Nanotechnology

As current technologies seem to be reaching the limits of power and size, nanotechnology looks like its going to reinvent them from the bottom-up. In fact, it seems like no aspect of our lives will go untouched by this revolution.

As well as everyday applications, there are ways in which nanotechnology can dramatically affect our lives – from repairing our cells with miniature robots to pushing man further and further into space.

Although some of its applications may seem like far off, futuristic technology, most of it is already being put into development. For example, nanotechnology can help reproduce or repair damaged tissue. “Tissue engineering” artificially stimulates cell growth on a nanomaterial-based scaffold. Using this sort of technology, bones can be regrown on [carbon nanotube](http://en.wikipedia.org/wiki/Carbon_nanotube) scaffolds. For clothing and medical supplies, we can use silver nanoparticles which have antibacterial properties. These can eliminate infection risks in surgery and reduce odors coming from clothes.

Nanotechnology can also help us make extreme steps forward in the field of aerospace by making light but incredibly strong materials which can lift objects into outer space and developments in aluminum alloys can prevent failure and save up to $2,400,000,000 per plane. Materials will prevent cracking, increasing safety and are also more lightweight, reducing fuel consumption and environmental impact.

The applications of nanotechnology in quantum computers will mean that information can be sent without risk of hacking or interception

However, there are some risks – scientists don’t yet know what the full effects of nanoparticles are so a lot of research is needed before these technologies reach mass market. For example, there have been links between carbon nanotubes and cancers caused by asbestos. This is an area where we must be very cautious to prevent a disaster.