Mark E Rentschler

List of Publications by Year
in descending order

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104	1,826	236925	330143
papers	citations	25 h-index	37 g-index

104	104	104	1296
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Natural orifice surgery with an endoluminal mobile robot. Surgical Endoscopy and Other Interventional Techniques, 2007, 21, 1212-1215.	2.4	82
2	Mobile in vivo camera robots provide sole visual feedback for abdominal exploration and cholecystectomy. Surgical Endoscopy and Other Interventional Techniques, 2006, 20, 135-138.	2.4	74
3	Surgery with cooperative robots. Computer Aided Surgery, 2008, 13, 95-105.	1.8	71
4	Surgical evaluation of a novel tethered robotic capsule endoscope using micro-patterned treads. Surgical Endoscopy and Other Interventional Techniques, 2012, 26, 2862-2869.	2.4	70
5	Vision and Task Assistance Using Modular Wireless In Vivo Surgical Robots. IEEE Transactions on Biomedical Engineering, 2009, 56, 1700-1710.	4.2	66
6	Wireless Tissue Palpation for Intraoperative Detection of Lumps in the Soft Tissue. IEEE Transactions on Biomedical Engineering, 2014, 61, 353-361.	4.2	64
7	Magnetically driven medical devices: a review. Expert Review of Medical Devices, 2015, 12, 737-752.	2.8	56
8	Modeling, Analysis, and Experimental Study of In Vivo Wheeled Robotic Mobility. IEEE Transactions on Robotics, 2006, 22, 308-321.	10.3	53
9	A quantitative comparison of soft tissue compressive viscoelastic model accuracy. Journal of the Mechanical Behavior of Biomedical Materials, 2013, 20, 126-136.	3.1	51
10	Miniature robots can assist in Laparoscopic cholecystectomy. Surgical Endoscopy and Other Interventional Techniques, 2005, 19, 473-476.	2.4	48
11	The role of prototypes in communication between stakeholders. Design Studies, 2020, 66, 1-34.	3.1	46
12	Preliminary Mechanical Characterization of the Small Bowel for In Vivo Robotic Mobility. Journal of Biomechanical Engineering, 2011, 133, 091010.	1.3	45
13	Frictional resistance model for tissue-capsule endoscope sliding contact in the gastrointestinal tract. Tribology International, 2016, 102, 472-484.	5.9	42
14	Design, modeling and control of a SMA-actuated biomimetic robot with novel functional skin. , 2017, , .		40
15	Single-Port-Access Surgery with a Novel Magnet Camera System. IEEE Transactions on Biomedical Engineering, 2012, 59, 1187-1193.	4.2	39
16	An In Vivo Mobile Robot for Surgical Vision and Task Assistance. Journal of Medical Devices, Transactions of the ASME, 2007, 1, 23-29.	0.7	36
17	A new 3-dimensional method for measuring precision in surgical navigation and methods to optimize navigation accuracy. European Spine Journal, 2016, 25, 1764-1774.	2.2	36
18	SRAL: Shared Representative Appearance Learning for Long-Term Visual Place Recognition. IEEE Robotics and Automation Letters, 2017, 2, 1172-1179.	5.1	36

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19	Novel Optimization-Based Design and Surgical Evaluation of a Treaded Robotic Capsule Colonoscope. IEEE Transactions on Robotics, 2020, 36, 545-552.	10.3	34
20	The current state of miniature in vivo laparoscopic robotics. Journal of Robotic Surgery, 2007, 1, 45-49.	1.8	33
21	System Identification of Open-Loop Maneuvers Leads to Improved AUV Flight Performance. IEEE Journal of Oceanic Engineering, 2006, 31, 200-208.	3.8	30
22	Recent in vivo surgical robot and mechanism developments. Surgical Endoscopy and Other Interventional Techniques, 2007, 21, 1477-1481.	2.4	28
23	Miniature in vivo Robots for Remote and Harsh Environments. IEEE Transactions on Information Technology in Biomedicine, 2008, 12, 66-75.	3.2	28
24	Small intestine mucosal adhesivity to in vivo capsule robot materials. Journal of the Mechanical Behavior of Biomedical Materials, 2012, 15, 24-32.	3.1	28
25	Mechanical Design of Robotic In Vivo Wheeled Mobility. Journal of Mechanical Design, Transactions of the ASME, 2007, 129, 1037-1045.	2.9	27
26	Delamination of a rigid punch from an elastic substrate under normal and shear forces. Journal of the Mechanics and Physics of Solids, 2019, 122, 141-160.	4.8	27
27	Energy-Based Tissue Fusion for Sutureless Closure: Applications, Mechanisms, and Potential for Functional Recovery. Annual Review of Biomedical Engineering, 2018, 20, 1-20.	12.3	26
28	Micropatterned Treads for In Vivo Robotic Mobility. Journal of Medical Devices, Transactions of the ASME, 2010, 4, .	0.7	23
29	Pharmacological Approaches to Prevent Abdominal Aortic Aneurysm Enlargement and Rupture. Annals of the New York Academy of Sciences, 2006, 1085, 39-46.	3.8	20
30	Microrobot Assisted Laparoscopic Urological Surgery in a Canine Model. Journal of Urology, 2008, 180, 2202-2205.	0.4	20
31	An Automated Traction Measurement Platform and Empirical Model for Evaluation of Rolling Micropatterned Wheels. IEEE/ASME Transactions on Mechatronics, 2015, 20, 1854-1862.	5.8	19
32	Miniaturized Circuitry for Capacitive Self-Sensing and Closed-Loop Control of Soft Electrostatic Transducers. Soft Robotics, 2021, 8, 673-686.	8.0	19
33	Endoluminal minirobots for transgastric peritoneoscopy. Minimally Invasive Therapy and Allied Technologies, 2006, 15, 384-388.	1.2	18
34	Wireless tissue palpation: Proof of concept for a single degree of freedom. , 2013, , .		18
35	Evaluating temperature and duration in arterial tissue fusion to maximize bond strength. Journal of the Mechanical Behavior of Biomedical Materials, 2014, 30, 41-49.	3.1	18
36	Temperature Measurement Methods During Direct Heat Arterial Tissue Fusion. IEEE Transactions on Biomedical Engineering, 2013, 60, 2552-2558.	4.2	17

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37	Measurements of the contact force from myenteric contractions on a solid bolus. Journal of Robotic Surgery, 2013, 7, 53-57.	1.8	17
38	Identification and Control of a Nonlinear Soft Actuator and Sensor System. IEEE Robotics and Automation Letters, 2020, 5, 3783-3790.	5.1	17
39	A Real-Time State Dependent Region Estimator for Autonomous Endoscope Navigation. IEEE Transactions on Robotics, 2021, 37, 918-934.	10.3	17
40	A tribological investigation of the small bowel lumen surface. Tribology International, 2013, 62, 171-176.	5.9	16
41	Integrating a novel shape memory polymer into surgical meshes decreases placement time in laparoscopic surgery: An in vitro and acute in vivo study. Journal of Biomedical Materials Research - Part A, 2013, 101A, 2613-2620.	4.0	16
42	A Platform for Developing Robotic Navigation Strategies in a Deformable, Dynamic Environment. IEEE Robotics and Automation Letters, 2018, 3, 2670-2677.	5.1	16
43	Towards autonomous motion control in minimally invasive robotic surgery. Expert Review of Medical Devices, 2016, 13, 741-748.	2.8	15
44	Characterizing Adhesion between a Micropatterned Surface and a Soft Synthetic Tissue. Langmuir, 2017, 33, 854-864.	3.5	15
45	In vivo laparoscopic robotics. International Journal of Surgery, 2006, 4, 167-171.	2.7	14
46	An Integrated Port Camera and Display System for Laparoscopy. IEEE Transactions on Biomedical Engineering, 2010, 57, 1191-1197.	4.2	14
47	Preliminary Friction Force Measurements on Small Bowel Lumen When Eliminating Sled Edge Effects. Tribology Letters, 2013, 51, 377-383.	2.6	14
48	In vivo robots for laparoscopic surgery. Studies in Health Technology and Informatics, 2004, 98, 316-22.	0.3	14
49	Mobile in vivo biopsy and camera robot. Studies in Health Technology and Informatics, 2006, 119, 449-54.	0.3	14
50	Characterization and Experimental Results of a Novel Sensor for Measuring the Contact Force From Myenteric Contractions. IEEE Transactions on Biomedical Engineering, 2012, 59, 1971-1977.	4.2	12
51	Biocompatibility and tissue integration of a novel shape memory surgical mesh for ventral hernia: In vivo animal studies. Journal of Biomedical Materials Research - Part B Applied Biomaterials, 2014, 102, 1093-1100.	3.4	12
52	Autonomous Localization, Navigation and Haustral Fold Detection for Robotic Endoscopy. , 2018, , .		12
53	Enabling Autonomous Colonoscopy Intervention Using a Robotic Endoscope Platform. IEEE Transactions on Biomedical Engineering, 2021, 68, 1957-1968.	4.2	12
54	Surgery with cooperative robots. Computer Aided Surgery, 2008, 13, 95-105.	1.8	12

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55	The Design and Characterization of a Testing Platform for Quantitative Evaluation of Tread Performance on Multiple Biological Substrates. IEEE Transactions on Biomedical Engineering, 2012, 59, 2524-2530.	4.2	11
56	Soft material adhesion characterization for in vivo locomotion of robotic capsule endoscopes: Experimental and modeling results. Journal of the Mechanical Behavior of Biomedical Materials, 2014, 39, 257-269.	3.1	11
57	A Modular Endoscopy Simulation Apparatus (MESA) for Robotic Medical Device Sensing and Control Validation. IEEE Robotics and Automation Letters, 2018, 3, 4054-4061.	5.1	11
58	In vivo camera robots provide improved vision for laparoscopic surgery. International Congress Series, 2004, 1268, 787-792.	0.2	9
59	A Novel Parameter for Predicting Arterial Fusion and Cutting in Finite Element Models. Annals of Biomedical Engineering, 2016, 44, 3295-3306.	2.5	9
60	Three-Dimensional Microscale Imaging and Measurement of Soft Material Contact Interfaces under Quasi-Static Normal Indentation and Shear. Langmuir, 2019, 35, 10725-10733.	3.5	9
61	Electro-Hydraulic Rolling Soft Wheel: Design, Hybrid Dynamic Modeling, and Model Predictive Control. IEEE Transactions on Robotics, 2022, 38, 3044-3063.	10.3	8
62	Tissue fusion bursting pressure and the role of tissue water content. Proceedings of SPIE, 2013, , .	0.8	7
63	A preconditioning protocol and biaxial mechanical measurement of the small intestine. International Journal of Experimental and Computational Biomechanics, 2014, 2, 293.	0.4	7
64	Tissue storage ex vivo significantly increases vascular fusion bursting pressure. Surgical Endoscopy and Other Interventional Techniques, 2015, 29, 1999-2005.	2.4	6
65	A representative volume element model for the adhesion between a micro-pillared surface and a compliant substrate. Mechanics of Materials, 2018, 119, 65-73.	3.2	6
66	Towards an in vivo wireless mobile robot for surgical assistance. Studies in Health Technology and Informatics, 2008, 132, 153-8.	0.3	6
67	In Vivo Robotic Laparoscopy. Surgical Innovation, 2005, 12, 177-181.	0.9	5
68	Medical Therapy Approach for Treating Abdominal Aortic Aneurysm. Vascular, 2007, 15, 361-365.	0.9	5
69	Screening Aortic Drug Treatments Through Arterial Compliance Measurements. Current Vascular Pharmacology, 2008, 6, 250-257.	1.7	5
70	A quasi-static model of wheelâ€“tissue interaction for surgical robotics. Medical Engineering and Physics, 2013, 35, 1368-1376.	1.7	5
71	Tissue Bond Strength as a Function of Applied Fusion Pressure1. Journal of Medical Devices, Transactions of the ASME, 2014, 8, .	0.7	5
72	Strength and Persistence of Energy-Based Vessel Seals Rely on Tissue Water and Glycosaminoglycan Content. Annals of Biomedical Engineering, 2016, 44, 3421-3431.	2.5	5

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73	The development of a material model and wheelâ€“tissue interaction for simulating wheeled surgical robot mobility. Computer Methods in Biomechanics and Biomedical Engineering, 2009, 12, 239-248.	1.6	4
74	Intestinal Manometry Force Sensor for Robotic Capsule Endoscopy: An Acute, Multipatient In vivo Animal and Human Study. IEEE Transactions on Biomedical Engineering, 2016, 63, 943-951.	4.2	4
75	Friction between a plane strain circular indenter and a thick poroelastic substrate. Mechanics of Materials, 2020, 142, 103303.	3.2	4
76	Sensor for Measuring the Contact Force From Human Myenteric Contractions for In Vivo Robotic Capsule Endoscope Mobility. Journal of Medical Devices, Transactions of the ASME, 2013, 7, .	0.7	4
77	Design and Evaluation of a Computer-Controlled Pressure Algometer. Journal of Medical Devices, Transactions of the ASME, 2011, 5, .	0.7	3
78	Single Port Access Surgery With a Novel Port Camera System. Surgical Innovation, 2012, 19, 123-129.	0.9	3
79	Preliminary experimental results and modeling for a four degree of freedom automated traction measurement platform for quantitative evaluation of in vivo robotic capsule colonoscopy mobility effectiveness. , 2013, , .		3
80	Bond Strength of Thermally Fused Vascular Tissue Varies With Apposition Force. Journal of Biomechanical Engineering, 2015, 137, 121010.	1.3	3
81	Patterned enteroscopy balloon design factors influence tissue anchoring. Journal of the Mechanical Behavior of Biomedical Materials, 2020, 111, 103966.	3.1	3
82	A Computational Model for Predicting the Effect of Tire Configuration on Asphaltic Pavement Life. Road Materials and Pavement Design, 2008, 9, 271-289.	4.0	3
83	Measurement of Bond Strength of Direct Heat Tissue Fusion in Arteries. , 2012, , .		2
84	Comparing Visual Odometry Systems in Actively Deforming Simulated Colon Environments. , 2020, , .		2
85	Toward in vivo mobility. Studies in Health Technology and Informatics, 2005, 111, 397-403.	0.3	2
86	A Tribometric Device for the Rolling Contact of Soft Elastomers. Tribology Letters, 2022, 70, 1.	2.6	2
87	Local lateral contact governs shear traction of micropatterned surfaces on hydrogel substrates. Science Advances, 2022, 8, .	10.3	2
88	Preliminary In Vivo Capsule Crawler Mobility. , 2010, , .		1
89	Preliminary Mechanical Characterization of the Small Bowel for In Vivo Mobility. , 2010, , .		1
90	Uniaxial Wireless Tissue Palpation Device for Minimally Invasive Surgery. Journal of Medical Devices, Transactions of the ASME, 2013, 7, .	0.7	1

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91	Positioning Performance of Power and Manual Drivers in Posterior Spinal Fusion Procedures. Applied Bionics and Biomechanics, 2017, 2017, 1-9.	1.1	1
92	Nonlinear Dynamic Modeling of a Robotic Endoscopy Platform on Synthetic Tissue Substrates. Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME, 2021, 143, .	1.6	1
93	In Vivo Wheeled Robots for Tele-Surgery During Long-Term Space Flight. , 2006, , .		0
94	Modular Wireless Wheeled In Vivo Surgical Robots. , 2008, , .		0
95	A Laparoscopic Camera-Enabled Cannula Port. , 2009, , .		0
96	An Improved Splint Design for Boutonniere Deformity. , 2009, , .		0
97	Design and Preliminary Evaluation of a Novel Brace for Boutonniere Deformity. Journal of Medical Devices, Transactions of the ASME, 2010, 4, .	0.7	0
98	Analysis of Wheel-Tissue Interaction for In Vivo Robotic Mobility. , 2010, , .		0
99	Initial Design and Evaluation of a Pediatric Intra-Cardiac Camera System for Ventricular Septal Defects. Journal of Medical Devices, Transactions of the ASME, 2012, 6, .	0.7	0
100	The role of glycosaminoglycans in tissue adhesion during energy-based vessel sealing. , 2015, , .		0
101	A novel parameter for predicting arterial fusion and ablation in finite element models. , 2015, , .		0
102	Benchtop Testing of a Novel Robotic Capsule With Differential Drive Capabilities1. Journal of Medical Devices, Transactions of the ASME, 2015, 9, .	0.7	0
103	Preliminary Murine Aortic Tissue Material Properties From Pressure-Diameter Experiments. , 2007, , .		0
104	Initial Design and Evaluation of an Intra-Cardiac Camera System for Ventricular Septal Defects. , 2010, , .		0