Editorial

J. Synchrotron Rad. (1999). **6**, 1069–1070

Synchrotron radiation sources in the news and *JSR* goes online

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With this issue, we celebrate the fifth anniversary of the journal. Since the launch, approximately 850 papers and 3800 pages have appeared. The journal has published the proceedings of two main synchrotron radiation conferences, SRI'97 (May 1998 issue) and XAFS X (May 1999 issue), where new standards for these proceedings have been set. The journal now features in the top 17% of the Science Citation Index (4800 journals). Its impact factor is greater than that of *Rev. Sci. Instrum.*, *Nucl. Instrum. Methods*, *J. Phys. A* and *J. Phys. C*, and is approaching that of *Phys. Rev. C* and *Phys. Rev. E*. Thus, the *Journal of Synchrotron Radiation* (*JSR*) has become clearly established and this it owes to the confidence the community has placed in it from its launch.

JSR is continuing to develop and is striving to be the focus of the whole of the synchrotron radiation community from 'source to science'. A major development for *JSR* this year has been the launch in August 1999 of the new and innovative electronic journal service, Synchrotron Radiation Online. This gives easy access to the complete text of all regular 1999 articles. The articles are available in HTML and PDF formats, and are richly hyperlinked for easy navigation within and between articles. The service also provides search mechanisms, e-mail alerting and immediate access to supplementary data. Access is free to the service during 1999, but will require a subscription to the journal in 2000. We ask you to visit http://journals.iucr.org/s/journalhomepage.html to see the service for yourself.

The first Nobel prize for synchrotron radiation-based work, awarded to Sir John Walker of the MRC's Laboratory of Molecular Biology (see Editorial, November 1998), was marked by a dedicated issue on structural biology (Vol. 6, Part 4). The issue gathered together several excellent articles from the leaders in the field demonstrating the transformation in structural biology brought about by synchrotron radiation. The importance of synchrotron radiation for structural biology is recognized by the funding agencies around the world. In the USA, NIH has increased its commitment to the synchrotron radiation sources by providing an extra injection of funds to several US facilities. In the UK, the Wellcome Trust, a large medical charity, provided ~$160M last year towards the replacement of the SRS Daresbury. The UK government had been expected to provide the remainder of the cost but, in August, French Science Minister Claude Allègre announced the participation of the French government in the UK's DIAMOND project (Fig. 1). He also announced the abandonment of the French project SOLEIL (Fig. 2). Allègre has argued that money spent on large 'big science' facilities should be rerouted into research projects. The announcement by Allègre has angered a wide spectrum of scientists in France. Some of this anger was witnessed at the recent SRS Users Meeting where senior officials of the UK Ministry of Science and Technology were present. The decision to make DIAMOND the single source for the two

Figure 1
An artist's impression of DIAMOND at the Daresbury site. DIAMOND is optimized for 3 GeV operation.

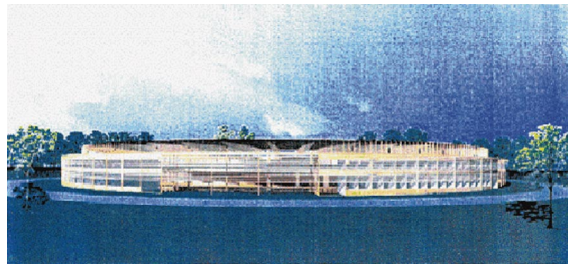

Figure 2
An artist's impression of the proposed SOLEIL facility. The design stipulates two long straight sections for advanced insertion devices including a free-electron laser.

communities has caused concern on grounds of sufficient capacity and potential delays. The two communities are currently served by three storage rings (SRS, DCI and SuperACO). The SOLEIL design was optimized for a lower energy and a well defined time structure, while DIAMOND has always been rated at a higher energy of 3 GeV. At this meeting the concept of a 'mega-accelerator (science)' complex was outlined by the British Director General of the Research Councils, Dr John Taylor. The siting of DIAMOND has attracted the attention of the press and the politicians in the UK also. The arguments have ranged from 'building on current strengths' to the creation of a single 'mega' complex.

We wish to recall that dedicated synchrotron radiation facilities were born in the 1980s with SRS Daresbury being the first dedicated multi-GeV storage ring constructed specifically for synchrotron radiation science. Much of the success of synchrotron science is owed to these dedicated synchrotron radiation sources the world over. The achievements of these facilities lie in the excellent cooperation that has developed between those who design and run the source and those who exploit it. Each group appreciates the problems of the other, and this has led to improvements in accelerator design and synchrotron radiation optical and experimental systems proceeding side-by-side, always with the aim of providing a better light source for the end user. The 1990s have seen the development of many third-generation sources where the primary sources of radiation are insertion devices. The prospect of new sources such as the SLS (Swiss Light Source), DIAMOND and perhaps SOLEIL promises a new class of insertion devices, the so-called micro-gap undulators and long undulators (up to 14 m). These are expected to mark the next step in dedicated synchrotron radiation sources.

We urge the community worldwide to ensure that their scientific peers and the political masters do not begin to regard synchrotron radiation as 'mega-science' and thus lose the clarity of purpose which has been achieved through the establishment of dedicated light sources serving a very large number of users from a broad scientific spectrum. The nature of science at synchrotron radiation facilities is project-based with very small teams. Large numbers of these small important scientific projects cluster together to utilize a common facility making synchrotron radiation centres the most multidisciplinary in nature. The success of these synchrotron radiation centres has very much depended on the common purpose, namely the production and utilization of the best light source, and is the reason why synchrotron radiation has become accessible to non-physicists so widely. Synchrotron centres should thus not be confused with 'mega-science' or 'mega-accelerator' complexes.