



Rheology of Active Biopolymer Networks

This talk will describe the rheological properties of networks of biomolecules formed from proteins reconstituted from cells. Addition of active biomolecular motors to these networks can dramatically modify their mechanical properties, increasing their stiffness by several orders of magnitude. These networks represent a different class of materials, which are 'active,' having internal nanometer-scale motors that convert chemical energy into mechanical energy. These networks can provide a route to synthesis of materials whose mechanics are controlled by enzymatic activity. They also offer insight into the mechanics of the cell, and suggest that motor activity may lead to a large amount of the fluctuating motion observed in cells.



Wednesday, December 9, 2009
10.00 AM
1000 Micro and Nanotechnology
Laboratory
Reception to follow Seminar

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Dr. Weitz received his PhD from Harvard. He worked at Exxon Research and Engineering as a research physicist for nearly 18 years, and then became a Professor of Physics at the University of Pennsylvania. He moved to Harvard about 10 years ago, and is currently the Mallinckrodt Professor of Physics and Applied Physics. He is also the director of Harvard's Materials Research Science and Engineering Center, and helped arrange the establishment of the BASF Advance Research Initiative at Harvard, which he co-directs.