

Mark E Rentschler

List of Publications by Year in descending order

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104
papers

1,826
citations

236925

25
h-index

330143

37
g-index

104
all docs

104
docs citations

104
times ranked

1296
citing authors

#	ARTICLE	IF	CITATIONS
1	A Tribometric Device for the Rolling Contact of Soft Elastomers. Tribology Letters, 2022, 70, 1.	2.6	2
2	Electro-Hydraulic Rolling Soft Wheel: Design, Hybrid Dynamic Modeling, and Model Predictive Control. IEEE Transactions on Robotics, 2022, 38, 3044-3063.	10.3	8
3	Local lateral contact governs shear traction of micropatterned surfaces on hydrogel substrates. Science Advances, 2022, 8, .	10.3	2
4	Miniaturized Circuitry for Capacitive Self-Sensing and Closed-Loop Control of Soft Electrostatic Transducers. Soft Robotics, 2021, 8, 673-686.	8.0	19
5	A Real-Time State Dependent Region Estimator for Autonomous Endoscope Navigation. IEEE Transactions on Robotics, 2021, 37, 918-934.	10.3	17
6	Enabling Autonomous Colonoscopy Intervention Using a Robotic Endoscope Platform. IEEE Transactions on Biomedical Engineering, 2021, 68, 1957-1968.	4.2	12
7	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
8	Novel Optimization-Based Design and Surgical Evaluation of a Treaded Robotic Capsule Colonoscope. IEEE Transactions on Robotics, 2020, 36, 545-552.	10.3	34
9	Friction between a plane strain circular indenter and a thick poroelastic substrate. Mechanics of Materials, 2020, 142, 103303.	3.2	4
10	Patterned enteroscopy balloon design factors influence tissue anchoring. Journal of the Mechanical Behavior of Biomedical Materials, 2020, 111, 103966.	3.1	3
11	Identification and Control of a Nonlinear Soft Actuator and Sensor System. IEEE Robotics and Automation Letters, 2020, 5, 3783-3790.	5.1	17
12	The role of prototypes in communication between stakeholders. Design Studies, 2020, 66, 1-34.	3.1	46
13	Comparing Visual Odometry Systems in Actively Deforming Simulated Colon Environments. , 2020, , .		2
14	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
15	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
16	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
17	Autonomous Localization, Navigation and Haustral Fold Detection for Robotic Endoscopy. , 2018, , .		12
18	A Platform for Developing Robotic Navigation Strategies in a Deformable, Dynamic Environment. IEEE Robotics and Automation Letters, 2018, 3, 2670-2677.	5.1	16

#	ARTICLE	IF	CITATIONS
19	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
20	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
21	Characterizing Adhesion between a Micropatterned Surface and a Soft Synthetic Tissue. Langmuir, 2017, 33, 854-864.	3.5	15
22	SRAL: Shared Representative Appearance Learning for Long-Term Visual Place Recognition. IEEE Robotics and Automation Letters, 2017, 2, 1172-1179.	5.1	36
23	Positioning Performance of Power and Manual Drivers in Posterior Spinal Fusion Procedures. Applied Bionics and Biomechanics, 2017, 2017, 1-9.	1.1	1
24	Design, modeling and control of a SMA-actuated biomimetic robot with novel functional skin. , 2017, , .		40
25	Towards autonomous motion control in minimally invasive robotic surgery. Expert Review of Medical Devices, 2016, 13, 741-748.	2.8	15
26	A Novel Parameter for Predicting Arterial Fusion and Cutting in Finite Element Models. Annals of Biomedical Engineering, 2016, 44, 3295-3306.	2.5	9
27	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
28	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
29	Frictional resistance model for tissue-capsule endoscope sliding contact in the gastrointestinal tract. Tribology International, 2016, 102, 472-484.	5.9	42
30	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
31	The role of glycosaminoglycans in tissue adhesion during energy-based vessel sealing. , 2015, , .		0
32	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
33	A novel parameter for predicting arterial fusion and ablation in finite element models. , 2015, , .		0
34	Benchmark Testing of a Novel Robotic Capsule With Differential Drive Capabilities1. Journal of Medical Devices, Transactions of the ASME, 2015, 9, .	0.7	0
35	Bond Strength of Thermally Fused Vascular Tissue Varies With Apposition Force. Journal of Biomechanical Engineering, 2015, 137, 121010.	1.3	3
36	Tissue storage ex vivo significantly increases vascular fusion bursting pressure. Surgical Endoscopy and Other Interventional Techniques, 2015, 29, 1999-2005.	2.4	6

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37	Magnetically driven medical devices: a review. <i>Expert Review of Medical Devices</i> , 2015, 12, 737-752.	2.8	56
38	A preconditioning protocol and biaxial mechanical measurement of the small intestine. <i>International Journal of Experimental and Computational Biomechanics</i> , 2014, 2, 293.	0.4	7
39	Tissue Bond Strength as a Function of Applied Fusion Pressure ¹ . <i>Journal of Medical Devices, Transactions of the ASME</i> , 2014, 8, .	0.7	5
40	Biocompatibility and tissue integration of a novel shape memory surgical mesh for ventral hernia: In vivo animal studies. <i>Journal of Biomedical Materials Research - Part B Applied Biomaterials</i> , 2014, 102, 1093-1100.	3.4	12
41	Wireless Tissue Palpation for Intraoperative Detection of Lumps in the Soft Tissue. <i>IEEE Transactions on Biomedical Engineering</i> , 2014, 61, 353-361.	4.2	64
42	Soft material adhesion characterization for in vivo locomotion of robotic capsule endoscopes: Experimental and modeling results. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2014, 39, 257-269.	3.1	11
43	Evaluating temperature and duration in arterial tissue fusion to maximize bond strength. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2014, 30, 41-49.	3.1	18
44	Temperature Measurement Methods During Direct Heat Arterial Tissue Fusion. <i>IEEE Transactions on Biomedical Engineering</i> , 2013, 60, 2552-2558.	4.2	17
45	Preliminary Friction Force Measurements on Small Bowel Lumen When Eliminating Sled Edge Effects. <i>Tribology Letters</i> , 2013, 51, 377-383.	2.6	14
46	Measurements of the contact force from myenteric contractions on a solid bolus. <i>Journal of Robotic Surgery</i> , 2013, 7, 53-57.	1.8	17
47	A quasi-static model of wheel-tissue interaction for surgical robotics. <i>Medical Engineering and Physics</i> , 2013, 35, 1368-1376.	1.7	5
48	A quantitative comparison of soft tissue compressive viscoelastic model accuracy. <i>Journal of the Mechanical Behavior of Biomedical Materials</i> , 2013, 20, 126-136.	3.1	51
49	A tribological investigation of the small bowel lumen surface. <i>Tribology International</i> , 2013, 62, 171-176.	5.9	16
50	Wireless tissue palpation: Proof of concept for a single degree of freedom. , 2013, , .		18
51	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
52	Tissue fusion bursting pressure and the role of tissue water content. <i>Proceedings of SPIE</i> , 2013, , .	0.8	7
53	Uniaxial Wireless Tissue Palpation Device for Minimally Invasive Surgery. <i>Journal of Medical Devices, Transactions of the ASME</i> , 2013, 7, .	0.7	1
54	Integrating a novel shape memory polymer into surgical meshes decreases placement time in laparoscopic surgery: An <i>in vitro</i> and acute <i>in vivo</i> study. <i>Journal of Biomedical Materials Research - Part A</i> , 2013, 101A, 2613-2620.	4.0	16

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55	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
56	Single Port Access Surgery With a Novel Port Camera System. Surgical Innovation, 2012, 19, 123-129.	0.9	3
57	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
58	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
59	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
60	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
61	Single-Port-Access Surgery with a Novel Magnet Camera System. IEEE Transactions on Biomedical Engineering, 2012, 59, 1187-1193.	4.2	39
62	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
63	Measurement of Bond Strength of Direct Heat Tissue Fusion in Arteries. , 2012, , .		2
64	Design and Evaluation of a Computer-Controlled Pressure Algometer. Journal of Medical Devices, Transactions of the ASME, 2011, 5, .	0.7	3
65	Preliminary Mechanical Characterization of the Small Bowel for In Vivo Robotic Mobility. Journal of Biomechanical Engineering, 2011, 133, 091010.	1.3	45
66	Design and Preliminary Evaluation of a Novel Brace for Boutonniere Deformity. Journal of Medical Devices, Transactions of the ASME, 2010, 4, .	0.7	0
67	An Integrated Port Camera and Display System for Laparoscopy. IEEE Transactions on Biomedical Engineering, 2010, 57, 1191-1197.	4.2	14
68	Analysis of Wheel-Tissue Interaction for In Vivo Robotic Mobility. , 2010, , .		0
69	Micropatterned Treads for In Vivo Robotic Mobility. Journal of Medical Devices, Transactions of the ASME, 2010, 4, .	0.7	23
70	Preliminary In Vivo Capsule Crawler Mobility. , 2010, , .		1
71	Preliminary Mechanical Characterization of the Small Bowel for In Vivo Mobility. , 2010, , .		1
72	Initial Design and Evaluation of an Intra-Cardiac Camera System for Ventricular Septal Defects. , 2010, , .		0

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73	The development of a material model and wheel-tissue interaction for simulating wheeled surgical robot mobility. <i>Computer Methods in Biomechanics and Biomedical Engineering</i> , 2009, 12, 239-248.	1.6	4
74	Vision and Task Assistance Using Modular Wireless <i>In Vivo</i> Surgical Robots. <i>IEEE Transactions on Biomedical Engineering</i> , 2009, 56, 1700-1710.	4.2	66
75	A Laparoscopic Camera-Enabled Cannula Port. , 2009, , .		0
76	An Improved Splint Design for Boutonniere Deformity. , 2009, , .		0
77	Miniature <i>in vivo</i> Robots for Remote and Harsh Environments. <i>IEEE Transactions on Information Technology in Biomedicine</i> , 2008, 12, 66-75.	3.2	28
78	Microrobot Assisted Laparoscopic Urological Surgery in a Canine Model. <i>Journal of Urology</i> , 2008, 180, 2202-2205.	0.4	20
79	Surgery with cooperative robots. <i>Computer Aided Surgery</i> , 2008, 13, 95-105.	1.8	71
80	Modular Wireless Wheeled <i>In Vivo</i> Surgical Robots. , 2008, , .		0
81	Screening Aortic Drug Treatments Through Arterial Compliance Measurements. <i>Current Vascular Pharmacology</i> , 2008, 6, 250-257.	1.7	5
82	Surgery with cooperative robots. <i>Computer Aided Surgery</i> , 2008, 13, 95-105.	1.8	12
83	A Computational Model for Predicting the Effect of Tire Configuration on Asphaltic Pavement Life. <i>Road Materials and Pavement Design</i> , 2008, 9, 271-289.	4.0	3
84	Towards an <i>in vivo</i> wireless mobile robot for surgical assistance. <i>Studies in Health Technology and Informatics</i> , 2008, 132, 153-8.	0.3	6
85	Medical Therapy Approach for Treating Abdominal Aortic Aneurysm. <i>Vascular</i> , 2007, 15, 361-365.	0.9	5
86	Mechanical Design of Robotic <i>In Vivo</i> Wheeled Mobility. <i>Journal of Mechanical Design, Transactions of the ASME</i> , 2007, 129, 1037-1045.	2.9	27
87	An <i>In Vivo</i> Mobile Robot for Surgical Vision and Task Assistance. <i>Journal of Medical Devices, Transactions of the ASME</i> , 2007, 1, 23-29.	0.7	36
88	Recent <i>in vivo</i> surgical robot and mechanism developments. <i>Surgical Endoscopy and Other Interventional Techniques</i> , 2007, 21, 1477-1481.	2.4	28
89	Natural orifice surgery with an endoluminal mobile robot. <i>Surgical Endoscopy and Other Interventional Techniques</i> , 2007, 21, 1212-1215.	2.4	82
90	The current state of miniature <i>in vivo</i> laparoscopic robotics. <i>Journal of Robotic Surgery</i> , 2007, 1, 45-49.	1.8	33

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91	Preliminary Murine Aortic Tissue Material Properties From Pressure-Diameter Experiments. , 2007, , .		0
92	In Vivo Wheeled Robots for Tele-Surgery During Long-Term Space Flight. , 2006, , .		0
93	Modeling, Analysis, and Experimental Study of In Vivo Wheeled Robotic Mobility. IEEE Transactions on Robotics, 2006, 22, 308-321.	10.3	53
94	System Identification of Open-Loop Maneuvers Leads to Improved AUV Flight Performance. IEEE Journal of Oceanic Engineering, 2006, 31, 200-208.	3.8	30
95	In vivo laparoscopic robotics. International Journal of Surgery, 2006, 4, 167-171.	2.7	14
96	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
97	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
98	Endoluminal minirobots for transgastric peritoneoscopy. Minimally Invasive Therapy and Allied Technologies, 2006, 15, 384-388.	1.2	18
99	Mobile in vivo biopsy and camera robot. Studies in Health Technology and Informatics, 2006, 119, 449-54.	0.3	14
100	Miniature robots can assist in Laparoscopic cholecystectomy. Surgical Endoscopy and Other Interventional Techniques, 2005, 19, 473-476.	2.4	48
101	In Vivo Robotic Laparoscopy. Surgical Innovation, 2005, 12, 177-181.	0.9	5
102	Toward in vivo mobility. Studies in Health Technology and Informatics, 2005, 111, 397-403.	0.3	2
103	In vivo camera robots provide improved vision for laparoscopic surgery. International Congress Series, 2004, 1268, 787-792.	0.2	9
104	In vivo robots for laparoscopic surgery. Studies in Health Technology and Informatics, 2004, 98, 316-22.	0.3	14