-42.	1.6	1
86	Intratidal Analysis of Intraoperative Respiratory System Mechanics. Anesthesia and Analgesia, 2018, 126, 724-725.	2.2	1
87	Cardiogenic oscillations to detect intratidal derecruitment and overdistension in a porcine model of healthy and atelectatic lungs. British Journal of Anaesthesia, 2018, 121, 928-935.	3.4	1
88	A novel mechanical ventilator providing flow-controlled expiration for small animals. Laboratory Animals, 2020, 54, 568-575.	1.0	1
89	Prediction of expiratory desflurane and sevoflurane concentrations in lung-healthy patients utilizing cardiac output and alveolar ventilation matched pharmacokinetic models. Medicine (United) Tj ETQq1 1 0.784314 rgBT /Ove		
90	Flow-controlled expiration (FLEX) homogenizes pressure distribution in a four compartment physical model of the respiratory system with chest wall compliance. Physiological Measurement, 2021, 42, 07NT01.	2.1	1

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91	Cardiogenic oscillations reflect the compliance of the respiratory system. IFMBE Proceedings, 2009, , 2045-2048.	0.3	1
92	Dynamic Videomicroscopy reveals correspondence between mechanical characteristics of lung tissue and local morphology on alveolar scale. IFMBE Proceedings, 2009, , 2023-2026.	0.3	1
93	Fabrication of thin and flexible PDMS membranes for biomechanical test applications. IFMBE Proceedings, 2009, , 2007-2010.	0.3	1
94	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. Respiratory Research, 2021, 22, 292.	3.6	1
95	Biosensorâ€Enabled Multiplexed Onâ€Site Therapeutic Drug Monitoring of Antibiotics (Adv. Mater.) Tj ETQq1 1 0.784314 rgBT /Overlo	21.0	1
96	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. Pediatric Pulmonology, 2022, 57, 744-753.	2.0	1
97	Profiling Distinctive Inflammatory and Redox Responses to Hydrogen Sulfide in Stretched and Stimulated Lung Cells. Antioxidants, 2022, 11, 1001.	5.1	1
98	Model based analysis reveals differences in viscoelasticity between acute respiratory distress syndrome and healthy lungs. Critical Care, 2008, 12, P281.	5.8	0
99	Perfusion pressure and positive end-expiratory pressure influence edema formation in isolated porcine lungs. Critical Care, 2008, 12, P286.	5.8	0
100	Determination of expiratory lung mechanics using cardiogenic oscillations during decelerated expiration. Critical Care, 2008, 12, P310.	5.8	0
101	Cardiogenic oscillations reflect nonlinear lung mechanics. Critical Care, 2008, 12, P311.	5.8	0
102	Passive mechanical properties of rat diaphragms: a new method for analyzing mechanical tissue properties. Critical Care, 2008, 12, P321.	5.8	0
103	Intraluminal measurement probe increases resistance of pediatric endotracheal tubes. Critical Care, 2008, 12, P340.	5.8	0
104	Cardiogenic oscillations extracted from spontaneous breathing airway pressure and flow signal are related to chest wall motility and continuous positive airway pressure. Critical Care, 2009, 13, P7.	5.8	0
105	A new in vitro model for force measurements at the isolated entire rat diaphragm. Critical Care, 2009, 13, P30.	5.8	0
106	Control system for automated titration of positive end-expiratory pressure and tidal volume using dynamic nonlinear compliance as the setpoint. Critical Care, 2009, 13, P43.	5.8	0
107	Success of recruitment maneuvers during pneumoperitoneum is dependent on the intraabdominal pressure. Critical Care, 2009, 13, P46.	5.8	0
108	Stress-strain relationship in pulmonary cells under bidirectional stretch application. Critical Care, 2011, 15, .	5.8	0

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109	Flow-controlled expiration discloses PEEP-dependent dynamic hysteresis of the pressure-volume loop. Critical Care, 2012, 16, .	5.8	0
110	A device for ventilation-analogue mechanostimulation in vitro. Critical Care, 2012, 16, .	5.8	0
111	Ventilation-analogue mechanostimulation of lung epithelial cells in vitro. Biomedizinische Technik, 2012, 57, .	0.8	0
112	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
113	Analysis of Dynamic Respiratory Mechanics Profits from Breathing-Phase Selective Filtering. Biomedizinische Technik, 2013, 58 Suppl 1, .	0.8	0
114	Demands on a continuing education online-study program for physicians. Critical Care, 2014, 18, .	5.8	0
115	PEEP titration on the basis of intratidal resistance-volume profiles. Critical Care, 2014, 18, .	5.8	0
116	Graphical user interface for visualization of a decision support system for PEEP titration. Critical Care, 2014, 18, .	5.8	0
117	Time-dependent apoptosis induction after spontaneous-breathing or ventilation-analogue experimental mechanostimulation of monolayer lung cell cultures. Critical Care, 2014, 18, .	5.8	0
118	Reply from the authors Individualized ventilatory strategy: ameliorate lung injury while preserving physiology. British Journal of Anaesthesia, 2016, 116, 439-440.	3.4	0
119	Sine ventilation in lung injury models: a new perspective for lung protective ventilation. Scientific Reports, 2020, 10, 11690.	3.3	0
120	Mechanical ventilation restores blood gas homeostasis and diaphragm muscle strength in ketamine/medetomidineâ€anaesthetized rats. Experimental Physiology, 2021, 106, 396-400.	2.0	0
121	Loss of muscular force in isolated rat diaphragms is related to changes in muscle fibre size. Physiological Measurement, 2021, 42, 025003.	2.1	0
122	Parameter estimation of recruitment models in mechanical ventilation. IFMBE Proceedings, 2009, , 2540-2543.	0.3	0
123	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
124	The authors reply:. Critical Care Medicine, 2020, 48, e1360-e1361.	0.9	0
125	Understanding pediatric ventilation in the operative setting. Part I: Physical principles of monitoring in the modern anesthesia workstation. Paediatric Anaesthesia, 2022, 32, 237-246.	1.1	0