



Professor Zhigang Suo

See:

<https://www.seas.harvard.edu/suo/suoCV.html>

<http://web-static-aws.seas.harvard.edu/suo/>

https://en.wikipedia.org/wiki/Zhigang_Suo

<https://scholar.google.com/citations?user=GIBI-VUAAAAJ&hl=en&oi=ao>

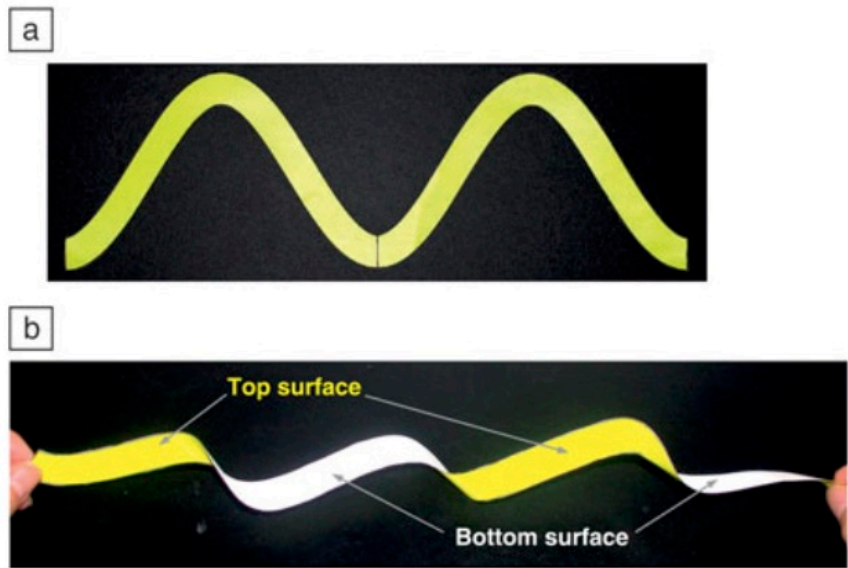


Figure 5. (a) A serpentine strip is cut out of a piece of paper. (b) When the strip is pulled, it elongates by twisting out of plane.²¹

From: Zhigang Suo, “Mechanics of stretchable electronic and soft machines”,
Materials Research Society (MRS) Bulletin, Vol. 37, March 2012

Allen E. and Marilyn M. Puckett Professor of Mechanics and Materials
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Biography:

Zhigang Suo earned a bachelor degree from Xi'an Jiaotong University in 1985, majoring in Engineering Mechanics. Upon earning a Ph.D. degree in Engineering Science from Harvard University, in 1989, Suo joined the faculty of the University of California at Santa Barbara, and established a group studying the mechanics of materials and structures. The group moved to Princeton University in 1997, and to Harvard University in 2003. Suo teaches courses in solid mechanics and applied mathematics. His research centers on the mechanical behavior of materials and structures. With Teng Li, Suo co-founded iMechanica, the web of mechanics and mechanics. In 2015, iMechanica has over 20,000 registered users. He is a member of the Executive Committee (2005-2010, Chair 2010) of the Applied Mechanics Division, of the American Society of Mechanical Engineers (ASME), and is a member at large of the US National Committee on Theoretical and Applied Mechanics (2006-2012).

Awards and Honors:

Robert Henry Thurston Lecture Award, American Society of Mechanical Engineering
Prager Medal, Society of Engineering Sciences
Distinguished Alumni Award, Xian Jiaotong University (2010)
Humbolt Research Award (2009).

Midwest Mechanics Seminar (2008/2009).

Member, the US National Academy of Engineering (elected 2008).

Zhu Kezhen Distinguished Lecturer, American Zhu Kezhen Education Foundation, 2008.

South West Mechanics Lecture Series (SWMLS), 2006.

Special Achievement Award for Young Investigators in Applied Mechanics, Applied Mechanics Division, American Society of Mechanical Engineers, 2001.

Eric Reissner Medal, International Conference on Computational Engineering and Science, 2000.

Award for Excellence in Teaching, Engineering Council, Princeton University, 1999, 2000.

Pi Tau Sigma Gold Medal, American Society of Mechanical Engineers, 1994.

Alexander von Humboldt Research Fellow, Germany, 1994.

Young Investigator Award, National Science Foundation, 1992.

Research Initiation Award, National Science Foundation, 1990.

Selected Publications:

R. Huang and Z. Suo, "Wrinkling of a compressed elastic film on a viscous layer," *J. Appl. Phys.*, 91, No. 3, 1135–1142 (2002).

Sigurd Wagner, Stephanie P. Lacour, Joyelle Jones, Pai-hui I. Hsu, James C. Sturm, Teng Li and Zhigang Suo, "Electronic skin: architecture and components", *Physica E*, Vol. 25, pp 326-334, 2004

Z. Huang, W. Hong, and Z. Suo, Evolution of wrinkles in hard films on soft substrates, *Phys. Rev. E* 70 (2004), 030601(R).

Z.Y. Huang, W. Hong and Z. Suo, "Nonlinear analyses of wrinkles in a film bonded to a compliant substrate", *Journal of the Mechanics and Physics of Solids*, Volume 53, Issue 9, 2005, pp 2101–2118,

W. Hong, X. Zhao, Z. Suo, "Formation of creases on the surfaces of elastomers and gels", *Appl. Phys. Lett.*, 95 (11) (2009)

Shengqiang Cai, Katia Bertoldi, Huiming Sang and Zhigang Suo, "Osmotic collapse of a void in an elastomer: breathing, buckling and creasing", *Soft Matter*, Vol 6, pp 5770-5777, August 2010

L. Jin, S. Cai, Z. Suo, "Creases in soft tissues generated by growth", *Europhys. Lett.*, 95 (6) (2011), p. 64002

S. Cai, D. Breid, A. J. Crosby, Z. Suo and J. W. Hutchinson, Periodic patterns and energy states of buckled films on compliant substrates, *Journal of the Mechanics and Physics of Solids*, 59 (2011) 1094–1114

Christoph Keplinger, Tiefeng Li, Richard Baumgartner, Zhigang Suo and Siegfried Bauer, "Harnessing snap-through instability in soft dielectrics to achieve giant voltage-triggered deformation", *Soft Matter*, Vol. 8, pp 285-288, 2012

Shengqiang Cai, Dayong Chen, Zhigang Suo and Ryan C. Hayward, "Creasing instability of elastomer films", *Soft Matter*, Vol. 8, pp1301-1304, 2012

Zhigang Suo, "Mechanics of stretchable electronic and soft machines", *Materials Research Society (MRS) Bulletin*, Vol. 37, March 2012

Anesia Auguste, Lihua Jin, Zhigang Suo and Ryan C. Hayward, "The role of substrate pre-stretch in post-wrinkling bifurcations", *Soft Matter*, Vol. 10, 6520, 2014

Dayong Chen, Lihua Jin, Zhigang Suo and Ryan C. Hayward, "Controlled formation and disappearance of creases", *Materials Horizons*, Vol. 1, No. 2, pp 207-213, 2014

Dian Yang, Bobak Mosadegh, Alar Ainla, Benjamin Lee, Fatemeh Khashai, Zhigang Suo, Katia Bertoldi and George M. Whitesides, "Buckling of elastomeric beams enables actuation of soft machines", *Advanced Materials*, 2015

Lihua Jin, Anesia Auguste, Ryan C. Hayward and Zhigang Suo, "Bifurcation diagrams for the formation of wrinkles or creases in soft bilayers", *Journal of Applied Mechanics*, Vol. 82, 061008, June 2015