

These web pages tell the story of the development of one of the most useful and widely used scientific instruments of late 20th and early 21st century. We describe the major scientific impact and the implications for worldwide research from the inception of the project in 1968 to the time the machine was switched off in 2008.

Synchrotron radiation is very bright light produced from a machine called an electron synchrotron, hence the name. This light is emitted in many different wavelengths starting at the infrared (at the low energy end) rising in energy through the visible; ultra violet; soft X-ray and finally to the hard X-ray region. You can use this light to study your material and, depending on which part of the light spectrum you choose, you can find out different properties of your sample.

This remarkable story begins at Daresbury Laboratory in Cheshire, which is geographically half way between Manchester and Liverpool, England. In the early 1960s the physicists interested in the structure of the atomic nucleus had built themselves a particle accelerator onsite and were colliding subatomic particles together (just like they do at CERN). This accelerator was called NINA and produced many results for the physicists who used it. However that is not the subject of this web site, in fact it is just the starting point.

It was known that machines like NINA produced synchrotron light but the exploitation of this feature was being carried out in only a few laboratories worldwide. In the UK, after a brief exchange of letters between an enthusiastic group of scientists and the director of Daresbury in the late 1960s permission was given to construct a test facility to use the light on NINA. This was called the synchrotron radiation facility SRF and it ran until the closure of NINA in 1977. The SRF was so successful that the UK decided to build the world's first synchrotron radiation source dedicated for fully supported, open access scientific research operating primarily in the X-ray region of the electromagnetic spectrum. The new machine was called the SRS; it was highly successful and was the forerunner of a large expansion in the development and use of synchrotron radiation - there are now around 70 such sources worldwide.

Between 1981 and 2008 the SRS provided over 2 million hours of beam for a wide range of scientific research. Around five thousand publications resulted together with various patents and there were a number of prizes gained by those who obtained results on the SRS (for example John Walker who won the Nobel Prize for Chemistry in 1997). 25 years of operation of the SRS was celebrated in style in 2005 and highlights together with lists of publications can be found in the Annual Reports.

The ceremonial switch-off of the SRS was undertaken by Prof Ian Munro on 4th August 2008; it

was open to all staff and was recorded for posterity. Those who had worked on the machine, in whatever capacity, were then invited to a party hosted by Ian Munro. Staff were also presented with a limited edition medallion to commemorate the contribution made to scientific discovery by the SRS at Daresbury. It was, however, deemed inappropriate to have a grand celebration of the end of the SRS as this was hugely unsettled and uncertain time for many staff with transfers and redundancies. Indeed, staff who worked on the SRS can now be found at many other facilities round the world.

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