M. LENNIHAN/AP PHOTOS

Spot on: light-emitting diodes could offer an energy-efficient alternative to conventional bulbs.

directions, you end up concentrating all of the heat inward, which will eventually degrade the semiconductor.

So although replacement bulbs are available, and will probably get cheaper and better, LEDs may well conquer the home market only when consumers don't actually have to buy them. Craford predicts that the technology will end up being incorporated into custom-made fixtures, and pre-installed fittings in newly built homes of the future. Not trying to mimic a conventional bulb plays to the LED's strengths. The a.c. to d.c. conversion can be built into the fixture, or into the wiring of the new home. Because LEDs last so long, consumers will rarely need to buy replacements. And because they are small (about 5 millimetres square) and flat, they can be pointed in any direction, with fittings designed to send light exactly where it is needed.

But manufacturers of compact fluorescents won't give up their market share without a fight. There are billions of existing conventional outlets that are unlikely ever to house an LED. "Old technologies always die hard," says Steele. The adaptation of LEDs "will take years, probably a couple of decades", he says. "But it's going to happen." ■

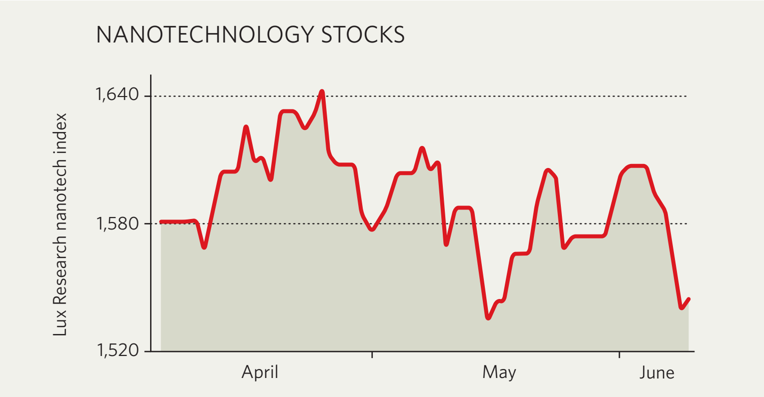
IN BRIEF

BACK IN BUSINESS Shares in British nanotechnology company Oxonica fell by more than half, from 118p to 53p, when trading resumed on 6 June. It had been suspended on 27 April after problems emerged with the company's largest contract, to supply diesel-fuel additives to Petrol Ofisi, a Turkish oil company (see *Nature* 446, 963; 2007). The contract has now been terminated. Oxonica, which originally spun off from the University of Oxford in 1999, makes nanoparticle-based additives that are widely used by bus companies in Britain.

STAFF TURNOVER British drugmaker AstraZeneca has become the fifth major drug firm to part company with its chief financial officer this spring. Jon Symonds, who has held the position at AstraZeneca for the past ten years, is leaving to become a managing director at Goldman Sachs. Since February, Merck, Pfizer, Wyeth and Amgen have also announced the departures — some voluntary, others not — of their top accountants. The change at AstraZeneca comes 18 months after David Brennan took over as chief executive, as the company struggles with product-pipeline failures and competition from generics.

REGULATION JAM China has published a comprehensive five-year plan to rebuild its system for regulating food and drug safety, *The Wall Street Journal* reported. The plan includes national monitoring of adverse reactions to drugs and extensive inspections of food-processing plant. "Monitoring and administering food and pharmaceutical safety must be at the very heart of grassroots and base work," the paper quoted the plan as saying. The plan appeared a week after a row broke out in the United States over the safety of toothpaste made in China.

MARKET WATCH



Nanotechnology stocks have enjoyed a good run lately. But although mainstream stock indices have risen over the past two months, nanotech has stalled as investors have started to lose patience with some of the more fancied companies in the sector.

The Lux Research nanotechnology index, which tracks companies that make or use nanotech products and technologies, stagnated over that period — and a few of its component companies have taken a serious hit.

One of the worst performers was Nucryst Pharmaceuticals in Wakefield, Massachusetts, whose stock has halved from a peak of US$4 in late March. The company has established a successful business selling nanocrystalline silver used in wound dressings, but it is struggling to win approval for what investors had hoped would be a yet-more lucrative line in dermatology drugs.

Things have been just as bad at Symyx Technologies in Santa Clara, California. Stock in this nanotech materials company plunged from $18 to $11 on 26 April, after it announced a small quarterly loss. The company has made extensive changes to its management, but the stock hasn't recovered any of its losses.

Arrowhead Research, a diversified nanotech company based in Pasadena, California, has fared better: its price has moved steadily upwards from $4 at the end of March, when it took over Carbon Nanotechnologies, a nanotubes company in Houston, Texas, to more than $7 today.

But overall, the market has been sluggish. "It had been running level with the Nasdaq," says Peter Hebert, chief executive of Lux Research, the New York consultancy that compiles the index. "But over the past couple of months, it has underperformed."

Colin Macilwain