

Professor Chao Zhang

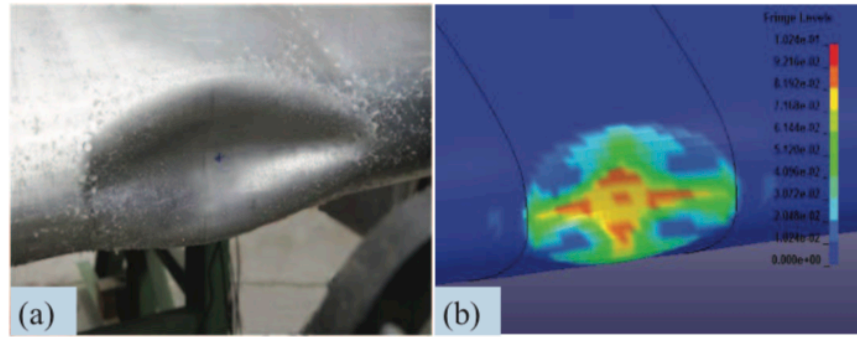


Figure 6: Experimental (a) and numerical (b) results of the deformed shape after impact

From: Chao Zhang, Wieslaw K. Binienda, Frank E. Norvat, and Wenzhi Wang, "Application of numerical methods for crashworthiness investigation of a large aircraft wing impact with a tree", *Mathematical and Computational Forestry and Natural-Resources Sciences*, Vol. 5, No. 1, pp 71-85, 2013

See:

<https://scholar.google.com/citations?user=4XI75FUAAA&hl=en>

https://www.researchgate.net/profile/Chao_Zhang40

<https://teacher.nwpu.edu.cn/m/en/2016010169.html>

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Summary:

Chao Zhang is a professor at the School of Aeronautics of Northwestern Polytechnical University. He was selected into the "National Thousand Talents Program Youth Project" and Shaanxi "Youth 100 People Program" in 2017. His major research areas include mechanical behavior of composite materials and their structures and multi-scale multi-field coupling numerical simulation methods. He has gained a series innovative achievement in the fields of multi-scale failure behavior and simulation of braided composites, impact dynamics behavior of aerospace materials and their structures etc.

Education:

2010.08-2013.12 The University of Akron, Civil Engineering (Composite Mechanics), Ph.D.

2008.09-2010.06 Wuhan University of Technology, Composite Science, M.E.

2004.09-2008.06 Wuhan University of Technology, Composite Materials and Engineering, B.E.

Research Interests:

Multi-scale failure behavior and meso-scale simulation of textile composites; Composite aging; Impact dynamics of composites and composite structures; Multi-scale modeling method and structure optimization method for composites; Mechanical-electrochemical-thermal coupled failure behavior and simulation of lithium-ion battery.

Selected Publications:

Chao Zhang, Jianlong Ji and Jianping Lei, "Investigation on Buckling of Cylindrical Shells and Influences of Boundary Conditions", *Advanced Materials Research* (Volumes 243 - 249), May 2011, pp. 1326-1330

Guo-Qiang Li and Chao Zhang, "Creep effect on buckling of axially restrained steel columns in real fires", *Journal of Constructional Steel Research*, Vol. 71, pp 182-188, April 2012,

Chao Zhang, Guo-Qiang Li and Yong-Chang Wang, "Predictability of buckling temperature of axially loaded steel columns in fire", *Journal of Constructional Steel Research*, Vol. 75, pp 32-37, August 2012

Chao Zhang, Wieslaw K. Binienda, Frank E. Norvat, and Wenzhi Wang, "Application of numerical methods for crashworthiness investigation of a large aircraft wing impact with a tree", *Mathematical and Computational Forestry and Natural-Resources Sciences*, Vol. 5, No. 1, pp 71-85, 2013

Chao Zhang, John L. Gross and Therese P. McAllister, "Lateral torsional buckling of steel W-beams subjected to localized fires", *Journal of Constructional Steel Research*, Vol. 88, pp 330-338, September 2013

Chao Zhang, Lisa Choe, Mina Seif and Zhe Zhang, "Behavior of axially loaded steel short columns subjected to a localized fire", *Journal of Constructional Steel Research*, Vol. 111, pp 103-111, August 2015

Chao Zhang, Zhe Zhang and Guo-Qiang Li, "Simple vs. sophisticated fire models to predict performance of SHS column in localized fire", *Journal of Constructional Steel Research*, Vol. 120, pp 62-69, April 2016

Chao Zhang, Shriram Santhanagopalan, Mark J. Stock, Nicholas Brunhart-Lupo and Kenny Gruchalla, "Interpretation of simultaneous mechanical-electrical-thermal failure in a lithium-ion battery module", *International Conference for High Performance Computing, Networking, Storage and Analysis*, Salt Lake City, Utah, November 13-18, 2016, Conference Paper NREL/CP-2C00-66901, December 2016

Hanfeng Yin, Xiaofei Huang, Fabrizio Scarpa, Guilin Wen, Yanyu Chen and Chao Zhang, "In-plane crashworthiness of bio-inspired hierarchical honeycombs", *Composite Structures*, Vol. 192 pp 516-527, May 2018

Hongliang Tuo, Zhixian Lu, Xiaoping Ma, Jun Xing and Chao Zhang, "Damage and failure mechanism of thin composite laminates under low-velocity impact and compression-after-impact loading conditions", *Composites Part B: Engineering*, Vol. 163, pp 642-654, 15 April 2019

Yong Cao, Yinglong Cai, Zhenqiang Zhao, Peng Liu, Lu Han and Chao Zhang, "Predicting the tensile and compressive failure behavior of angle-ply spread tow woven composites", *Composite Structures*, <https://doi.org/10.1016/j.compstruct.2019.111701> (paper accepted and in press)

Hanfeng Yin, Zhipeng Liu, Jinle Dai, Guilin Wen and Chao Zhang, "Crushing behavior and optimization of sheet-based 3D periodic cellular structures", *Composites Part B: Engineering*, Vol. 182, Article 107565, 1 February 2020