

Synthetic biology created 'living' running shoes self-adjust to wearer's foot

Proto-cell technology is a burgeoning science that in its own way mirrors Mary Shelley's literary masterpiece, Frankenstein. Just as her monster was given life from non-living (dead) brain matter, so do proto-cells distort the divide between the living and the non-living. London-born designer and researcher, Shamees Aden, has created a prototype of a pair of running shoes in collaboration with Dr. Martin Hanczyc, a controversial professor at the University of Southern Denmark who specializes in proto-cell technology. These shoes question the future of new materials. They are 3-D printed and made to precisely fit the size of the wearer's foot like a second skin. The uniqueness of this material lies in its ability to react to movement and pressure by puffing up to provide extra support to the user if required.

According to Aden, "These special running shoes are self-healing... As you are running on different grounds and textures, the shoe is able to inflate or deflate depending on the pressure you put onto it and could help support you as a runner... When the shoes are removed, the proto-cell material can become dormant until it is needed again and then re-animated by dipping it into proto-cell soup to let them heal any damaged areas." After every run, the shoes would be placed in a jar filled with living liquid proto-cell, which serves as a re-charger of sorts. It maintains the living organisms within the shoes and helps them rejuvenate.

A burgeoning science coinciding with the advent of bio-inks and 3-D printing techniques, proto-cells have the potential to revolutionize the way we make materials. Their ability to mimic the properties of living cells makes them capable of growth, replication and evolution. These cells represent the cusp of an exciting new dimension in science, a material revolution that is just now being tapped and is within the grasp of human comprehension.

The GLP aggregated and excerpted this blog/article to reflect the diversity of news, opinion and analysis. Read full, original post: [Running Shoes Printed from Synthetic Biological Material Have A Life Of Their Own](#)