

How ambient energy could power the Internet of things

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In the modern world, we are increasingly surrounded by digital sensors, cameras and communications devices sending data cloud-based analysis services. Those devices need power, and designers are finding new ways to draw it from ambient sources rather than rely on batteries or hard-wired grid connections. This week *Chemical & Engineering News* (*C&EN*), the newsmagazine of the American Chemical Society, examines energy harvesters and their role in the growing internet of things.

C&EN Senior Correspondent Marc S. Reisch explains that most [digital sensors](#) can easily be wired to existing electrical grids, but this is not always practical for certain locations like the insides of air ducts or the undersides of trains. Batteries, which must be periodically replaced or recharged, may also be unsuitable for hard-to-reach places. To meet this need for more versatile power sources, device makers are turning to [energy harvesters](#), which extract trickles of free power from [ambient light](#), heat or motion. Designs heading to the market include everything from comparatively simple solar cells to a wall switch that, rather than being hard-wired to a light fixture, uses the energy from pressing the switch to send a wireless signal to turn a light on or off.

Batteries and wired connections are unlikely to go extinct any time soon, however. Since the [ambient energy](#) that harvesters rely on may not always be present, they cannot meet the demand for 100 percent reliability that some applications require. Instead, energy harvesters can be used alongside batteries to extend charge life and provide passive

recharging. Still, those in the energy-harvesting business remain optimistic. They say the technology is improving, and that it will soon take off.

More information: "Powering the internet of things,"
[cen.acs.org/articles/95/i32/Po ... internet-things.html](https://cen.acs.org/articles/95/i32/Po...internet-things.html)

Provided by American Chemical Society

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