

## ALAN ZEHNDER – COMPLETE PUBLICATIONS LIST

Updated 5/5/2022

### BOOKS:

Alan T. Zehnder, **Fracture Mechanics**, Springer, (2012), DOI: 10.1007/978-94-007-2595-9

Beese, Allison M., Zehnder, Alan T., Xia, Shuman (Eds.), **Fracture, Fatigue, Failure and Damage Evolution, Volume 8, Proceedings of the 2015 Annual Conference on Experimental and Applied Mechanics**, Springer (2016).

Zehnder, Alan T., Carroll, J., Hazeli, K., Berke, R.B., Pataky, G., Cavalli, M., Beese, A., Xia, S., (Eds), **Fracture, Fatigue, Failure and Damage Evolution, Volume 8, Proceedings of the 2016 Annual Conference on Experimental and Applied Mechanics**, Springer (2017).

Zhu, Y., and Zehnder, A.T., **Experimental and Applied Mechanics, Volume 4, Proceedings of the 2016 Annual Conference on Experimental and Applied Mechanics**, Springer (2017).

### BOOK CHAPTERS:

1. Alan T. Zehnder, "Griffith fracture theory," invited article for **Encyclopedia of Tribology**, Q.J. Wang and Y.W. Chung, (eds.), Springer (2013), ISBN 978-0-387-92898-2.
2. Alan T. Zehnder, "Modes of fracture," invited article for **Encyclopedia of Tribology**, Q.J. Wang and Y.W. Chung, (eds.), Springer (2013). ISBN 978-0-387-92898-2.
3. Alan T. Zehnder, "Stress intensity factors," invited article for **Encyclopedia of Tribology**, Q.J. Wang and Y.W. Chung, (eds.), Springer (2013). ISBN 978-0-387-92898-2.
4. Alan T. Zehnder, "Static fracture response of materials," invited chapter for **Encyclopedia of Aerospace Engineering**, 1851-1858, Richard Blockley and Wei Shyy (eds.), John Wiley & Sons (2010).

### JOURNAL PUBLICATIONS:

5. A. Bhaskar, M. Walth, R. H. Rand and A. T. Zehnder, "Bistability in Coupled Opto-Thermal Micro-Oscillators," **Journal of Microelectromechanical Systems**, doi: 10.1109/JMEMS.2022.3169430. (2022)
6. Chung-Yuen Hui, Fan Cui, Alan Zehnder and Franck J. Vermerey, "Physically motivated models of polymer networks with dynamic cross-links: comparative study and future outlook," **Proc. R. Soc. A**.4772021060820210608, <http://doi.org/10.1098/rspa.2021.0608> (2021)
7. Fan Cui, Jikun Wang, Alan Zehnder, Chung-Yuen Hui, " Effect of Drying on the Viscoelastic Response of a Dual-crosslinked PVA Hydrogel," **Mechanics of Materials**, **160**, September 2021, 103984 <https://doi.org/10.1016/j.mechmat.2021.103984> (2021).
8. Jikun Wang, Tianjiao Lia, Fan Cui, Chung-Yuen Hui, Jingjie Yeo, Alan T. Zehnder, " Metamodeling of Constitutive Model Using Gaussian Process Machine Learning," **Journal of the Mechanics and Physics of Solids**, **154**, 104532, <https://doi.org/10.1016/j.jmps.2021.104532> (2021).
9. Sairam Venkata Pamulaparathi, Kunpeng Cui, Jingyi Guo, Alan Zehnder, Jian Ping Gong and Chung-Yuen Hui, " Constitutive modeling of strain-dependent bond breaking and healing kinetics of chemical Polyampholyte (PA) gel," **Soft Matter**, **17**, 4161-4169 (2021). <https://doi.org/10.1039/D1SM00110H>

10. Sairam Venkata Pamulaparathi, Kunpeng Cui, Jingyi Guo, Alan Zehnder, Jian Ping Gong and Chung-Yuen Hui, "Constitutive modeling of bond breaking and healing kinetics of physical polyampholyte (PA) gel," **Extreme Mechanics Letters**, **43**, 101184, (2021). <https://doi.org/10.1016/j.eml.2021.101184>
11. Aditya Bhaskar, B. Shayak, Richard H. Rand, Alan Zehnder, "Synchronization characteristics of an array of coupled MEMS limit cycle oscillators," **International Journal of Nonlinear Mechanics**, **128**, 103634 (2021). <https://doi.org/10.1016/j.ijnonlinmec.2020.103634> .
12. Zezhou Liu, Michael Zakowrotny, Jingyi Guo Alan Zehnder, Chung-Yuen Hui, "Energy release rate of a single edge cracked specimen subjected to large deformation," **International Journal of Fracture**, **226**, 71-79, (2020). <https://doi.org/10.1007/s10704-020-00479-7>
13. Jingyi Guo, Alan T. Zehnder, Costantino Creton and Chung-Yuen Hui, "Time Dependent Fracture of Soft Materials: Linear versus Nonlinear Viscoelasticity," **Soft Matter**, **16**, 6163-6167 (2020), <https://doi.org/10.1039/D0SM00097C> .
14. Shayak Bhattacharjee, Aditya Bhaskar, Alan Zehnder, Richard Rand, "Coexisting Modes and Bifurcation Structure in a Pair of Coupled, Detuned Third Order Oscillators," **International Journal of Non-Linear Mechanics**, **122**, 103464 (2020). <https://doi.org/10.1016/j.ijnonlinmec.2020.103464> .
15. Rebecca Meacham, Mincong Liu, Jingyi Guo, Alan Zehnder and C-Y Hui, "Effect of hydration on tensile response of a dual cross-linked PVA hydrogel," **Experimental Mechanics**, **60**, 1161-1165 (2020), <https://doi.org/10.1007/s11340-020-00598-1> .
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19. Jingyi Guo, Chung-Yuen Hui, Mincong Liu and Alan T. Zehnder, " The stress field near the tip of a plane stress crack in a gel consisting of chemical and physical cross-links," **Proceedings of the Royal Society, A**, **475**, 20180863, (2019), <http://dx.doi.org/10.1098/rspa.2018.0863>
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### **PAPERS PRESENTED (without conference proceedings):**

1. Alan Zehnder, Jikun Wang and C.-Y. (Herbert) Hui, "Deformation and Fracture Mechanics of a Dual Cross-link Hydrogel," Mechanics of Smart and Tough Gels, A virtual IUTAM symposium | May 24-29, 2021, invited talk.
2. Mincong Liu, Jingyi Guo, Chung-Yuen Hui, Alan Zehnder, " Application of Digital Image Correlation (DIC) to the Measurement of Strain Fields in a PVA Dual-Crosslink Hydrogel," presented at **2019 meeting of the Society for Experimental Mechanics**, June 2019.
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