Knowledge from STFC’s Central Laser Facility (CLF) was used to develop laser techniques for eye surgery; an industry which generates £104 million per year for the UK

BACKGROUND
Excimer lasers are used in laser eye surgery procedures to sculpt the surface of the cornea and to permanently correct common problems such as near and far sightedness. In the early 1980’s CLF staff worked with excimer lasers to etch electrical components onto silicon chips. As a result, they developed rare expertise into how lasers interact with different substances, including organic material.

THE CENTRAL LASER FACILITY CONTRIBUTION
The knowledge gained at CLF was then applied to the emerging field of medical research - corneal reshaping. Through a unique collaboration between researchers at the Institute of Ophthalmology and a researcher, Tony Raven, from the CLF, one of the first successful methods of laser eye surgery was developed. This researcher then formed Summit Technology with investors, a US company that developed excimer lasers for medical use. The technology was developed over the next 10 years into an approved medical device. The company went on to become one of the top global manufacturers of eye surgery lasers, helping to establish this now popular surgery across the world. It was acquired by the Alcon division of Nestle for $893 million in 2000.

As the technology in this area has developed, new approaches have been established, but one of the key advances in the early days of eye surgery lasers came from knowledge developed at the CLF.

LASER EYE SURGERY FACT
There are approximately 115,000 laser eye surgery procedures performed in the UK each year. This generates sales of £104 million per year and 3000 direct jobs.

“ The key step in those early days that enabled the development of the eye surgery technique came out of the know-how developed at RAL in the CLF –Tony Raven, Chief Executive at Cambridge Enterprise ”