

List of Publications – Max David Mylo

Last update: September 2021

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Original Papers in Peer Reviewed Journals & Peer Reviewed Books and Book Series

2021

Mylo MD, Hofmann M, Delp A, Scholz R, Walther F, Speck T & Speck O (2021) Advances on the visualization of the internal structures of the European mistletoe: 3D reconstruction using microtomography. *Frontiers in Plant Science*, 12:715711. doi: 10.3389/fpls.2021.715711

Speck O, Langer M & Mylo MD (2021) Plant-inspired damage control—an inspiration for sustainable solutions in the Anthropocene. *The Anthropocene Review*, 20530196211018489. doi: 10.1177/20530196211018489

Hone T, Mylo MD, Speck O, Speck T & Taylor D (2021) Failure mechanisms and bending strength of *Fuchsia magellanica* var. *gracilis* stems. *Journal of The Royal Society Interface*, 18(175), 20201023. doi: 10.1098/rsif.2020.1023

2020

Yin K, Mylo MD, Speck T & Wegst UGK (2020) 2D and 3D graphical datasets for bamboo-inspired tubular scaffolds with functional gradients: micrographs and tomograms. *Data in Brief*, 31, 105870. doi: 10.1016/j.dib.2020.105870

Sachse R, Westermeier AS, Mylo MD, Nadasdi J, Bischoff M, Speck T & Poppinga S (2020) Snapping mechanics of the Venus flytrap (*Dionaea muscipula*). *Proceedings of the National Academy of Sciences*, 117(27), 16035-16042. doi: 10.1073/pnas.2002707117

Yin K, Mylo MD, Speck T & Wegst UGK (2020) Bamboo-inspired tubular scaffolds with functional gradients. *Journal of the Mechanical Behavior of Biomedical Materials*, 103826. doi: 10.1016/j.jmbbm.2020.103826

Correa D, Poppinga S, Mylo MD, Westermeier AS, Bruchmann B, Menges A & Speck T (2019) 4D pine scale: Biomimetic 4D printed autonomous scale and flap structures capable of multi-phase movement. *Philosophical Transactions of the Royal Society A*, 378(2167), 20190445. doi: 10.1098/rsta.2019.0445

Mylo MD, Krüger F, Speck T & Speck O (2020) Self-repair in cacti branches: Comparative analyses of their morphology, anatomy, and biomechanics. *International journal of molecular sciences*, 21(13), 4630. doi: 10.3390/ijms21134630

2019

Ferger K, Hackbarth M, Mylo MD, Müller C & Zentgraf K (2019) Measuring temporal and spatial accuracy in trampolining. *Sports Engineering*, 22(3-4), 18. doi: 10.1007/s12283-019-0310-9

Esser F, Scherag FD, Poppinga S, Westermeier A, Mylo MD, Kampowski T, Bold G, Rühle J & Speck T (2019) Adaptive Biomimetic Actuator Systems Reacting to Various Stimuli by and Combining Two Biological Snap-Trap Mechanics. In *Conference on Biomimetic and Biohybrid Systems* (pp. 114-121). Springer, Cham. doi: 10.1007/978-3-030-24741-6_10

2018

Kampowski T, Mylo MD, Poppinga S & Speck T (2018) How water availability influences morphological and biomechanical properties in the one-leaf plant *Monophyllaea horsfieldii*. *Royal Society open science*, 5(1), 171076. doi: 10.1098/rsos.171076

2017

Kampowski T, Mylo MD, Speck T & Poppinga S (2017) On the morphometry, anatomy and water stress behaviour of the anisocotyledonous *Monophyllaea horsfieldii* (Gesneriaceae) and their eco-evolutionary significance. *Botanical Journal of the Linnean Society*, 185(3), 425-442. doi: 10.1093/botlinnean/box063

Conference Proceedings

2019

Mylo MD, Westermeier AS, Poppinga A & Speck T (2019) Establishment of a methodology for full-field 3D displacement and deformation analyses of plants and (bio-inspired) technical materials systems and structures. In: Kesel, A.B. & Zehren, D. (eds.) *Bionik: Patente aus der Natur (GTBB) Tagungsband 9. Bremer Bionik-Kongress 2018*, 211–216. ISBN: 978300061443

2017

Kampowski T, Mylo MD, Demandt S, Poppinga S & Speck T (2017) Der Einfluss von Wasserstress auf morphologische und mechanische Eigenschaften austrocknungstoleranter und austrocknungsintoleranter Gesneriaceen. In: Kesel, A.B. & Zehren, D. (eds.) *Bionik: Patente aus der Natur (GTBB) Tagungsband 8. Bremer Bionik-Kongress 2016*, 214–219. ISBN: 9783000550300

Lenk C, Mylo MD & Ferger K (2017) Evaluation eines Messsystems zur Bestimmung der Flugzeit und der Landepunkte im Trampolinturnen. In: Korban, S., Brams, M., Hennig, L. & Heinen T. (Hrsg.) *Vielfalt und Vernetzung im Turnen. Jahrestagung der dvs-Kommission Gerätturnen vom 05.-07.09.2016 in Augsburg*. ISBN: 9783880206540

Lenk C, Hackbarth M, Mylo MD, Weigand J & Ferger K (2017) Evaluation eines Messsystems für die Flugzeitmessung im Trampolinsport. In: Fichtner, I. (eds.) *Technologien im Leistungssport 2: Tagungsband zur 18. Frühjahrsschule am 13./14. April 2016 in Leipzig*. ISBN: 9783840375132

2016

Lenk C, Hackbarth M, Mylo MD, Weigand J & Ferger K (2016) Evaluation of a measurement system for determining flight times in trampoline sports. In Wiemeyer, J. & Seyfarth, A. (eds.). *Human movement and technology: book of abstracts; 11th joint dvs Conference on Motor Control & Learning, Biomechanics & Training, 28-30 September 2016 in Darmstadt*. ISBN: 9783844047073

Further Conference Contributions, Posters and Oral Presentations

(T) talk, (ST) short talk accompanying poster presentation, (P) poster presentation

Presenter is underlined when several authors are listed.

2021

- (T) Mylo MD, Hofmann M, Beisel S, Balle F, Speck T & Speck O (2019) Staying in touch - The European Mistletoe (*Viscum album*) and its multifunctional connection to the host. EUROMAT conference (virtual), (13.-17.09.2021).
- (T) Mylo MD, Hesse L, Masselter T, Leupold J, Drozella K, Speck T & Speck O (2019) Why the jumping cholla jumps – a comparative study on the branch-branch junction stability in Opuntioideae. SEB Annual Main Meeting (virtual), (29.06.-08.07.2021).

2020

- (T) Mylo MD, Speck T & Speck O (2019) Damage management in plants. *livMatS* SAB-meeting (virtual), (18.11.2020).

2019

- (P) Yin K, Mylo MD, Shubitidze F, Speck T & Wegst UGK (2019) Bamboo-inspired porous tubes: Permeability, flow, and water purification. 8th International Conference on Mechanics of Biomaterials and Tissues, Hawaii, United States (15-19.12.2019).
- (P) Mylo MD, Krüger F, Speck T & Speck O (2019) Biomechanical and morphological characterization of intact, damaged and healed branches comparing two species of Opuntioideae. 4. Bocholter Bionik-Workshop, Bocholt, Germany (14.11.2019).
- (P) Mylo MD, Speck T & Speck O (2019) Damage control analyses in two species of the Opuntioideae (Cactaceae). *livMatS* retreat, Müllheim, Germany (13.-15.11.2019).
- (P) Mylo MD, Speck T & Speck O (2019) Comparative analyses of damage control in two species of the Opuntioideae (Cactaceae). *livMatS* Kickoff meeting, Freiburg, Germany (26.-27.09.2019).
- (T) Mylo MD, Westermeier AS, Poppinga S & Speck T (2019) Assessment of a digital image correlation-based methodology for quantitative full-field 3D plant movement and deformation analyses. SEB Annual Main Meeting, Seville, Spain. (02.-05.07.2019)
- (ST) Mylo MD, Krüger F, Speck T & Speck O (2019) Biomechanical and morphological-anatomical characterization of intact, damaged and healed branches comparing two species of Opuntioideae. SEB Annual Main Meeting, Seville, Spain (02.-05.07.2019). **Awarded third prize of the R. McNeill Alexander awards for Biomechanics.**
- (T) Yin K, Mylo MD, Speck T & Wegst U (2019). Bamboo-inspired Tubular Scaffolds with Functional Gradients. MRS Spring Meeting & Exhibit in Phoenix, Arizona, United States. (22.-26.4.2019)

2018

- (ST) Mylo MD, Westermeier AS, Poppinga S & Speck T (2018) 3D full-field displacement and deformation measurements on plant structures using stereo-camera setups and DIC. Biomimetics Congress at the City University of Applied Sciences, Bremen, Germany. (26.-27.10.2016)
- (P) Kampowski T, Mylo MD, Demandt S, Poppinga S & Speck T (2018) Herbaceous shape memory material systems: Structural and biomechanical adaptations to desiccation in the resurrection plant *Ramonda myconi*. Plant Biomechanics Conference, Montreal, Canada. (09.-14.08.2018)

2016

- (P) Kampowski T, Mylo MD, Demandt S, Poppinga S & Speck T (2016) The impact of water stress on morphological and biomechanical properties of desiccation-tolerant and desiccation-intolerant Gesneriaceae. Biomimetics Congress at the City University of Applied Sciences, Bremen, Germany. (21-22.10.2016)
- (T) Lenk C, Hackbarth M, Mylo MD, Weigand J & Ferger K (2016) Evaluation of a measurement system for determining flight times in trampoline sports. 11th joint dvs Conference on Motor Control & Learning, Biomechanics & Training in Darmstadt, Germany. (28.-30.09.2016)

- (T) Lenk C, Hackbarth M, Mylo MD, Weigand J & Ferger K (2016): Entwicklung eines Mess- und Informationssystems zur simultanen Erfassung, Verarbeitung und Aufbereitung von Wettkampfdaten im Trampolinturnen. Technologien im Leistungssport – 18. Frühjahrsschule des IAT in Leipzig, Germany. (13.-14.04.2016)

2015

- (P) Kampowski T, Mylo MD, Poppinga S, Speck T (2015) Adaptive mechanics and reinforcement in herbaceous plants. Research Network 'Funktionelle Nanostrukturen' + 'Bio-Mat-S' + 'CleanTech', Bad Herrenalb, Germany. (01.-02.10.2015)

Published Annual Reports and Scientific Reports

2021

Mylo MD, Krüger F, Speck T & Speck O (2020): Damage management in cacti. In: Freiburg Center for Interactive Materials and Bioinspired Technologies (FIT) Report 2020, 37-38. ISBN: 987-3-946018-06-3

2020

Mylo MD, Krüger F, Speck T & Speck O (2020): Self-healing in cacti branches: a morphological, anatomical and biomechanical analysis. In: Freiburg Center for Interactive Materials and Bioinspired Technologies (FIT) Report 2019, 43-44. ISBN: 987-3-946018-05-6

2019

Westermeier AS, Mylo MD, Poppinga S, Masselter T & Speck T (2019): Full-field 3D deformation and displacement analyses on plant surfaces. In: Freiburg Center for Interactive Materials and Bioinspired Technologies (FIT) Report 2018, 39-41. ISBN: 987-3-946018-06-3