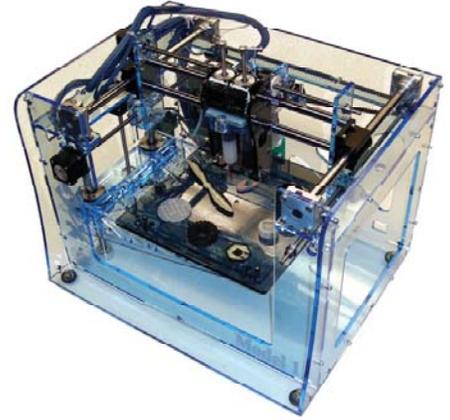


# **A Factory in Your Kitchen: On multi-material 3D-printing and the future of personal fabrication**

**Hod Lipson  
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Solid-Freeform Fabrication technology allows 3D-printing of arbitrarily shaped structures, layer by layer, directly from electronic blueprints. While this technology has been around for over two decades, it is only recently that cost, reliability, and ease of use offers the potential of crossing from industrial applications to home use. In particular, new developments in multi-material printing may allow these compact “fabbers” to move from printing passive parts to fabricating integrated, active systems ready to use right out of the printer. If broadly accepted, this technology can profoundly change the way we design, make, and consume products. This talk will focus on our experience with the open-source Fab@Home project and its use in printing a variety of integrated systems, from functional batteries to electroactive actuators. The talk will conclude with some of the opportunities that this technology offers for mass-customization and democratization of the innovation process, as well as the potential ramifications to intellectual property and supply chain management.



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Hod Lipson is an Associate Professor of Mechanical & Aerospace Engineering and Computing & Information Science at Cornell University in Ithaca, NY. He directs the Computational Synthesis group, which focuses on novel ways for automatic design, fabrication and adaptation of virtual and physical machines. He has led work in areas such as evolutionary robotics, multi-material functional rapid prototyping, machine self-replication and programmable self-assembly. Lipson received his Ph.D. from the Technion - Israel Institute of Technology in 1998, and continued to a postdoc at Brandeis University and MIT. His research focuses primarily on biologically-inspired approaches, as they bring new ideas to engineering and new engineering insights into biology. For more information visit <http://www.mae.cornell.edu/lipson>