

'Living tattoo' made with 3D-printed bacteria responds to stimuli

A team at MIT has genetically modified bacteria cells and developed a new 3D printing technique to create a "living tattoo" that can respond to a variety of stimuli. [Electronic tattoos](#) and [smart ink technologies](#) are showing exciting potential for reframing how we think of wearable sensor devices.

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To test out the technique the team created a 3D-printed patch of bacteria cells on an elastomer layer designed to resemble a tree. The bacteria in each branch of the tree was engineered to respond to a different chemical stimuli. When the patch was tested on a human hand that had been applied with different target chemicals the bacteria successfully illuminated its branches when sensing the corresponding chemical.

The ultimate outcomes for the technology are incredibly futuristic, with the team suggesting the technique could conceivably lead to the development of a kind of "living computer." Complex structures could be created that contain many different types of engineered cells that communicate with each other in the same way as transistors on a microchip.

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More immediate, pragmatic uses include the development of warning stickers that contain cells engineered to respond to a certain environment or chemical stimuli, or health-monitoring wearables that activate signals in accordance with a specific temperature or pH change.

Read full, original post: [3D-printed live bacteria creates world's first "living tattoo"](#)