Sir William Perkin (1838-1907) Chemist
Inventor of Coal Tar dye: revolutionised the dye industry

William Perkin whilst investigating quinine accidentally created the first coal tar, or aniline dye, mauveine in 1856 aged 18 whilst an assistant at the Royal College of Chemistry. This was the first synthetic purple coloured dye, stable in use on silk, and it was patented. Perkin’s invention founded a dye works at Greenford, so a new industry, enabling inexpensive, brighter and clearer colours in fabrics was developed where previously animal derivatives had been used in dyes. Purple had been an expensive colour to create, hence the expression royal purple, (however even Queen Victoria wore a silk mauveine dyed dress to the 1862 Exhibition) but Perkin’s discovery took this and other bright colours to the masses. Mauveine was used in fabric colouring and on a stamp – the penny purple. His dye-works company eventually merged with ICI in 1931.


George Finch was one of the first staff members of the Chemical Engineering Department in 1913. His research interests were in electro-chemistry and later in electron diffraction. His hobby of climbing benefited from his academic work by the introduction of ‘portable’ but complex to use and still heavy (14.5 kg) oxygen equipment for use at high altitude. Cumbersome though the ‘English Air’ as the local porters called it, the system enabled greater heights to be gained. The system was used on the 1922 expedition to Everest enabling the height of 8326 metres to be reached.
Case Studies: College Inventors through the Centuries

Professor Denis Gabor (1900-1979) Elec. Eng.  
Inventor of Holography and Flat Television Tube

Hungarian by birth, Denis Gabor and his brother George were encouraged by their father to undertake experiments from an early age and built electronic equipment at home. Gabor always thought of himself as an inventor. Educated in Germany gaining his PhD in 1927, he worked for Siemens and Halske AG. As Hitler came to power in 1934, Gabor emigrated to England, working for British Thomson Houston (BTH) Rugby where he invented holography. Gabor’s invention led to a BTH patent in 1947. His work was valuable, but when WWII broke out, he was only allowed to work in a hut in the grounds, as a Registered Alien with Special Qualifications. Imperial appointed Gabor Reader in Electron Physics in 1948. During the 1950s, he worked on the flat television tube, becoming Professor of Applied Electron Physics in 1958. Gabor was appointed FRS in 1956. He was awarded the Nobel Prize for Physics in 1971 for his ‘invention and development of the holographic method’. His pioneering research on holography in the 1940’s was developed by the use of laser technology, to make 3D images e.g., now to be found commonly on credit cards for identification.

Professor Harry Elliot (1920-2009) Physicist  
Pioneer of Cosmic Ray Detector, Magnetometer

Harry Elliot was a leader on the geophysical and astronomical aspects of cosmic rays, and at College he led the Cosmic Ray and Space Physics Group, which built a cosmic ray detector for the first British scientific satellite, Ariel 1, launched in 1962. Elliot had worked with Patrick Blackett in Manchester, and moved with him to Imperial as Lecturer in 1954. Successively Elliot became Reader in 1957 and Professor of Physics in 1960. Seeing himself as someone who was a facilitator of things he saw should happen, Elliot developed relations with the European Space Research Organisation (ESRO) which was begun in 1964. The Cosmic Ray Group built scientific instruments for ESRO’s first satellite, ESRO II, launched in 1967, which measured cosmic rays and other energetic particles in near-Earth space. In 1968 the group provided instruments to the
first European mission extending beyond the earth’s magnetosphere, HEOS-1. (HEOS :Highly Eccentric Orbiting Spacecraft). The instruments measured cosmic rays, energetic particles, and magnetic fields in space. The College led magnetometer was developed for a mission in 1978 which was delayed until the 1980s. Elliot was elected FRS in 1973 and retired in 1980.


College Lecturer 1953, Senior Lecturer 1958 and Professor of Heavy Electrical Engineering between 1964 -1986. Eric Laithwaite worked on linear motors, the horizontal structure of which creates a magnetic field capable of propelling objects with friction-free movement, which was patented 1956. The linear motor led to the development of the Maglev train with a government research grant of £5 million and a prototype for the world’s first magnetically levitating high speed train. The UK project was shelved by the then Government, but successfully developed in Germany and Japan. After retirement from College, Laithwaite worked at Sussex University, funded by NASA to develop linear motors for spacecraft propulsion.

Prototype of the Mag-Lev train

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