

Knut Moeller

List of Publications by Year in descending order

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Version: 2024-02-01

90
papers

2,131
citations

516710

16
h-index

223800

46
g-index

92
all docs

92
docs citations

92
times ranked

697
citing authors

#	ARTICLE	IF	CITATIONS
1	Dynamic versus static respiratory mechanics in acute lung injury and acute respiratory distress syndrome. <i>Critical Care Medicine</i> , 2006, 34, 2090-2098.	0.9	1,217
2	Next-generation, personalised, model-based critical care medicine: a state-of-the art review of in silico virtual patient models, methods, and cohorts, and how to validation them. <i>BioMedical Engineering OnLine</i> , 2018, 17, 24.	2.7	143
3	A review of electrical impedance tomography in lung applications: Theory and algorithms for absolute images. <i>Annual Reviews in Control</i> , 2019, 48, 442-471.	7.9	62
4	Structural-functional lung imaging using a combined CT-EIT and a Discrete Cosine Transformation reconstruction method. <i>Scientific Reports</i> , 2016, 6, 25951.	3.3	47
5	Optimising mechanical ventilation through model-based methods and automation. <i>Annual Reviews in Control</i> , 2019, 48, 369-382.	7.9	47
6	Structural Identifiability and Practical Applicability of an Alveolar Recruitment Model for ARDS Patients. <i>IEEE Transactions on Biomedical Engineering</i> , 2012, 59, 3396-3404.	4.2	46
7	Virtual patients for mechanical ventilation in the intensive care unit. <i>Computer Methods and Programs in Biomedicine</i> , 2021, 199, 105912.	4.7	43
8	Electrical impedance tomography: functional lung imaging on its way to clinical practice?. <i>Expert Review of Respiratory Medicine</i> , 2015, 9, 721-737.	2.5	41
9	Predictive Virtual Patient Modelling of Mechanical Ventilation: Impact of Recruitment Function. <i>Annals of Biomedical Engineering</i> , 2019, 47, 1626-1641.	2.5	41
10	PEEP guided by electrical impedance tomography during one-lung ventilation in elderly patients undergoing thoracoscopic surgery. <i>Annals of Translational Medicine</i> , 2019, 7, 757-757.	1.7	23
11	Higher order total variation regularization for EIT reconstruction. <i>Medical and Biological Engineering and Computing</i> , 2018, 56, 1367-1378.	2.8	22
12	Prediction of lung mechanics throughout recruitment maneuvers in pressure-controlled ventilation. <i>Computer Methods and Programs in Biomedicine</i> , 2020, 197, 105696.	4.7	22
13	Model-based PEEP titration versus standard practice in mechanical ventilation: a randomised controlled trial. <i>Trials</i> , 2020, 21, 130.	1.6	22
14	When the value of gold is zero. <i>BMC Research Notes</i> , 2014, 7, 404.	1.4	21
15	Reformulation of the pressure-dependent recruitment model (PRM) of respiratory mechanics. <i>Biomedical Signal Processing and Control</i> , 2014, 12, 47-53.	5.7	19
16	Digital Twins in Critical Care: What, When, How, Where, Why?. <i>IFAC-PapersOnLine</i> , 2021, 54, 310-315.	0.9	18
17	Physiological relevance and performance of a minimal lung model – an experimental study in healthy and acute respiratory distress syndrome model piglets. <i>BMC Pulmonary Medicine</i> , 2012, 12, 59.	2.0	17
18	Sparse regularization for EIT reconstruction incorporating structural information derived from medical imaging. <i>Physiological Measurement</i> , 2016, 37, 843-862.	2.1	16

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19	Multi-layer ventilation inhomogeneity in cystic fibrosis. <i>Respiratory Physiology and Neurobiology</i> , 2016, 233, 25-32.	1.6	16
20	Influence of tidal volume and positive end-expiratory pressure on ventilation distribution and oxygenation during one-lung ventilation. <i>Physiological Measurement</i> , 2018, 39, 034003.	2.1	15
21	Prediction and estimation of pulmonary response and elastance evolution for volume-controlled and pressure-controlled ventilation. <i>Biomedical Signal Processing and Control</i> , 2022, 72, 103367.	5.7	14
22	Using multi-dimensional dynamic time warping for TUG test instrumentation with inertial sensors. , 2012, , .		13
23	Over-distension prediction via hysteresis loop analysis and patient-specific basis functions in a virtual patient model. <i>Computers in Biology and Medicine</i> , 2022, 141, 105022.	7.0	13
24	A fast time-difference inverse solver for 3D EIT with application to lung imaging. <i>Medical and Biological Engineering and Computing</i> , 2016, 54, 1243-1255.	2.8	11
25	An accelerated version of alternating direction method of multipliers for TV minimization in EIT. <i>Applied Mathematical Modelling</i> , 2016, 40, 8985-9000.	4.2	11
26	The influence of an electrical impedance tomography belt on lung function determined by spirometry in sitting position. <i>Physiological Measurement</i> , 2020, 41, 044002.	2.1	11
27	Utility of a novel error-stepping method to improve gradient-based parameter identification by increasing the smoothness of the local objective surface: A case-study of pulmonary mechanics. <i>Computer Methods and Programs in Biomedicine</i> , 2014, 114, e70-e78.	4.7	10
28	Performance of variations of the dynamic elastance model in lung mechanics. <i>Control Engineering Practice</i> , 2017, 58, 262-267.	5.5	10
29	Measurement of respiratory rate with inertial measurement units. <i>Current Directions in Biomedical Engineering</i> , 2020, 6, 237-240.	0.4	10
30	Sampling of finite elements for sparse recovery in large scale 3D electrical impedance tomography. <i>Physiological Measurement</i> , 2015, 36, 43-66.	2.1	9
31	Lobe based image reconstruction in Electrical Impedance Tomography. <i>Medical Physics</i> , 2017, 44, 426-436.	3.0	9
32	Developments in Modelling Bone Screwing. <i>Current Directions in Biomedical Engineering</i> , 2020, 6, 111-114.	0.4	9
33	EIT based pulsatile impedance monitoring during spontaneous breathing in cystic fibrosis. <i>Physiological Measurement</i> , 2017, 38, 1214-1225.	2.1	8
34	Reconstructing asynchrony for mechanical ventilation using a hysteresis loop virtual patient model. <i>BioMedical Engineering OnLine</i> , 2022, 21, 16.	2.7	8
35	Evaluation of open-source software for the lung segmentation. <i>Current Directions in Biomedical Engineering</i> , 2016, 2, 515-518.	0.4	7
36	Effect of the number of electrodes on the reconstructed lung shape in electrical impedance tomography. <i>Current Directions in Biomedical Engineering</i> , 2016, 2, 499-502.	0.4	7

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37	EIT Imaging Regularization Based on Spectral Graph Wavelets. IEEE Transactions on Medical Imaging, 2017, 36, 1832-1844.	8.9	7
38	Inspiratory muscle training can be monitored by electrical impedance tomography. Australian Critical Care, 2019, 32, 79-80.	1.3	6
39	A Deep Learning Framework for Recognising Surgical Phases in Laparoscopic Videos. IFAC-PapersOnLine, 2021, 54, 334-339.	0.9	6
40	Image acquisition and planimetry systems to develop wounding techniques in 3D wound model. Current Directions in Biomedical Engineering, 2017, 3, 359-362.	0.4	5
41	Determination of regional lung function in cystic fibrosis using electrical impedance tomography. Current Directions in Biomedical Engineering, 2016, 2, 633-636.	0.4	4
42	The dynamics of carbon dioxide equilibration after alterations in the respiratory rate. Physiological Measurement, 2013, 34, 1151-1161.	2.1	3
43	Reconstruction of conductivity change in lung lobes utilizing electrical impedance tomography. Current Directions in Biomedical Engineering, 2017, 3, 513-516.	0.4	3
44	Comparison of Image Reconstruction Algorithms in EIT Imaging. Journal of Biomedical Science and Engineering, 2016, 09, 137-142.	0.4	3
45	Minimal Lung Mechanics Basis-functions for a Mechanical Ventilation Virtual Patient. IFAC-PapersOnLine, 2021, 54, 127-132.	0.9	3
46	Automatic segmentation of collapsed lung regions in thorax CT. Biomedizinische Technik, 2012, 57, .	0.8	2
47	Project-oriented studying to support medical engineering education. , 2013, , .		2
48	Realization of a multi-layer EIT-system. Current Directions in Biomedical Engineering, 2017, 3, 291-294.	0.4	2
49	Impact of lung volume changes on perfusion estimates derived by Electrical Impedance Tomography. Current Directions in Biomedical Engineering, 2019, 5, 199-202.	0.4	2
50	Virtual Patient Modeling and Prediction Validation for Pressure Controlled Mechanical Ventilation. IFAC-PapersOnLine, 2020, 53, 16221-16226.	0.9	2
51	An Alternative Way to Measure Tidal Volumes. IFMBE Proceedings, 2021, , 66-72.	0.3	2
52	Nonlinearity of Magnetostrictive Torque Sensor under Varying External Magnetic Field Strength. Current Directions in Biomedical Engineering, 2021, 7, 759-762.	0.4	2
53	Sequential versus concurrent computation of complex model systems for medical decision support. , 2011, 2011, 133-6.		1
54	Inverse modeling supports quantification of pressure and time depending effects in ARDS patients. , 2011, 2011, 1013-6.		1

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55	Concept study of a nonlinear mechanical lung simulator. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2012, 45, 149-153.	0.4	1
56	Ventilation inhomogeneity in patients with cystic fibrosis measured by electrical impedance tomography. Biomedizinische Technik, 2012, 57, .	0.8	1
57	A clustering based dual model framework for EIT imaging: first experimental results. Current Directions in Biomedical Engineering, 2015, 1, 278-282.	0.4	1
58	Steps towards 3D Electrical Impedance Tomography. , 2015, 2015, 5323-6.		1
59	Mobility Support System for Elderly Blind People with a Smart Walker and a Tactile Map. IFMBE Proceedings, 2016, , 608-613.	0.3	1
60	Impact of Heart Rate on Ventilation and Pulmonary Perfusion Associated Impedance Changes. IFMBE Proceedings, 2016, , 1270-1275.	0.3	1
61	An efficient classification-reconstruction method for 3D EIT imaging. IFAC-PapersOnLine, 2018, 51, 36-40.	0.9	1
62	Model of SpO2 signal of the neonate. Current Directions in Biomedical Engineering, 2019, 5, 549-552.	0.4	1
63	Computer model of oxygenation in neonates. Current Directions in Biomedical Engineering, 2019, 5, 73-76.	0.4	1
64	Fabrication And Evaluation Of Simple Tissue-Mimicking Phantoms For Electrical Impedance Sensing. , 2021, , .		1
65	High Inter-Patient Variability in Sepsis Evolution: A Hidden Markov Model Analysis. Computer Methods and Programs in Biomedicine, 2021, 201, 105956.	4.7	1
66	Numerical Analysis of the Localization of Pulmonary Nodules during Thoracoscopic Surgery by Ultra-Wideband Radio Technology. Applied Sciences (Switzerland), 2021, 11, 4282.	2.5	1
67	Predicting Pulmonary Distension in a Virtual Patient Model for Mechanical Ventilation. IFAC-PapersOnLine, 2021, 54, 91-96.	0.9	1
68	Identification of Asynchronous Effect via Pressure-Volume Loop Reconstruction in Mechanically Ventilated Breathing Waveforms. IFAC-PapersOnLine, 2021, 54, 186-191.	0.9	1
69	EIT Based Time Constant Analysis to Determine Different Types of Patients in COVID-19 Pneumonia. IFMBE Proceedings, 2021, , 462-469.	0.3	1
70	Traditional versus Neural Network Classification Methods for Facial Emotion Recognition. Current Directions in Biomedical Engineering, 2021, 7, 203-206.	0.4	1
71	Real-Time Multirate Filtering of Digitized Torque Signals on Tiva Microcontroller using Fixed-Point Design with MATLAB. Current Directions in Biomedical Engineering, 2021, 7, 717-720.	0.4	1
72	Time course of etCO ₂ response to alterations in respiration rate predicted by a mathematical model of human gas exchange. , 2011, , .		0

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73	Physiological Relevance of a Minimal Model in Healthy Pigs Lung. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2012, 45, 444-449.	0.4	0
74	EIT image reconstruction with individual thorax geometry. IFAC Postprint Volumes IPPV / International Federation of Automatic Control, 2012, 45, 103-106.	0.4	0
75	Individual thorax geometry improves EIT image reconstruction. Biomedizinische Technik, 2012, 57, .	0.8	0
76	Improving image quality in EIT imaging by measurement of thorax excursion. Current Directions in Biomedical Engineering, 2015, 1, 274-277.	0.4	0
77	Automatic determination of lung features of CF patients in CT scans. Current Directions in Biomedical Engineering, 2016, 2, 519-522.	0.4	0
78	Regularization of EIT reconstruction based on multi-scales wavelet transforms. Current Directions in Biomedical Engineering, 2016, 2, 423-426.	0.4	0
79	EIT Image Reconstruction with Discrete Cosine Transform. IFMBE Proceedings, 2016, , 1276-1279.	0.3	0
80	Hierarchical Analysis of Thorax Models to Measure Tidal Volume. Current Directions in Biomedical Engineering, 2018, 4, 429-432.	0.4	0
81	Technical Support of Wound Healing Processes: Project Status. Current Directions in Biomedical Engineering, 2019, 5, 521-523.	0.4	0
82	Establishment and initial characterization of a simple 3D wound healing model. Current Directions in Biomedical Engineering, 2019, 5, 581-584.	0.4	0
83	Quantifying misclassification and bias errors due to hierarchical sepsis scores in real-time sepsis diagnosis. Biomedical Signal Processing and Control, 2020, 62, 102116.	5.7	0
84	A Mathematical Model of Gas Exchange Predicting CO ₂ Response to Respiratory Rate Changes. , 2011, , .		0
85	Impact of Two Lung Elastance Identification Methods on Pulmonary Mechanics Prediction. IFAC-PapersOnLine, 2021, 54, 97-102.	0.9	0
86	Antenna Design for the Localization of Pulmonary Lesions During Thoracoscopic Surgery. IFAC-PapersOnLine, 2021, 54, 73-78.	0.9	0
87	An alternative way to measure total lung capacity: a pilot study. Current Directions in Biomedical Engineering, 2020, 6, 241-245.	0.4	0
88	EIT based intrathoracic pulsatile impedance measurements during apnea: a case study. Current Directions in Biomedical Engineering, 2020, 6, 52-55.	0.4	0
89	Impact of artificial airway resistances on regional ventilation distribution during airway closure. Current Directions in Biomedical Engineering, 2020, 6, 32-35.	0.4	0
90	Statistical Description of SaO ₂ –SpO ₂ Relationship for Model of Oxygenation in Premature Infants. Electronics (Switzerland), 2022, 11, 1314.	3.1	0