



**Professor Rui Huang**

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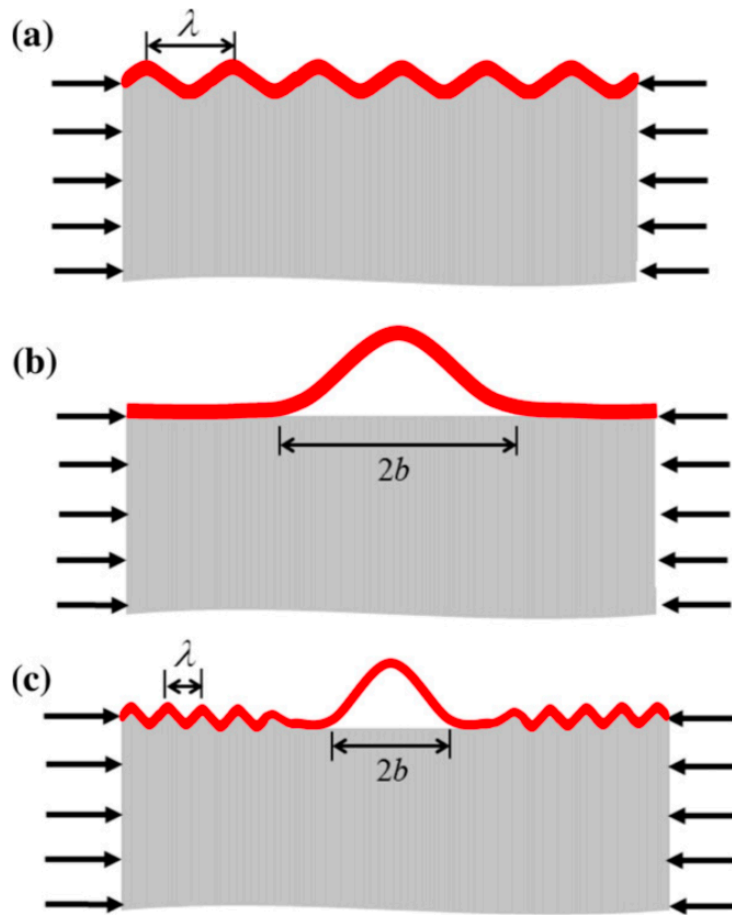
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### Biography:

Rui Huang received his Bachelor degree in Theoretical and Applied Mechanics from the University of Science and Technology of China (USTC) in 1994 and his PhD degree in Civil and Environmental Engineering, with specialty in Mechanics of Materials and Structures, from Princeton University in 2001. He joined the University of Texas at Austin as an Assistant Professor in September 2002 and was promoted to Associate Professor in 2008 and Professor in 2014. He teaches undergraduate and graduate courses in solid mechanics and materials. His areas of research include mechanics of hydrogels and soft materials, two-dimensional (2D) nanomaterials



**Fig. 1.** Schematic illustration of buckling modes for an elastic thin film on a compliant substrate. (a) Surface wrinkling with no delamination; (b) buckle-delamination; (c) concomitant wrinkling and buckle-delamination.

From: H. Mei, C.M. Landis, R. Huang, Concomitant wrinkling and buckle-delamination of elastic thin films on compliant substrates. *Mechanics of Materials* 43, 627-642 (2011).

and thin films, thermomechanical reliability of microelectronic devices and packaging. His research has been supported by the National Science Foundation (NSF) and Semiconductor Research Corporation (SRC). He received the NSF CAREER Award in 2006 and was elected Fellow of the American Society of Mechanical Engineers (ASME) in 2014.

### **Research Interests:**

Nonlinear mechanics of hydrogels and soft materials; Mechanics of graphene and 2D nanomaterials; Thermomechanical reliability of advanced packaging for microelectronics; Mechanical instability of thin films and nanostructures; Computational mechanics, multiscale modeling and simulations

### **Selected Publications:**

- C. Xu, T. Yang, Y. Kang, Q. Li, T. Xue, K.M. Liechti, R. Huang, W. Qiu, Rate-dependent decohesion modes in graphene sandwiched interfaces. *Advanced Materials Interfaces*, accepted, October 2019. B. Smith, L. Lindsay, J. Kim, E. Ou, R. Huang, L. Shi, Phonon Interaction with Ripples and Defects in Thin Layered Molybdenum Disulfide. *Appl. Phys. Lett.* 114, 221902 (2019).
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- D. A. Sanchez, Z. Dai, P. Wang, A. Cantu-Chavez, C. J. Brennan, R. Huang, N. Lu, Mechanics of Spontaneously Formed Nanoblister Trapped by Transferred 2D Crystals. *PNAS*, 115, 7884-7889 (2018).
- F. Ahmadpoor, P. Wang, R. Huang, P. Sharma, Thermal Fluctuations and Effective Bending Stiffness of Elastic Thin Sheets and Graphene: A Nonlinear Analysis. *J. Mech. Phys. Solids* 107, 294-319 (2017).
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- Jiang, T., Huang, R., Zhu, Y., 2013. Interfacial sliding and buckling of mono-layer graphene on a stretchable substrate. *Advanced Functional Materials* 24, 396–402.
- Peng Wang, Wei Gao, Zhiyi Cao, Kenneth M. Liechti and Rui Huang “Numerical analysis of circular graphene bubbles”, *J. Appl. Mech.* 2013;80(4):040905-040905-9. July 2013
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