



## **Dr. Jayson Paulose**

Postdoctoral Research Scientist  
Soft Matter Theory Group  
Instituut-Lorentz for Theoretical Physics  
Leiden University, The Netherlands

### **Dr. Paulose writes:**

“I am a postdoctoral research scientist in the Soft Matter Theory Group at the Instituut-Lorentz for theoretical physics, Leiden University. I am interested in the mechanics and statistical mechanics of soft materials. In the past few years, I have studied the mechanical response of slender elastic rods, plates, and shells, focusing on the effects of inhomogeneity and stochastic fluctuations. I'm currently interested in using similar ideas to describe biological systems including virus shells, the bacterial cell wall and mammalian muscle tissue, as well as strongly disordered elastic systems such as granular packings. Previously, I was a graduate student in the

Applied Physics Ph.D. program at the Harvard School of Engineering and Applied Sciences in the research group of Prof. David R. Nelson. An electronic version of my thesis is available. I graduated from Princeton University in 2007 with an undergraduate degree in Physics and certificates in Engineering Physics and Applications of Computing.”

**Honors & awards:**

Harvard University Certificate of Distinction in Teaching based on student evaluations, Spring 2009  
Livi Librescu Graduate Student Research Fellowship in Engineering, Harvard University 2009  
Jeffrey O. Kephart '80 Engineering Physics Award, Princeton University 2007  
Allen G. Shenstone Prize in Physics, Princeton University 2007  
PRISM Newport Award in Photonics, Princeton University 2007  
Kusaka Memorial Prize in Physics, Princeton University 2006  
Shapiro Prize for Academic Excellence, Princeton University 2005  
Shapiro Prize for Academic Excellence, Princeton University 2004  
Manfred Pyka Memorial Physics Prize, Princeton University Physics Department 2004

**Selected Publications:**

Elastic instability of a crystal growing on a curved surface, G. Meng, J. Paulose, D. R. Nelson, and V. N. Manoharan, *Science* 343, 634 (2014)

Buckling pathways in spherical shells with soft spots, J. Paulose and D. R. Nelson, *Soft Matter*, 9, 8227 (2013)

Theory of interacting dislocations on cylinders, A. Amir, J. Paulose, and D. R. Nelson, *Phys. Rev. E*, 87, 042314 (2013)

Delayed buckling and guided folding of inhomogeneous capsules, S. S. Datta, S.-H. Kim, J. Paulose, A. Abbaspourrad, D. R. Nelson, and D. A. Weitz, *Phys. Rev. Lett.*, 109, 134302 (2012)

Fluctuating shells under pressure, J. Paulose, G. Vliegenthart, G. Gompper, and D. R. Nelson, *Proc. Natl. Acad. Sci. USA*, 109, 19551 (2012)

Two-parameter sequential adsorption model applied to microber clustering, J. Paulose, D. R. Nelson, and J. Aizenberg, *Soft Matter*, 6, 2421 (2009)