

## BIBLIOGRAPHY

---

- [1] Michele G. Antonelli, Pierluigi Beomonte Zobel, Francesco Durante, and Terenziano Raparelli. Numerical modelling and experimental validation of a McKibben pneumatic muscle actuator. *Journal of Intelligent Material Systems and Structures*, 28(19):2737–2748, nov 2017.
- [2] R.B. Arumathanthri, B.S.K. Abeygoonawardhana, I.D.C.D. Kumarasinghe, D.S. Chathuranga, Thilina Dulantha Lalitharatne, and A.L. Kulasekera. A Soft Robotic Gripper with Sensory Feedback Fabricated by Latex using Coagulant Dipping Process. *2018 IEEE International Conference on Robotics and Biomimetics (ROBIO)*, pages 2082–2087, 2018.
- [3] R. Adam Bilodeau, Aslan Miriyev, Hod Lispon, and Rebecca Kramer-Bottiglio. All-soft Material System for Strong Soft Actuators. *IEEE Transactions on Robotics and Automation*, (April), 2018.
- [4] Axel Buguin, Min-Hui Li, Pascal Silberzan, Benoit Ladoux, and Patrick Keller. Micro-Actuators: When Artificial Muscles Made of Nematic Liquid Crystal Elastomers Meet Soft Lithography. *Journal of the American Chemical Society*, 128(4):1088–1089, feb 2006.
- [5] D G Caldwell and M J Goodwin. Braided Pneumatic Actuator Control of a Multi-Jointed Manipulator. pages 423–428.
- [6] Arkadeep Narayan Chaudhury and Debasis Datta. Analysis of prismatic springs of non-circular coil shape and non-prismatic springs of circular coil shape by analytical and finite element methods. *Journal of Computational Design and Engineering*, 4(3):178–191, jul 2017.

- [7] Ching-Ping Chou and B Hannaford. Measurement and modeling of McKibben pneumatic artificial muscles. *IEEE Transactions on Robotics and Automation*, 12(1):90–102, 1996.
- [8] Nelson Costa and D.G. Caldwell. Control of a Biomimetic ”Soft-actuated” 10DoF Lower Body Exoskeleton. In *The First IEEE/RAS-EMBS International Conference on Biomedical Robotics and Biomechanics, 2006. BioRob 2006.*, volume 2006, pages 495–501. IEEE, 2006.
- [9] Michael F. Cullinan, Eamonn Bourke, Kevin Kelly, and Conor McGinn. A McKibben Type Sleeve Pneumatic Muscle and Integrated Mechanism for Improved Stroke Length. *Journal of Mechanisms and Robotics*, 9(1):011013, jan 2017.
- [10] Frank Daerden and Dirk Lefeber. The Concept and Design of Pleated Pneumatic Artificial Muscles. *International Journal of Fluid Power*, 2(3):41–50, jan 2001.
- [11] Michael D. Dickey, Ryan C. Chiechi, Ryan J. Larsen, Emily A. Weiss, David A. Weitz, and George M. Whitesides. Eutectic Gallium-Indium (EGaIn): A Liquid Metal Alloy for the Formation of Stable Structures in Microchannels at Room Temperature. *Advanced Functional Materials*, 18(7):1097–1104, apr 2008.
- [12] Nicholas Farrow and Nikolaus Correll. A soft pneumatic actuator that can sense grasp and touch. In *2015 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS)*, volume 2015-Decem, pages 2317–2323. IEEE, sep 2015.
- [13] Wyatt Felt. *Sensing Methods for Soft Robotics*. 2017.
- [14] Wyatt Felt, Khai Yi Chin, and C. David Remy. Contraction Sensing With Smart Braid McKibben Muscles. *IEEE/ASME Transactions on Mechatronics*, 21(3):1201–1209, jun 2016.
- [15] Wyatt Felt, Khai Yi Chin, and C. David Remy. Smart Braid Feedback for the Closed-Loop Control of Soft Robotic Systems. *Soft Robotics*, 00(00):soro.2016.0056, jun 2017.

- [16] Wyatt Felt, Shihan Lu, and C. David Remy. Modeling and Design of 'Smart Braid' Inductance Sensors for Fiber-Reinforced Elastomeric Enclosures. *IEEE Sensors Journal*, 18(7):2827–2835, 2018.
- [17] Daniel P Ferris, Joseph M Czerniecki, and B Hannaford. An ankle-foot orthosis powered by artificial muscles. *Journal of Applied Biomechanics*, 21:189–197, 2005.
- [18] Carter S. Haines, Márcio D. Lima, Na Li, Geoffrey M. Spinks, Javad Foroughi, J. D. W. Madden, Seon H. Kim, Shaoli Fang, M. Jung de Andrade, F. Goktepe, O. Goktepe, Seyed M. Mirvakili, Sina Naficy, X. Lepro, Jiyoung Oh, Mikhail E. Kozlov, Seon Jeong Kim, Xiuru Xu, Benjamin J. Swedlove, Gordon G. Wallace, and Ray H. Baughman. Artificial Muscles from Fishing Line and Sewing Thread. *Science*, 343(6173):868–872, feb 2014.
- [19] Blake Hannaford, Jack M. Winters, Ching-Ping Chou, and Pierre-Henry Marbot. The anthroform biorobotic arm: A system for the study of spinal circuits. *Annals of Biomedical Engineering*, 23(4):399–408, jul 1995.
- [20] Hugh Herr and Roy Kornbluh. New horizons for orthotic and prosthetic technology : artificial muscle for ambulation. 5385:1–9, 2004.
- [21] A Hildebrandt, O Sawodny, D Ilmenau, and Festo Ag. Cascaded control concept of a robot with two degrees of freedom driven by four artificial pneumatic muscle actuators. pages 680–685, 2005.
- [22] Lindsey Hines, Kirstin Petersen, Guo Zhan Lum, and Metin Sitti. Soft Actuators for Small-Scale Robotics. *Advanced Materials*, 29(13), 2017.
- [23] Jackson Wirekoh and Yong-Lae Park. Design of flat pneumatic artificial muscles. 2016.
- [24] Sangbae Kim, Elliot Hawkes, Kyujin Choy, Matthew Joldaz, Joe Foley, and Robert Wood. Micro artificial muscle fiber using NiTi spring for soft robotics.

In *2009 IEEE/RSJ International Conference on Intelligent Robots and Systems*, pages 2228–2234. IEEE, oct 2009.

- [25] Shunichi Kurumaya, Hiroyuki Nabae, Gen Endo, and Koichi Suzumori. Design of thin McKibben muscle and multifilament structure. *Sensors and Actuators, A: Physical*, 261:66–74, 2017.
- [26] Chiwon Lee, Myungjoon Kim, Yoon Jae Kim, Nhayoung Hong, Seungwan Ryu, H. Jin Kim, and Sungwan Kim. Soft robot review. *International Journal of Control, Automation and Systems*, 15(1):3–15, feb 2017.
- [27] Carmel Majidi. Soft Robotics: A Perspective—Current Trends and Prospects for the Future. *Soft Robotics*, 1(1):5–11, mar 2014.
- [28] Yasuko Matsui, Tetsuya Akagi, and Shujiro Dohta. Development of Flexible Displacement Measuring System Using Wire-type Linear Encoder for Flexible Spherical Actuator. *Procedia Computer Science*, 76(Iris):113–118, 2015.
- [29] Gregory Mccarthy, Daniil Effraimidis, Brian Jennings, Nicholas Corso, Cagdas D Onal, and Marko Popovic. Hydraulically Actuated Muscle ( HAM ) Exo-Musculature.
- [30] Yigit Menguc, Yong-Lae Park, Ernesto Martinez-Villalpando, Patrick Aubin, Miriam Zisook, Leia Stirling, Robert J. Wood, and Conor J. Walsh. Soft wearable motion sensing suit for lower limb biomechanics measurements. In *2013 IEEE International Conference on Robotics and Automation*, pages 5309–5316. IEEE, may 2013.
- [31] Tissaphern Mirfakhrai, John D.W. Madden, and Ray H. Baughman. Polymer artificial muscles. *Materials Today*, 10(4):30–38, apr 2007.
- [32] Mayuko Mori, Koichi Suzumori, Masayuki Takahashi, and Takashi Hosoya. Very high force hydraulic McKibben artificial muscle with a p-phenylene-2,6-benzobisoxazole cord sleeve. *Advanced Robotics*, 24(1-2):233–254, 2010.

- [33] John Morrow, Hee-sup Shin, Jacob Torrey, Riley Larkins, Steven Dang, Calder Phillips-grafflin, Yong-lae Park, and Dmitry Berenson. Improving Soft Pneumatic Actuator Fingers through Integration of Soft Sensors , Position and Force Control , and Rigid Fingernails. pages 5024–5031, 2015.
- [34] T. Nakamura and H. Shinohara. Position and Force Control Based on Mathematical Models of Pneumatic Artificial Muscles Reinforced by Straight Glass Fibers. *Proceedings 2007 IEEE International Conference on Robotics and Automation*, (April):4361–4366, 2007.
- [35] Toshiro Noritsugu, Masahiro Takaiwa, and Daisuke Sasaki. Power assist wear driven with pneumatic rubber artificial muscles. *15th International Conference on Mechatronics and Machine Vision in Practice, M2VIP'08*, pages 539–544, 2008.
- [36] Yong-Lae Park, Bor-rong Chen, Carmel Majidi, Robert J. Wood, Radhika Nagpal, and Eugene Goldfield. Active Modular Elastomer Sleeve for Soft Wearable Assistance Robots. In *2012 IEEE/RSJ International Conference on Intelligent Robots and Systems*, pages 1595–1602. IEEE, oct 2012.
- [37] Yong Lae Park, Jobim Santos, Kevin G. Galloway, Eugene C. Goldfield, and Robert J. Wood. A soft wearable robotic device for active knee motions using flat pneumatic artificial muscles. *Proceedings - IEEE International Conference on Robotics and Automation*, pages 4805–4810, 2014.
- [38] Francesco Rosso, Gerardo Marino, Antonio Giordano, Manlio Barbarisi, Domenico Parmeggiani, and Alfonso Barbarisi. Smart materials as scaffolds for tissue engineering. *Journal of Cellular Physiology*, 203(3):465–470, jun 2005.
- [39] Daniela Rus and Michael T. Tolley. Design, fabrication and control of soft robots. *Nature*, 521(7553):467–475, 2015.
- [40] Norihiko Saga, Taro Nakamura, and Kenji Yaegashi. Mathematical model of pneumatic artificial muscle reinforced by straight fibers. *Journal of Intelligent Material Systems and Structures*, 18(2):175–180, 2007.

- [41] Min-Geun Sang Yul Yang<sup>1</sup>, Kyeong Ho Cho<sup>1</sup>, Youngeun Kim<sup>1</sup>, Ja Song<sup>2</sup>, Ho Sang Jung<sup>1</sup>, Ji Wang Yoo<sup>3</sup>, Hyungpil Moon<sup>1</sup>, Jae-do Nam<sup>3</sup> Choon Koo<sup>1</sup>, and Hyouk Ryeol Choi<sup>1</sup>. High performance twisted and coiled soft actuator with Spandex fiber for artificial muscles. 2018.
- [42] Daisuke Sasaki, Toshiro Noritsugu, and Masahiro Takaiwa. Development of active support splint driven by pneumatic soft actuator (ASSIST). *Proceedings - IEEE International Conference on Robotics and Automation*, 2005(April):520–525, 2005.
- [43] Saivimal Sridar, Corey J Majeika, Phillip Schaffer, Matthew Bowers, Seiichiro Ueda, Andrew J Barth, Jon L Sorrells, Jon T Wu, Thane R Hunt, and Marko Popovic. Hydro Muscle – A Novel Soft Fluidic Actuator. pages 4014–4021, 2016.
- [44] Yi Sun, Jin Guo, Tiana Monet Miller-jackson, Xinquan Liang, Marcelo H Ang Jr, Raye Chen, and Hua Yeow. Design and Fabrication of a Shape-Morphing Soft Pneumatic Actuator : Soft Robotic Pad. pages 6214–6220, 2017.
- [45] Texas Instruments. *LDC1612, LDC1614 Multi-Channel 28-Bit Inductance to Digital Converter (LDC) for Inductive Sensing*, 2018.
- [46] N.G. Tsagarakis and Darwin G. Caldwell. Development and Control of a ‘Soft-Actuated’ Exoskeleton for Use in Physiotherapy and Training. *Autonomous Robots*, 15(1):21–33, 2003.
- [47] Kosuke Tsuneyasu, Ayumu Ohno, Yoshiyuki Fukuda, Kazunori Ogawa, Toshio Tsuji, and Yuichi Kurita. A soft exoskeleton suit to reduce muscle fatigue with pneumatic artificial muscles. 2018.
- [48] Shuichi Wakimoto, Koichi Suzumori, and Takefumi Kanda. Development of intelligent McKibben actuator. In *2005 IEEE/RSJ International Conference on Intelligent Robots and Systems*, pages 487–492. IEEE, 2005.

- [49] Shuichi Wakimoto, Koichi Suzumori, and Takefumi Kanda. DEVELOPMENT OF INTELLIGENT MCKIBBEN ACTUATOR WITH BUILT-IN SOFT CONDUCTIVE RUBBER SENSOR. In *2005 IEEE/RSJ International Conference on Intelligent Robots and Systems*, pages 487–492. IEEE, 2005.
- [50] Zhongkui Wang, Damith Suresh Chathuranga, and Shinichi Hirai. 3D printed soft gripper for automatic lunch box packing. In *2016 IEEE International Conference on Robotics and Biomimetics (ROBIO)*, pages 503–508. IEEE, dec 2016.
- [51] Yong-Lae Park, Bor-Rong Chen, and Robert J. Wood. Design and Fabrication of Soft Artificial Skin Using Embedded Microchannels and Liquid Conductors. *IEEE Sensors Journal*, 12(8):2711–2718, aug 2012.
- [52] Aaron J. Young and Daniel P. Ferris. State of the art and future directions for lower limb robotic exoskeletons. *IEEE Transactions on Neural Systems and Rehabilitation Engineering*, 25(2):171–182, 2017.
- [53] Yanlei Yu and Tomiki Ikeda. Soft Actuators Based on Liquid-Crystalline Elastomers. *Angewandte Chemie International Edition*, 45(33):5416–5418, aug 2006.
- [54] Michelle C Yuen, Rebecca Kramer-bottiglio, and Jamie Paik. Strain Sensor-Embedded Soft Pneumatic Actuators for Extension and Bending Feedback. 2018.