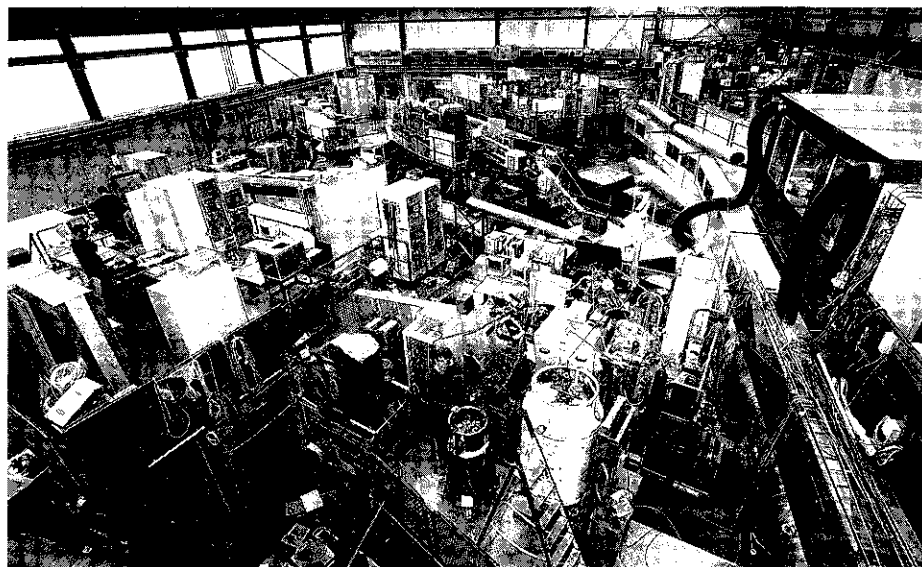


More than 1900 experimenters now use synchrotron radiation facilities at DESY's HASYLAB. Synchrotron radiation is well suited to determine the electronic and geometrical structures of atoms and molecules, and has widespread applications.



could also drive an X-ray free electron laser and deliver electrons to a pulse stretcher ring for nuclear physics experiments (the ELFE project). DESY's linear collider development programme was summarized in a previous article (October 1997, page 12).

As well as particle physics, DESY has acquired other strings to its bow. Early in its history, DESY soon capitalized on the trend towards electron-positron colliders, first with the 9 GeV (4.5 GeV per beam) DORIS, commissioned in 1974 and subsequently upgraded to 11 GeV, and then PETRA, operating up to 47 GeV. Experiments exploiting synchrotron radiation started at DESY in 1964 in parallel with particle physics experiments and it was hence natural to exploit these storage rings for their spinoff synchrotron radiation.

This burgeoned into a full research programme, and more than 1900 experimenters now using synchrotron radiation facilities at DESY's HASYLAB (using DORIS, and in a parasitic mode PETRA) complement

the laboratory's traditional particle physics activity. Synchrotron radiation is well suited to determine the electronic and geometrical structures of atoms and molecules, with widespread applications in medicine, solid state physics, chemistry, crystallography, geoscience, materials science and molecular biology.

Work at DESY in this latter sphere is in close collaboration with the European Molecular Biology Centre (EMBL), where DESY technology and infrastructure has played a vital role. In total some 700 biologists from all over Europe, including three Max Planck groups, use DESY facilities. Major advances using this synchrotron radiation have come in non-invasive coronary angiography, enzyme and semiconductor structure, etc. As well as being scientific advances in their own right, these studies provide DESY with a useful multi-disciplinary atmosphere and outlook.

DESY is poised for a graceful entry into the next century.

US forward look

To guide thinking, every few years the High Energy Physics Advisory Panel (HEPAP) of the US Department of Energy commissions a subpanel to help plan the emerging scenario for US high energy physics. The latest such report is by a subpanel chaired by Fred Gilman of Carnegie Mellon.

The previous such report, in 1994 by a subpanel chaired by Sid Drell of SLAC, had to face the situation in the US following the demise of the US Superconducting Supercollider in 1993. The Drell report recommended that the US join the LHC project at CERN to build a proton collider in the 27 kilometre LEP tunnel.

US involvement in this project is now assured, and was formally recognized by the signing of an agreement in Washington last December (January, page 1).

'The financial and intellectual scale of future facilities means that international collaboration in their design and construction is increasingly necessary,' says the Gilman report. 'This trend is exemplified by US participation in the LHC collider at CERN.'

Meanwhile the Subpanel places highest priority on optimum utilization of the forefront facilities nearing completion and recommends that funding for operation of the Fermilab Tevatron collider, the PEP-II electron-positron collider at SLAC, Stanford, and the CESR electron-positron collider at Cornell, and for the physics groups using them, be at a level that ensures they fulfil their physics potential.

In particular, the Tevatron will remain the world's highest energy collider until commissioning of the LHC in 2005, and, following the closure of CERN's LEP electron-positron collider, from 2001-5 will be