

- [3] Schülke W. and Mourikis S., *Acta Cryst. A* **42** (1986) 86.  
 [4] Bross H., *J. Phys. F* **12** (1982) 2249.  
 [5] Berko S. in *Positron Solid State Physics*, Proc. Int. School of Physics "Enrico Fermi", Eds. W. Brandt and A. Dupasquier (North-Holland, Amsterdam) 1983.  
 [6] Pattison P., Hansen N.K. and Schneider J.R., *Z. Physik B* **46** (1982) 285.  
 [7] Bagayoko D. et al., *Phys. Lett. A* **76** (1980) 187.  
 [8] Loupiaz G. et al., *Phys. Stat. Sol. (b)* **102** (1980) 79.  
 [9] Sakai N. and Ono K., *Phys. Rev. Lett.* **37** (1976) 351.  
 [10] Yamamoto S. et al., *Phys. Rev. Lett.* **62** (1989) 2672.  
 [11] Cooper M.J. et al., *Phys. Rev. B* **34** (1986) 5984; Collins S.P. et al., *J. Phys.: Cond. Matter* **1** (1989) 9009.  
 [12] Lam L. and Platzman P.M., *Phys. Rev. B* **9** (1974) 5122; Bauer G.E.W. and Schneider J.R., *Phys. Rev. B* **31** (1985) 681.  
 [13] Bauer G.E.W. and Schneider J.R., *Z. Physik B* **54** (1983) 17.  
 [14] Charlesworth J.P.A. et al., *Proc. 20th Int. Conf. on the Physics of Semiconductors* (World Scientific) 1991.  
 [15] Bell F. et al., *J. Phys.: Cond. Matter*, in print.  
 [16] Bell F. et al., *Phys. Rev. B* **41** (1990) 4887.

## REPLACEMENT

A few copies of *EN* (22, December) 1991 contained duplicates of pp. 209-212 instead of pp. 205-208. We apologize for the error. Please contact the Secretariat for replacements.

## UNIVERSITY OF COPENHAGEN

### The Niels Bohr Institute

Applications are invited for a Chair (Professorship) in **Experimental Physics** at the Niels Bohr Institute, to commence 1 November 1992.

The Professor will be appointed as a Civil Servant under the Ministry of Education and Research. The annual salary will amount to approximately 360 000 Danish kroner.

The chosen candidate is expected to take part in the experimental research activities of the Niels Bohr Institute, — either in low- and medium-energy nuclear physics in connection with the Tandem Accelerator Laboratory and accelerators abroad, — or in experimental high-energy particle physics in connection with the Institute activities at CERN.

The Professor will also participate in the University teaching at all levels. The language of instruction is Danish, but English will be accepted for the first two years of the appointment. In the evaluation of the applicant, importance will also be given to teaching experience and qualifications.

Information about research plans, facilities and staff at the Niels Bohr Institute may be obtained from the **Director, Blegdamsvej 17, DK-2100 Copenhagen Ø, Denmark**.

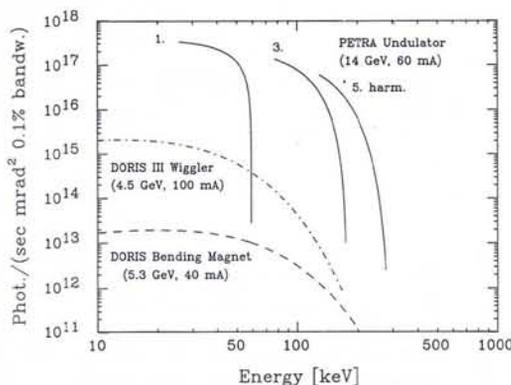
Applications should include a *curriculum vitae*, a complete list of publications, copies of scientific publications and further documentation which the applicant wishes to be considered, and a brief outline of proposed research. Information concerning the applicant's teaching experience, to be evaluated by the Study Board, should also be enclosed. The material should be submitted in triplicate together with a complete list of the material.

After evaluation of the applicants' qualifications by a specially appointed Evaluation Committee, the Committee's report will be sent to all applicants.

Applications are to be addressed to Her Majesty the Queen of Denmark, and sent to the **Faculty of Natural Sciences, Panum Institutet, Blegdamsvej 3, DK-2200 Copenhagen N, Denmark**. The closing date for receipt of applications is **1 April 1992**.

## PETRA By-Pass

### A Fourth Generation Synchrotron Source



*Brightness of a 5 m long undulator which could be installed at DESY, Hamburg, in a by-pass of HERA's PETRA booster storage ring. The solid lines represent the brightness of the first, third and fifth harmonics of the undulator as a function of the size of the magnetic gap. Comparisons are made with the performance of a wiggler and a bending magnet presently installed at HASYLAB's DORIS storage ring.*

Storage rings operated above 10 GeV at ep-colliders offer attractive possibilities for fourth-generation synchrotron radiation sources. In particular, the storage ring PETRA has recently been reconstructed as an electron and proton booster for HERA, the new, superconducting hadron-electron storage ring at DESY, Hamburg (Ed.: HERA obtained its first beam last October). The expected lifetimes in HERA are 3 hours for electrons, and 12 hours for protons. PETRA could be used between injections as a storage ring for synchrotron radiation without affecting its performance as a booster for HERA.

A by-pass for synchrotron radiation experiments at PETRA has been proposed [Brefeld W. and Gürtler P., *Proc. Particle Accelerator Conf.*, Stanford, USA (1991)] which would provide space for the installation of two 5 m long magnetic undulators. At 13 GeV, the existing electron booster optics yields an emittance of 79 nmrad: the photon beam divergence would be 0.053 mrad by 0.012 mrad and the beam size some  $12 \times 2.7 \text{ mm}^2$  at a point 100 m from the undulator. The figure shows the spectral brightness calculated for an undulator using hybrid technology (permanent magnets and electromagnets) with a period of 3.35 cm and a gap of 11 mm, operated at an electron energy of 14 GeV. By opening the gap, the energy of the photons from the fundamental can be tuned between 20 and 40 keV with almost constant intensity. Including third and fifth harmonics, the energy range from 20 to 200 keV is covered by one device. The total radiation power emitted by this undulator is 13.7 kW, but only 130 W are emitted in the energy range up to 5 keV. Filters can therefore be used and handling of the heat load is straight-forward.

**J.R. Schneider, F. Bell**

## EPS/JPS Collaboration

Meeting in Budapest with Maurice Jacob, President of EPS, on the occasion of the 100th anniversary of the Eötvös Physical Society, Professor Mishiji Konuma, President of **The Japan Physical Society** agreed to work to establish a direct and permanent contact between the two Societies. Link persons responsible for exchanging information and coordinating activities have been nominated. They are the JPS Secretary for International Affairs (currently Dr. Ken Kikuchi, of KEK Tsukuba) and the Vice-Secretary of the EPS Executive Committee (currently, Professor A. Taroni, Facolta di Ingegneria, via Valotti, 9, I-25100 Brescia), who can be contacted by members concerning questions for which the advice of the JPS is important.