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A Nokia mobile phone battery
Nokia

[New Cell Phone Batteries to Last for Months](#)

Thanks to nanotechnology

Researchers from Stanford University have discovered a new way to use silicon nanowires in rechargeable batteries that power mobile phones, laptops, video cameras, iPods and other similar devices. The new [batteries](#) will be able to store up to ten times more electrical power than existing Li-Ion batteries. "It's not a small improvement. It's a revolutionary development", said Yi Cui, assistant professor of materials science and engineering, who lead the research for the new battery technology. Thanks to the new [concept](#), a mobile phone that now has a stand-by time of 6 days could operate for 60 days with a single full battery charge. The same goes for laptops, video cameras and other devices - they will be able to provide a much longer operating time compared to the one they are currently capable of. A standard Li-ion battery has an electrical storage capacity limited by the amount of lithium that can be retained in the battery's anode, usually made of carbon. When made of silicon, the anode can retain much more lithium, but silicon's disadvantage is that it pulverizes during charging cycles, lowering the battery's performance and life-cycle. The Stanford research team found a way to avoid this problem, by leveraging on nanotechnology. To store lithium, they use silicon nanowires, each with a diameter one-thousandth the thickness of a paper sheet. When soaking up lithium, the nanowires grow four times their size and then come back to normality, but due to their extremely small wired shape, they don't fracture in time. Hence silicon is better than carbon after all, it only has to be used as nanowires. This expanded storage capacity that Li-ion batteries proved to be capable of could make them appropriate for electrical cars and, as Mr. Yi Cui believes, also for homes and offices, where they could be used to store electricity produced by rooftop solar panels. Although the new batteries are not yet available, the Stanford team has filed for a patent and, hopefully, the batteries will start to be manufactured in 2008. Charging your [mobile phone](#) only six times a year - imagine that!