



## ● ILL Reactor Refurbishment

The Institute Laue-Langevin's (ILL) Steering Committee meeting in Caradache, France, late last month formally decided to proceed with the proposed 323 MF refurbishing of the ILL's high-flux reactor vessel involving the complete replacement of its elements. Restarting the reactor, which has been shut-down for a year, is planned for mid-1994.

The decision follows an agreement between representatives of the three partners (Germany, France and the UK) defining operating conditions (essentially the operation of at least 25 scheduled instruments with five experimental cycles each year) for the 10 years following the restart. The partners will share scheduled instrument time on a *pro rata* basis as the UK's committed contribution to the annual operating budget, at least in the beginning before an eventual re-equilibration and without other possible contributions, is 14 MF less than the 90 MF each for Germany and France. The Steering Committee hopes other countries will become Scientific Partners to make up the short-fall of 20-30 MF with respect to the normal operating budget.

## ● Gan Sasso Validates Basic Model

Fusion reactions in the sun are thought to produce  $p\bar{p}$ ,  ${}^7\text{Be}$  and  ${}^8\text{Be}$  neutrinos but measurements with detectors sensitive to  ${}^7\text{Be}$  and  ${}^8\text{Be}$  have revealed that the solar neutrino flux is less than half the theoretical value (124–132 Standard Neutrino Units): this is the solar neutrino problem. Two experiments set about measuring all three neutrino species. SAGE in Baksan (Caucasus, CIS) reported last year a flux of 20 SNU so it seemed that a shortage of  $p\bar{p}$  neutrinos also arose, thus eliminating some explanations for the problem. The INFN Gran Sasso Underground Laboratory in central Italy [EN 21 (1990) 123] announced on 1 June that the average of 14 flux measurements made during one year using the GALLEX detector (101 t of aqueous gallium chloride solution) was 83 SNU. T. Kirsten who heads the Max-Planck Institute for Nuclear Physics, Heidelberg, team participating in GALLEX emphasises that the data "clearly implies"  $p\bar{p}$  neutrinos have been observed for the first time, thus confirming basic hypotheses of stellar energy generation. Indeed, the  $p\bar{p}$  flux seems to be that predicted by the standard solar model. The real problem is the deficit of high energy (Be) neutrinos. There is no explanation for the SAGE result.

The GALLEX collaboration supports the plan to continue data taking for the several years originally proposed. The three years presently scheduled will reduce statistical errors by about one-half (to 10 SNU) to allow firmer conclusions. A test of the whole experiment in late-1993 with a  ${}^{51}\text{Cr}$  source will be important. The laboratory is expanding with improved infrastructure and

two new underground halls to accommodate a new experiment. Professor Kirsten thinks his team may come to miss the "pioneering atmosphere" of a "fine institute which helps international science without borders" in an "exceptional manner".

## ● Laser/Electro-Optics Conference

P. Knight, Chairman of the EPS Quantum Electronics and Optics Division, and the Presidents of the IEEE Laser and Electro-Optics Society (IEEE-LOS) and of the Optical Society of America (OSA) signed an agreement last month to establish a joint steering committee to organize, from 1994, *The European Conference on Lasers and Electro-Optics* conference series modelled on the highly successful CLEO conferences.

CLEO/Europe — initially biennial — will comprise an exhibition, a conference on lasers and electro-optics, and the present European Quantum Electronics Conference (EQEC) or the international version (IQEC) when it is held in Europe. So Europe is moving towards "a single major exhibit and meeting on lasers, electro-optics and quantum optics". Professor Knight adds that "towards this end, we shall invite the European Optical Society and other interested pan-European societies to join us as full and active participants".

## ● Science Academies and E&CE

Representatives of national Academies of Sciences and Humanities from all of Europe meeting in March in Stockholm added their

### INSTITUTE OF PHYSICS AND ASTRONOMY AARHUS UNIVERSITY, DENMARK Associate Professor

Applications are invited for a tenured faculty position at the Institute of Physics and Astronomy within the field experimental-atomic, molecular and optical physics, beginning December 1, 1992. Candidates will be considered at the Associate Professor ("Lektor") level.

The position has been established to expand the Institute's research in collisional physics, quantum optics, and spectroscopy. Furthermore, the invitation aims at strengthening the utilization of ASTRID, our newly constructed storage ring, through the development of an experimental research programme within the fields of research mentioned above.

Applications should contain a detailed description of the planned research programme, a *curriculum vitae*, and information about research and teaching experience, including a list of published scientific papers and, if possible, three copies of each of these. Additional material which may elucidate the research and teaching qualifications of the applicant is appreciated.

The recommendation of the evaluating committee will be sent in full to all applicants. For further information, please contact Professor T. Andersen, Institute of Physics and Astronomy, telephone: +45 86 12 88 99.

Applications should be sent to Aarhus University, Ndr. Ringgade 1, DK-8000 Aarhus C, Denmark, marked 212/5-41, arriving no later than **September 1, 1992**, at 12.00.

### INSTITUTE OF PHYSICS AND ASTRONOMY AARHUS UNIVERSITY, DENMARK Assistant Professor

Applications are invited for a 4-year position in experimental sub-atomic physics, commencing December 1, 1992.

Activities within this field are mainly based on large accelerators abroad. The applicant should therefore be prepared to travel and to stay abroad during longer periods. Since the Institute's research is conducted in narrow collaboration between experiment and theory, the applicant's merits in planning and analysis of experiments are of importance.

Each applicant should submit a *curriculum vitae*, a description of research and teaching experience, a list of publications and three copies of publications to be considered in the evaluation. Additional material which may elucidate the research and teaching qualifications of the applicant is appreciated.

According to Danish ministerial regulation, the selection committee's written evaluation of the applicants will in due course be sent to all applicants. Applications should be addressed to the Aarhus University, Ndr. Ringgade 1, DK-8000 Aarhus C, Denmark, and marked 212/5-39.

The deadline for the receipt of all application material is **September 1, 1992**.

For further information on salary, research and teaching duties, staff and other facilities, please contact: The Chairman of the Institute of Physics and Astronomy, Aarhus University, Ny Munkegade, DK-8000 Aarhus C, Denmark. Telex 64 767 aausci dk, telephone: +45 86 12 88 99, telefax: +45 86 12 07 40.

voice to the many organizations calling for immediate steps to rescue "the precious part of world science and culture" found in eastern and central Europe (E&CE). It was also decided to better coordinate efforts by holding an annual meeting of Academy representatives, and by opening a small information centre at The Royal Society of London pending proposals for a permanent scheme to share information on initiatives such as those by the French Academy of Sciences.

J. Friedel writes to say that the French Academy, in advising the French Government on various aspects of east-west exchanges, has encouraged the development of a uniform policy for science based on help to develop centres of excellence via

short-term projects and exchanges. This is in line with the policies of the academies of science in the republics making up the former Soviet Union (FSU). A Royal Society evaluation completed last December concluded that the republics will be unable to maintain science at the "broad scale inherited from the Soviet era". They will instead aim at **selectivity** (high quality, interdisciplinary teams, close links with higher education, and funding based on peer-reviewed grants).

France provided nearly 200 grants in 1991 for young scientists, mostly from the E&CE and not the FSU, for studies leading to the first step of the usual 3-year Ph.D. 1992 will see an increased number of grants for Ph.D.'s, involving both 50% and 100%

of the spent time in France. More places at summer schools will be made available for Ph.D. students from the FSU and E&CE. French scientists made some 600 visits of 6-12 months in 1991, nearly one-half to Russia and the Ukraine. Government organizations are urged to assist individuals to establish the **personal contacts** that have so far produced most of the results.

The French Academy supports the continuation of grants for Ph.D.'s and visits, but considers longer visits or repeated shorter ones as being optimal. Also **recommended** are: literature sent directly to specific laboratories; a small stream of top-class permanent recruitments; and support to help Russian and Ukrainian scientists at home provided it is selective, judged by peer review and independent of bilateral contracts.

## PROFESSORSHIP IN EXPERIMENTAL PARTICLE PHYSICS

The University of Bergen, Norway, invites applications for a vacant professorship in experimental particle physics at the Department of Physics.

The professorship is in experimental high-energy particle physics, with the main aim of strengthening Bergen's participation in the research on electron-positron collisions at LEP/DELPHI at CERN.

A detailed description of the subject area and responsibilities involved, special duties and other conditions which will be of importance in making the appointment, are to be found in a separate specification which may be obtained on request from the Secretariat, Faculty of Mathematics and Natural Sciences, N-5020 Bergen, Norway.

Salary will be as defined by l.tr. 26 of the civil service scale, currently 293757 NOK per annum gross. An obligatory contribution to the pension fund, currently 5746 NOK per annum, will be deducted from this salary at source.

The professor will be required to take part in teaching and examination duties as laid down in the applicable regulations, and must accept without compensation, changes in subject area, pension arrangements and retirement age as decided by law or by the King in Council.

Women are particularly encouraged to apply. If the appointment committee finds several candidates to be approximately equally qualified, the rules contained in the Equal Opportunities Protocol for the University of Bergen, will be applied.

Applicants should submit 5 copies of all scientific articles, published or unpublished, which they wish to be taken into consideration. In addition, candidates must provide 6 copies of a list giving publication details of the work submitted, together with 5 copies of their application and enclosures.

The scientific articles should be numbered and sorted into 5 sets, and sent to the Secretariat of the Faculty of Mathematics and Natural Sciences, University of Bergen, within one month of the final date for application. Scientific articles in preparation on the application date, may be submitted within three months of the final date for application, provided that notice of this is given when the main body of the scientific production is submitted.

The Procedural Rules for the Appointment of Professors at the University of Bergen will be applied.

The application, which must contain complete information of education, previous appointments and other activities, should be addressed to "Det akademiske kollegium", and should be sent together with authenticated copies of relevant documents and a copy of the list of scientific articles to the Secretariat, Faculty of Mathematics and Natural Sciences, University of Bergen, N-5020 Bergen, Norway, by **August 15, 1992**.

### ● Superconducting Super Collider Vote

The US House of Representatives passed an amendment on 17 June to the fiscal '93 Water and Energy Appropriations Bill to cut further Department of Energy funding to construct the  $8.2 \cdot 10^9$  \$US Superconducting Super Collider in Ellis County, Texas. Possibilities now include: the Senate restores funds, the President vetoes the Bill, or a "continuing resolution" allows funding at the '92 level.

### ● Human Capital and Mobility

The 1992-4 Human Capital and Mobility programme was **launched** last month. The first selection round covers a 109 MEC allocation for activities starting in 1993. Applications for another round covering part of the balance of 379 MECU are due in November. Up to maybe one-third of the exact sciences allocation of 45% could go to physics, to be split between fellowships (45%), networks (41%), large-scale facilities (11%), and euroconferences (3%).

An information package, including application forms, is available from: DG-XII-H-1, Rue Montoyer 75, B-1040 Brussels (tel./fax: +32-2-236 02 54 / 236 33 07).

## Conference Support

The Commission of the European Community's Directorate for Science and Technology (DG- XII) pointed out to Maurice Jacob, the EPS President, during a visit to Brussels that the 487 MECU EC Human Capital and Mobility Programme for 1992-4 has assigned European conferences 3% of the first budget allocation designated for the exact and natural sciences (49.1 MECU). While there are no quotas, physics could expect to receive one-third of the 3% (equivalent to  $\approx 5.0$  MECU) for events starting after 1 November 1992. Further allocations will follow. The EPS/ESF-organized series of European Research Conferences in Physics represents only a small fraction of the sum available so organizers are urged to apply separately in the case of other events. It would help if these organizers kept the EPS Secretariat informed.

DG-XII also indicated that it would possibly welcome proposals from EPS for a limited number (maybe only one in the first

instance) of studies on the medium-term future for the various areas of physics.

The other subjects which were discussed included information channels, east-west aid and refereeing. The launching of the mobility programme and the special programme for east and central Europe, and the start of the process leading to the next Framework programme, require improved communication with physicists *via* EPS channels. A budget line covering the EPS library aid programme is in principle available and a similar line may materialise in due course for the former Soviet Union and for Yugoslavia.

#### 1993 H.-P. Europhysics Prize

If you intend to submit a nomination please inform the Secretariat by 30 June 1992.

## APS-EPS Meeting Defines Joint Actions

The 20th anniversary of Hungary's bilateral cooperation with the US National Science Foundation was a fitting time for EPS and the American Physical Society to meet in Budapest to out work ways to help physics in east and central Europe (E&CE). The meeting developed from discussions between groups in the two Societies tackling the region's difficulties. The EPS has formally established the East-West Coordination Committee (EWCC) and the APS recently appointed Irving Lerch as its Director of International Scientific Affairs to strengthen international activities. He draws upon the International Physics Group (IPG) and Committees on International Scientific Affairs and on International Free-

dom of Scientists (CISA and CIFS).

The meeting was hosted by I. Lovas, Director-General of the Central Research Institute of Physics of the Hungarian Academy of Sciences. The EWCC and the Presidents of the two Societies met separately and then together in plenary sessions in order to map out a coherent set of detailed **actions** and overall **strategies**. The latter will be articulated by the Presidents *via* joint letters and declarations which, as far as the E&CE is concerned, promote a "bottom-up" approach, centres of excellence, universal access to modern communication systems, and international peer review.

Priority actions are:

- To catalogue *communications* problems (notably in the area of electronic mail) and to develop plans for specific countries with exceptionally bad computer networks.

- To improve the distribution of *information* by coordinating databases (library needs, electronic communications, the status of programmes, etc.) and by launching new ones; and by combining networks, notably the EWCC, the APS database on volunteers ready to serve in E&CE, and the IPG Information Net of local contacts.

- To develop mechanisms whereby APS could participate with EPS in *summer schools* and workshops modelled on the EPS Southern European School in Physics and based on proposals prepared by national societies and Divisions.

- To expand and consolidate existing databases on used *equipment* and to establish distribution mechanisms.

- To coordinate *library* support: the APS agreed to ship, *via* EPS, one complete one-year set of all APS publications to each of the eight countries in the region and the EWCC will intensify efforts to raise funds for the library aid programme. The back issues campaign will be extended to the US.

- To draw up a joint list of qualified peer reviewers and to respond to requests for reviews. The importance of *peer reviews*, and the Societies' willingness to help, will be stressed by distributing a joint Presidential letter to authorities in the region.

- To establish guidelines defining *centres of excellence* and to respond to requests to promote new centres. A preliminary step will be to complete the EWCC directory of physics institutes.

- To promote EWCC efforts to develop regionally-based *graduate programmes*.

- To better coordinate the announcement and planning of EPS and APS *conferences*.

- To support E&CE participants to the *Physics Olympiad* in 1993 in the US.

A number of items clearly require further consideration before discussing specific actions at the next joint meeting in Amsterdam on 2/3 October 1992. For instance, ways need to be identified to help stem the brain drain, provide training abroad while education and research is being reformed, support truly competitive peer review systems, and promote regional collaboration between groups.

### BERGISCHE UNIVERSITÄT- GESAMTHOCHSCHULE WUPPERTAL

#### *The Institute for Materials Science*

invites applications for three newly-created, tenured faculty positions:

**FULL PROFESSOR** (Universitätsprofessor C4) of  
*Experimental Physics* in the area of condensed matter science

**ASSOCIATE PROFESSOR** (Universitätsprofessor (C3) of  
*Applied Physics* in the area of high-frequency superconductivity

**ASSOCIATE PROFESSOR** (Universitätsprofessor C3) of  
*Microstructure Technology* in the area of low-pressure plasma research and applications.

Successful applicants for the physics positions will be appointed to the physics faculty. The Professor of *Microstructure Technology* will become a member of the Department of Electrical Engineering, and, in addition, will serve as Deputy Director of the Research Centre of *Microstructure Technology*. Each faculty member is expected to participate in research, teaching, and further development of the newly-formed curriculum in materials science. The full professor position is contingent upon approval of the materials science curriculum by the Senate.

Applicants must satisfy the legal requirements of the Land Nordrhein-Westfalen for the above appointment, namely Habilitation or the equivalent scientific merits or degrees. They should send their *curriculum vitae*, a summary of their scientific career including teaching experience and a list of publications by the 5th of October 1992 to the Director of the *Institute of Materials Science*, Prof. Dr. S. Dietrich, Fachbereich Physik, Bergische Universität-Gesamthochschule Wuppertal, Postfach 100127, W-5600 Wuppertal 1, Federal Republic of Germany.