THANK YOU MR EINSTEIN

Sixth formers no longer; it seems, care much for physics and maths. Between 1991 and 2005, when overall ‘A’ level entry rates rose by 12.1%, physics entries fell by 35.2% and maths by 12.6%. 2005 was a real nadir for physics – down 2% on 2004 and overtaken by media studies. However you look at it, these figures do not bode well for the long-term future of UK engineering.

I’m sometimes asked how we might reverse this trend. Really, it’s hard to think of anyone less qualified to answer. In my bog-standard boys’ grammar school we took maths and physics in droves. But the world has changed profoundly in the last 40 years, and it’s unlikely that the factors that shaped my ‘A’ level choices remain relevant today.

That’s one of the reasons I welcome the IET’s ‘Flipside’ magazine. All right, it isn’t quite my thing, but this only reinforces the impression of a publication wholly in tune with its young audience. So when I’m asked how to improve the uptake of the key engineering ‘A’ levels, my standard response is that I just don’t know.

But now I have a bit of an idea. A few weeks ago I attended a seminar at Cambridge University’s Cavendish Laboratory. Entitled ‘R&D – Beyond Einstein’, and promoted as an exploration of the unexpected links between ‘far out’ science and technology, it looked like a promising source of ideas for attracting young people into the wider world of science and technology. Indeed, it was the ‘big science’ speakers who stole the show.

In particular, Professor Ed Hinds of the Centre for Cold Matter at London’s Imperial College gave a wonderful description of how laser beams can be used to sap momentum from atomic particles until their average velocity is orders of magnitude less than a snail’s crawl. See Prof Hinds’ video of the reflection and focusing of these ultra-cold particles, and you’ll never doubt the wave nature of matter again.

The day ended with a glorious 60-minute charge through modern cosmology, courtesy of Professor Andy Fabian from Cambridge University’s Institute of Astronomy, featuring the most extraordinary video of the elliptical orbits of stars at the centre of our galaxy.

Irrefutable proof, according to Fabian, of the existence of a black hole.

Big science tends to be expensive, and one member of the audience asked how anyone could justify spending millions of pounds on a new telescope. In his answer, Fabian cited the wide public interest in astronomy and the subject’s role as a lure for attracting young people into the wider world of science and technology.

Perhaps this is part of the solution to reviving school maths and physics. After all, opt for media studies and you could make it big in the fast food industry; stick with science and maths and you might just get to bend atomic particles to your whim or plot the stars in their courses at the centre of the Milky Way. What could be cooler than that?

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