

Publications, talks, and other contributions

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Patent

2011: EP 2 320 015 - Hingeless, infinitely deformable folding mechanism (Gelenkloser, stufenlos verformbarer Klappmechanismus). Inventors: Knippers J, Lienhard J, Schleicher S, Poppinga S, Masselter T, Speck T. Filing: 10.11.2009, EP20060743126. Disclosure: 11.05.2011, EP 2 320015 A2.

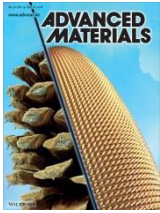
Publications

* Corresponding author

- 2018: **Kampowski T*, Demandt S, Poppinga S, Speck T (2018)** Structural and mechanical adaptations to desiccation in the resurrection plant *Ramonda myconi* (Gesneriaceae) (under review)
- Speck T*, Bauer G, Masselter T, Poppinga S, Schmier S, Thielen M, Speck O (2018)** Biomechanics and functional morphology of plants – inspiration for biomimetic materials and structures. In: A. Geitmann, J. Gril (eds.), *Plant Biomechanics*. Springer (in press)
- Poppinga S*, Westermeier AS, Speck T, Fleischmann A (2018)** Structural and functional diversity of bladderwort traps. *AIPC (Associazione Italiana Piante Carnivore) Magazine* (in press)
- Westermeier AS*, Sachse R*, Poppinga S, Vögele P, Adamec L, Speck T, Bischoff M (2018)** How the carnivorous waterwheel plant (*Aldrovanda vesiculosa*) snaps. *Proceedings of the Royal Society B: Biological Sciences* 285(1878): 20180012. doi: 10.1098/rspb.2018.0012.
- Nestle N*, Šandor1 A, Bruchmann B, Speck T, Gallenmüller F, Poppinga S (2018)** Fossilized but functional – Tomographic insights into nature’s most resilient actuators. *Proceedings of the Bruker Micro-CT User Meeting* 2018: 49-55.
- Poppinga S*, Alamsyah F, Bauer U, Fleischmann A, Horstmann M, Klink S, Kruppert S, Lin Q, Müller U, Northrop A, Plachno BJ, Prins A, Scharmann M, Sirová D, Skates L, Westermeier AS, Ellison AM* (2018)** What’s new in the world of carnivorous plants - Summary of two symposia held in July 2017. *Carnivorous Plant Newsletter* 47(1): 18-27.
- Gallenmüller F*, Langer M, Poppinga S, Kassemeyer H-H, Speck T (2018) (online first Dec. 2017)** Spore liberation in mosses revisited. *AoB PLANTS* 10: plx075. doi: 10.1093/aobpla/plx075

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Körner A*, Born L, Mader A, Sachse R, Saffarian S, Westermeier AS, Poppinga S, Bischoff M, Gresser GT, Milwich M, Speck T, Knippers J (2018) (online first Dec. 2017) Flectofold – A biomimetic compliant shading device for complex free form facades. *Smart Materials and Structures* 27: 017001. doi: 10.1088/1361-665X/aa9c2f



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Poppinga S*, Bauer U, Speck T, Volkov AG (2018) (online first Dec. 2017) Motile traps. In: Ellison AM, Adamec L (eds.) *Carnivorous plants - Physiology, ecology, and evolution*. Oxford University Press, pp. 180-193. doi: 10.1093/oso/9780198779841.003.0014

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Poppinga S*, Speck T (2016) 3D-gedruckte, bewegliche Strukturen inspiriert von langsamen und schnellen Pflanzenbewegungen. In: A. B. Kesel, D. Zehren (eds.), *Bionik: Patente aus der Natur*. Tagungsbeiträge zum 8. Bionik-Kongress Hochschule Bremen, pp.12-18.

Born L*, Westermeier AS, Gresser GT, Poppinga S, Speck T (2016) Catching inspiration from the carnivorous plant *Aldrovanda vesiculosa* – The biomimetic façade shading system “Flectofold”. In: A. B. Kesel, D. Zehren (eds.), *Bionik: Patente aus der Natur*. Tagungsbeiträge zum 8. Bionik-Kongress. Hochschule Bremen, pp. 137-143.

Kampowski T*, Eberhard L, Gallenmüller F, Poppinga S, Speck T (2016) Medicinal leeches suck, don't they? – Investigating the functional morphology and general attachment performance of *Hirudo verbana* suction discs. In: A. B. Kesel, D. Zehren (eds.), *Bionik: Patente aus der Natur*. Tagungsbeiträge zum 8. Bionik-Kongress. Hochschule Bremen, pp. 193-200.

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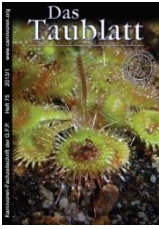
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Poppinga S, Metzger A, Speck O, Masselter T, Speck T* (2013) Schnappen, schleudern, saugen: Fallenbewegungen fleischfressender Pflanzen. *Biologie in unserer Zeit* 43(6): 352-361 (invited review; with cover picture). doi: 10.1002/biuz.201310520

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Masselter T^{*}, Poppinga S, Lienhard J, Schleicher S, Speck T (2012) The flower of *Strelitzia reginae* as concept generator for the development of a technical deformation system for architectural purposes. In: B. Moulia, M. Fournier (eds.) *Proceedings of the 7th Plant Biomechanics International Conference*, Clermont-Ferrand, France, pp. 389-392.

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- Poppinga S, Lienhard J, Schleicher S, Masselter T, Milwich M, Stegmaier T, Sartori J, Walter A, Schur H-F, Vogg K, Speck T, Knippers J (2010)** Architektur und Bionik - Wandelbarkeit ohne Gelenke. *ibr RKW Informationen Bau-Rationalisierung* 38(4): 24-25.
- Poppinga S*, Lienhard J, Schleicher S, Masselter T, Knippers J, Speck T (2010)** Gelenkfreie Klappen bei *Strelitzia reginae*. In: A. B. Kesel, D. Zehren (eds.), *Bionik: Patente aus der Natur*. Tagungsbeiträge zum 5. Bionik-Kongress Hochschule Bremen, pp. 320-326.
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- Lienhard J*, Schleicher S, Knippers J, Poppinga S, Speck T (2010)** Form-finding of nature inspires kinematics for pliable structures. In: Q. Zhang et al. (eds.), *Proceedings of the International Symposium of the International Association of Shell and Spatial Structures (IASS)*, Spatial Structures Temporary and Permanent, Shanghai, China, pp. 2545-2554.
- Poppinga S, Lienhard J, Masselter T, Schleicher S, Knippers J, Speck T* (2010)** Biomimetic deployable systems in architecture. In: C. T. Lim, J. C. H. Goh (eds.), *IFMBE Proceedings 31*, 6th World Congress on Biomechanics (WCB) 2010, Singapore, pp. 40-43. doi: 10.1007/978-3-642-14515-5_11
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- Poppinga S, Masselter T, Lienhard J, Schleicher S, Knippers J, Speck T (2010)** Plant movements as concept generators for deployable systems in architecture. In: C. A. Brebbia (ed.), *Design & Nature V: Comparing Design in Nature with Science and Engineering*, WIT Press, Southampton, Boston, pp. 403-409. doi: 10.2495/DN100351
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- Schleicher S, Lienhard J, Poppinga S, Speck T, Knippers J (2010)** Abstraction of bio-inspired curved-line folding patterns for elastic foils and membranes in architecture. In: C. A. Brebbia (ed.), *Design & Nature V: Comparing Design in Nature with Science and Engineering*, WIT Press, Southampton, Boston, pp. 479-489. doi: 10.2495/DN100431
- 2009: **Lienhard J, Poppinga S, Schleicher S, Masselter T, Speck T, Knippers J (2009)** Abstraction of plant movements for deployable structures in architecture. In: B. Thibaut (ed.), *Proceedings of the 6th Plant Biomechanics International Conference*, Ecofog, Cayenne, French Guyana, pp. 389-397.
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- 2007: **Poppinga S*, Barthlott W, Koch K (2007)** Plants that trap animals: microscopic characteristics of anti-adhesive surfaces. 33rd Microscopy Conference of the Deutsche Gesellschaft für Elektronenmikroskopie e. V., Saarbrücken, 02.-07.09.2007. *Microscopy and Microanalysis* 13(3): 192-193. doi: 10.1017/S1431927607080968
- 1997: **Poppinga S (1997)** *Drosophyllum lusitanicum* (L.) Link – Portugiesisches Taublatt. *Das Taublatt* 30(1): 4.



Further conference contributions, posters and oral presentations

(**T) keynote lecture, (*T) invited talk, (T) regular talk, (ST) short talk accompanying poster presentation, (P) poster presentation, (A) abstract. Presenter is underlined when several authors are listed.

- 2018: (*T) (P) Poppinga S, Schenck P, Speck T, Correa D, Menges A, Nestle N, Bruchmann B (2018) Abstraction of slow and fast plant movement principles for the technical transfer into biomimetic structures. BASF-JONAS Family Days, Ludwigshafen, 20.-21.03.2018.
- (T) Poppinga S, Gallenmüller F (2018) Bewegungen bei Pflanzen. Öffentlicher Vortrag, Veranstaltet vom Freundeskreis Botanischer Garten Freiburg, 19.01.2018.
- 2017: (*T) Poppinga S, Speck T (2017) Functional morphology and biomechanics of the fast traps of *Aldrovanda vesiculosa* and *Utricularia* spp.. European Exchange and Exhibition, Hortus Botanicus Leiden, 13.08.2017, Netherlands.
- (T) Poppinga S, Speck T (2017) How the Venus flytrap snaps revisited. SEB Annual Main Meeting, 03.-06.07.2017, Gothenburg, Sweden.
- (P) Poppinga S, Correa D, Menges A, Nestle N, Bruchmann B, Speck T (2017) Pine cone seed scales as role models for adaptive flaps in architecture. SEB Annual Main Meeting, 03.-06.07.2017, Gothenburg, Sweden.
- (*T) (P) Poppinga S, Speck T (2015) Smart materials for sustainable architecture: Bio-inspired fiber-reinforced flap and scale structures for self-adaptive heat and humidity regulation. BASF-JONAS Family Days, Ludwigshafen, 12.-12.04.2017.
- 2016: (T) Poppinga S, Speck T (2016) 3D-gedruckte, bewegliche Strukturen inspiriert von langsamen und schnellen Pflanzenbewegungen. 8. Bionik-Kongress - Patente aus der Natur, Bremen, 21.-22.10.2016.
- (P) Westermeier AS, Born L, Sachse R, Vögele P, Körner A, Bischoff M, Poppinga S, Knippers J, Gresser GT, Speck T (2016) Catching inspiration from the carnivorous plant *Aldrovanda vesiculosa* - Biological role model of the shading system "Flectofold". 8. Bionik-Kongress - Patente aus der Natur, Bremen, 21.-22.10.2016.
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- (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. 8. Bionik-Kongress - Patente aus der Natur, Bremen, 21.-22.10.2016.
- (P) Kampowski T, Eberhard L, Gallenmüller F, Poppinga S, Speck T (2016) Medicinal leeches suck, don't they? Investigating the functional morphology and general attachment performance of *Hirudo verbana* suction discs. 8. Bionik-Kongress - Patente aus der Natur, Bremen, 21.-22.10.2016.
- (P) Poppinga S, Speck T (2016) Pine cone seed scales as role models for adaptive flaps in architecture. Status-workshop des Kompetenznetzes „Funktionelle Nanostrukturen“, 06.-07.10.2016, Bad Herrenalb.
- (*T) Poppinga S, Speck T (2016) How plants move, and how the motion principles can inspire new technologies. Skype talk with Studio One, Berkeley University (Prof. Simon Schleicher), 26.09.2016.
- (*T) Poppinga S (2016) New insights into the biomechanics and functional morphology of active carnivorous plant traps. International Carnivorous Plant Society Conference, Kew Gardens, London, UK (07.08.2016)
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