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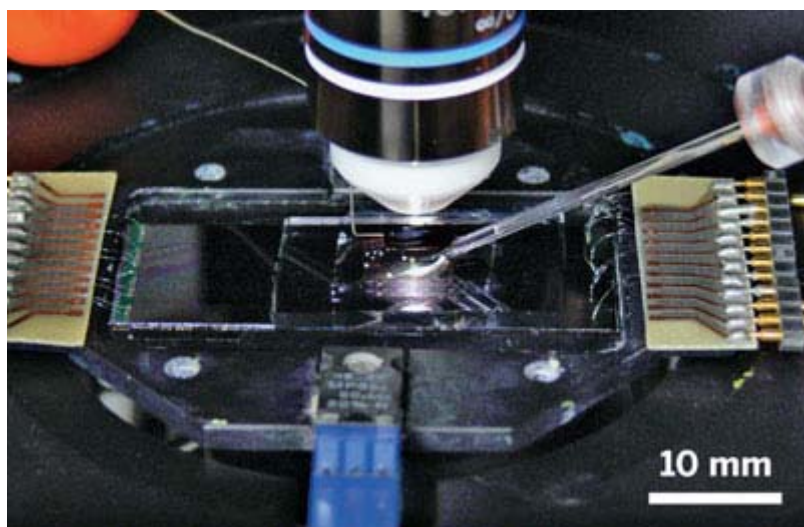
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Improved Nanowire-Cell Connections

Versatile new design allows individual cells to be oriented over nanowire transistor arrays for better recording of the cells' electrical activity

[Elizabeth K. Wilson](#)

It's already possible to connect tiny transistors fabricated from nanowires or carbon nanotubes directly to cells to record the cells' electrical activity. The procedure opens the way to fundamental biophysical studies of different types of cells and holds promise for new sorts of medical monitoring and treatment. [Charles M. Lieber](#) and colleagues at Harvard University have now increased the flexibility and versatility of such systems by creating arrays of nanowire transistors, which allows them to orient individual cells over specific nanowires and monitor electrical signals from several cells simultaneously (*Proc. Natl. Acad. Sci. USA*, DOI: 10.1073/pnas.0902752106). The researchers first prepared cultures of heart muscle cells on thin, optically transparent polydimethylsiloxane sheets. After orienting the sheets with subcellular resolution over silicon nanowire transistor arrays, the investigators recorded a variety of high-quality electrical signals from the different cells with "good spatial and temporal resolution," the team writes. [Zhong Lin Wang](#), a materials science and engineering professor at Georgia Institute of Technology, calls the research a "very exciting" development in the integration of nanowire nanotechnology and bioscience.



Proc. Natl. Acad. Sci. USA

In this experimental setup, thin sheets of heart cells are laid on top of nanowire transistor arrays.

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» [**Improved Nanowire-Cell Connections**](#)

Versatile new design allows individual cells to be oriented over nanowire transistor arrays for better recording of the cells' electrical activity.

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