

Anna Westermeier

Last update: April 2018

Plant Biomechanics Group (PBG)
Botanic Garden, University of Freiburg
Schänzlestr. 1
D-79104 Freiburg i.Br.

Freiburg Centre of Interactive Materials and Bioinspired Technologies (FIT)
Georges-Köhler-Allee 105
D-79110 Freiburg i. Br.

Email: anna.westermeier@biologie.uni-freiburg.de
Phone: ++49-(0)761-203-2664
Fax: ++49-(0)761-203-2880



ORCID-ID orcid.org/0000-0001-9281-1254

Publications

- 2018 **S. Poppinga, F. Alamsyah, U. Bauer, A. Fleischmann, M. Horstmann, S. Klink, S. Kruppert, Q. Lin, U. Müller, A. Northrop, B. J. Plachno, A. Prins, M. Scharmann, D. Sirová, L. Skates, A. S. Westermeier, A. M. Ellison** (2018) What's new in the world of carnivorous plants – Summary of two symposia held in July 2017. *Carnivorous Plant Newsletter* 47: 1, pp. 18-27.
- A. Körner, L. Born, A. Mader, R. Sachse, S. Saffarian, A. S. Westermeier, S. Poppinga, M. Bischoff, G. T. Gresser, M. Milwich, T. Speck, J. Knippers** (2018) Flectofold – A biomimetic compliant shading device for complex free form facades. *Smart Materials and Structures* 27: 017001. doi: 10.1088/1361-665X/aa9c2f
- 2017 **A. S. Westermeier, S. Poppinga, A. Körner, L. Born, R. Sachse, S. Saffarian, J. Knippers, M. Bischoff, G. T. Gresser, T. Speck** (2017) Keine Gelenkbeschwerden – Wie Pflanzen sich bewegen und die Technik inspirieren. In: J. Knippers, U. Schmid & T. Speck (eds.), *Baubionik – Biologie beflügelt Architektur. – Stuttgarter Beiträge zur Naturkunde, Serie C, Band 82*, Stuttgart, pp. 30-39.
- A. S. Westermeier, A. Fleischmann, K. Müller, B. Schäferhoff, C. Rubach, T. Speck, S. Poppinga** (2017) Trap diversity and character evolution in carnivorous bladderworts (*Utricularia*, Lentibulariaceae). *Scientific Reports* 7: 12052. doi:10.1038/s41598-017-12324-4
- L. Born, A. Körner, G. Schieber, A. S. Westermeier, S. Poppinga, R. Sachse, P. Bergmann, O. Betz, M. Bischoff, T. Speck, J. Knippers, M. Milwich, G. T. Gresser** (2017) Fiber-reinforced plastics with locally adapted stiffness for bio-inspired hingeless, deployable architectural systems. In: A. Herrmann (eds.) 21st Symposium on Composites, Vol. 742: *Trans Tech Publications* (Key Engineering Materials), pp. 689-696. doi:10.4028/www.scientific.net/KEM.742.689
- S. Poppinga, L. E. Daber, A. S. Westermeier, S. Kruppert, M. Horstmann, R. Tollrian, T. Speck** (2017) Biomechanical analysis of prey capture in the carnivorous Southern bladderwort (*Utricularia australis*). *Scientific Reports* 7: 1776. doi: 10.1038/s41598-017-01954-3
- 2016 **S. Poppinga, C. Weißkopf, A. S. Westermeier, T. Masselter, T. Speck** (2016) Fastest predators in the plant kingdom: Functional morphology and biomechanics of suction traps found in the largest genus of carnivorous plants. *AoB PLANTS* 8: plv140. doi:10.1093/aobpla/plv140
- T. Speck, T. Masselter, S. Poppinga, M. Thielen, G. Bauer, K. Bunk, L. Hesse, S. Schmier, A. Westermeier** (2016) Fibres in biology and technology: smart fibre-reinforced materials and structures inspired by plants and animals. *Proceedings of the ECCM17 - 17th European Conference on Composite Materials* Munich, Germany, 26-30th June 2016 (ISBN 978-3-00-053387-7).
- S. Poppinga, A. Körner, R. Sachse, L. Born, A. S. Westermeier, L. Hesse, J. Knippers, M. Bischoff, G. Gresser, T. Speck** (2016) Compliant mechanisms in plants and architecture. In:

Knippers, J., Speck, T., Nickel, K. future articles (eds.), Biomimetic research for architecture and building construction: biological design and integrative structures. *Biologically-inspired systems*, Springer, Heidelberg, Berlin, pp. 169-193. doi: 10.1007/978-3-319-46374-2_9

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

Further conference contributions, posters and oral presentations

(T) regular talk, (P) poster presentation, (A) abstract. Presenter is underlined when several authors are listed.

2017 (T) A. S. Westermeier, R. Sachse, P. Vögele, M. Bischoff, S. Poppinga, T. Speck (2017) Kinematics, biomechanics and functional morphology of the snap-traps of *Aldrovanda vesiculosa*. Society of Experimental Biology's 2017 Annual Main Meeting, Gothenburg.

2016 (P) A. S. Westermeier, L. Born, R. Sachse, P. Vögele, A. Körner, M. Bischoff, S. Poppinga, J. Knippers, G.T. Gresser, T. Speck (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.

(P) L. Born, A. S. Westermeier, R. Sachse, P. Vögele, A. Körner, M. Bischoff, S. Poppinga, J. Knippers, G.T. Gresser, T. Speck (2016) Catching inspiration from the carnivorous plant *Aldrovanda vesiculosa* – Technical implementation of the shading system "Flectofold".8. Bionik-Kongress - Patente aus der Natur, Bremen, 21.-22.10.2016.

(A) R. Sachse, A. Körner, S. Poppinga, A. Westermeier, L. Born, G. Gresser, T. Speck, M. Bischoff, J. Knippers (2016) Design process of a biomimetic facade element inspired by the carnivorous plant *Aldrovanda vesiculosa*. Proceedings of the ECCOMAS Congress 2016, VII European Congress on Computational Methods in Applied Sciences and Engineering, Crete, Greece, 5-10.06.2016

(T) A. S. Westermeier, T. Speck, S. Poppinga [2016] Trap diversity and evolution in carnivorous bladderworts (*Utricularia*, Lentibulariaceae). Society of Experimental Biology's 2016 Annual Main Meeting, Brighton.

Published reports

2018 **A. Westermeier, S. Poppinga, T. Speck** (2018) Das biomimetische Fassaden-Verschattungssystem Flectofold (The biomimetic facade shading device Flectofold) In: *Freiburger Zentrum für Interaktive Materialien und Bioinspirierte Technologien (FIT) Report 2017 FIT*, Freiburg (in press).

2017 **A. Westermeier, S. Poppinga, T. Speck** (2017) Die fleischfressende Pflanze *Aldrovanda vesiculosa* als Ideengeber für die Entwicklung eines biomimetischen Fassaden-Verschattungssystems (The carnivorous plant *Aldrovanda vesiculosa* as concept generator for the development of a biomimetic façade shading system). In: *Freiburger Zentrum für Interaktive Materialien und Bioinspirierte Technologien (FIT) Report 2016 FIT*, Freiburg (in press).

2016 **A. Westermeier, L. Hesse, S. Poppinga, T. Speck** (2016) Kinematik planarer, gekrümmter und gewellter Pflanzenstrukturen als Konzeptgeneratoren für bewegliche Strukturen in der Architektur (Kinematics of planar, curved and corrugated plant surfaces as concept generators for deployable systems in architecture) In: *Freiburger Zentrum für Interaktive Materialien und Bioinspirierte Technologien (FIT) Report 2015, FIT*, Freiburg, pp. 24-27.