

Spinning a new yarn: silicone fibers with living organisms

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In a feat once as unlikely as the miller's daughter of fairytale fame spinning straw into gold, scientists in the United Kingdom have spun fine threads of biocompatible silicone that contain living human brain cells. The cells remained alive and capable of growth afterward, they say.

"This has far-reaching implications and will enable significant advances to be made in technologies ranging from tissue engineering to regenerative medicine," Suwan N. Jayasinghe and Andrea Townsend-Nicholson state in their report.

It appeared Nov. 13 in ACS' *Biomacromolecules*, a bimonthly journal. "The ability to electrospin biologically active threads and scaffolds of living organisms will be tremendously useful for the development of a whole host of novel bioengineering and medical applications."

Electrospinning is a well-established process for drawing fibers out of a thick polymer by use of an electric field. The scientists used an electrospinning approach in which a concentrated suspension of living cells flowed through a tiny inner needle while thick poly(dimethylsiloxane) flowed from an outer needle. The silicone material formed a fiber around the cells. One of the many topics awaiting study, the researchers said, is how the process affects the biological properties of the cells in the long term.

Source: American Chemical Society

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