

Research Journal Highlights

The silk road to bio-integrated electronics

Nature Materials, April 19, 2010

A strategy for making flexible electronic circuits for bio-implants is reported online this week in *Nature Materials*. Dissolvable silk substrates enable the use of ultrathin, finely spaced electronic components that lead to improved electrode to tissue interfaces such as that between a brain and a computer.

Bio-integrated microelectronics need to be adjustable to highly convoluted structures like the brain. Currently, the necessary mechanical stability of the films requires the use of thick electronic circuits with limited flexibility. John Rogers and colleagues use flexible and bio-dissolvable silk substrates, onto which ultrathin and finely-spaced silicon electronic circuits are then transferred. In tests, the bio-integrated circuits showed a good electronic response to feline brain signals while exhibiting no inflammation for at least four weeks.

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