Cooperation Gears Up

The International Training Institute for Materials Science is a second step in a longstanding university cooperation with Vietnam.

Initial plans for a Cryogenic Laboratory at the University of Hanoi and for a Micro-Electronics Laboratory at the Hanoi University of Technology were worked out in April 1975, when several Vietnamese scientists were invited to visit Holland to discuss university cooperation. They reflected the Vietnamese government's policy of building up the scientific infrastructure as a starting point for the future exploitation of mineral resources. In the early days, this policy was implemented through the education of numerous MSc and PhD students in east and central Europe. The region's support was also highlighted by the large, campus-like, Hanoi University of Technology built with Soviet aid in the 1960s.

The Dutch Minister for Development Cooperation was in the process of evaluating university cooperation when the Dutch-Vietnamese cooperation began. The tendency was to move from many small-scale arrangements, mainly initiated by Dutch scientists, towards long-standing "cooperation connections". Developing countries should take the initiative and both sides would involve departments from several universities. Conditions on the Dutch side were also rather favourable (an equipment component of 40% of the total budget was allowed in combination with staff exchange), so Vietnam's desire to set up a cryogenic laboratory, with basic measuring and sample preparation equipment and liquid-helium facilities for solid-state research, could be fulfilled.

The lack of both technical support and experimental facilities in practical classes became evident during the early years. So, with Dutch financial support and cooperation from the University of Amsterdam, two new projects were started in 1979 in the University of Hanoi. They involved a student laboratory to improve working in Vietnam on magnetic and thermal properties. A proposal to initiate a regional school on materials science in Hanoi and to seek financial support from the Dutch government met with great enthusiasm at a workshop held in Hanoi in 1990 (indeed, many participants from Europe agreed to become members of an advisory board). The school would be based on the "old" cryogenics/solid-state physics/microelectronics projects, and other strong groups working in Vietnam on magnetic and semiconductor materials, supported by Sweden's SAREC agency and by the French.

A model of the building (presently under construction) that will house part of Vietnam's International Training Institutes for Materials Science (ITIMS).

University Konstanz

An der Fakultät für Physik (Kennziffer: 96/016) ist eine

C 4-Professur für Theoretische Physik

zu besetzen. Die Stelleninhaberin oder der Stelleninhaber soll das Fach Theoretische Physik in der Lehre in voller Breite vertreten, in der Forschung ist eine Zusammenarbeit mit vorhandenen Arbeitsgruppen im Bereich der Physik der kondensierten Materie und der Quantenoptik erwünscht.

Eine Beteiligung an Sonderforschungsbereich 513 «Nanostrukturen an Grenzflächen und Oberflächen» wird erwartet, insbesondere auf dem Gebiet der elektronischen und optischen Eigenschaften.

Die Universität Konstanz strebt eine Erhöhung des Anteils von Frauen in Forschung und Lehre an und fordert Wissenschaftlerinnen nachdrücklich auf, sich zu bewerben. Bewerbungen mit den üblichen Unterlagen werden unter Angabe der Kennziffer (96/016) bis zum 06.05.1996 an den Dekan der Fakultät für Physik der Universität Konstanz, Postfach 55 60 M 627, 78434 Konstanz erbeten. Schwerbehinderte werden bei entsprechender Eignung vorrangig eingestellt (Schwerbehindert.Ver treter Tel. 0 75 31 /88-37 25).
in 1995. Some 10 ITIMS staff members visited Amsterdam and Twente during this period to prepare the MSc programme in close cooperation with Dutch colleagues. Two research sections were foreseen from the start, and in the winter of 1994, four PhD students began thesis research according to a “sandwich” arrangement. Other PhD students started parallel work on related topics as soon as equipment arrived in Vietnam. Of the 14 ITIMS networks, two on solar and wind-energy renewable electricity sources will hopefully develop into links with industry.

Postdoc’s educated in the “old” projects have worked, or are still working, in Birmingham, Grenoble, Linkoping, and Vienna. Once back in Hanoi they will supervise ITIMS students. Meanwhile, a second International Workshop on Materials Science took place in Hanoi in October 1995 to celebrate the 20 years of very successful scientific cooperation between The Netherlands and Vietnam. It was clear that the ITIMS, with help from Europe, is well on the road to playing a vital role as a regional centre for education and training in science.

**A Mixed Profile**

E.W.A. Lingeman summarizes recent surveys of the employment of physicists covering much of Europe.

**France:** employment of PhD physicists & chemists classified under the heading Direction scientifique 2: Science de la Matière (approximately 10% are chemists) [1]. *postdoc + still studying.

**Germany:** physics degrees awarded & employment of 1st degree & PhD physicists [2-4]. Average course length - 1st degree: 6 years; PhD: 4 years. * positions available for physicists according to the government employment agency.

**Italy:** physics PhDs awarded & employment of PhD physicists [5]. Average course length - PhD: 7.2 years. * includes postgraduates

**The Netherlands:** physics degrees awarded & employment of 1st degree & PhD physicists [6-8]. Average course length - 1st degree: 5.7 years (since 1982 starting year); PhD: 4 years. * further study + postdocs + military service.

**Future Prospects**

**Germany** - It takes on average about six years to be awarded a first degree (Diplom) in Germany and a further four years on average to be awarded a PhD. The data for Germany therefore indicate that of the 10 000 students who entered university-level physics courses in 1991, some 5000 will receive Diplom in 1997 of which some 2500 will receive PhDs in 2001. Extrapolations suggest that the number of first-degree and PhD physicists seeking positions in 2001 will exceed 7000 so there will be about 2.8 physicists seeking positions.

**Spain** - For physicists completing their degrees in Spain between 1990 and 1993, a majority of physicists were employed. The data suggest that the number of first-degree physicists seeking positions in 2001 will exceed 7000 so there will be about 2.8 physicists seeking positions.

**The Netherlands** - For physicists completing their PhDs in The Netherlands having started university studies in 1985-91, unemployment in early 1995 was estimated to be 6.5%. So PhD physicists experience relatively low unemployment in The Netherlands. However, of the first degree and PhD physicists who started studying in 1979-86, many had to seek a position in 1995 as compared with 4% of the 1979-84 starters in 1990. So the overall employment situation for young physicists had deteriorated. It has improved recently since unemployment today among first degree and PhDs who started studying in 1979-86 is about 6%.

**PhD Unemployment**

**France** - For physicists completing their PhDs in France between 1990 and 1993, unemployment increased from an estimated 1.8 to 14% and temporary employment from 7.6% to 22.2%.

**Italy** - For physicists who completed their PhDs in Italy in 1988-92, unemployment in mid-1994 is estimated as 8.1%, with an estimated 45.4% in temporary employment. So unemployment and temporary employment among PhD physicists in Italy are relatively high.

**The Netherlands** - For physicists who completed their PhDs in The Netherlands having started university studies in 1985-91, unemployment in early 1995 was estimated to be 6.5%. So PhD physicists experience relatively low unemployment in The Netherlands. However, of the first degree and PhD physicists who started studying in 1979-86, many had to seek a position in 1995 as compared with 4% of the 1979-84 starters in 1990. So the overall employment situation for young physicists had deteriorated. It has improved recently since unemployment today among first degree and PhDs who started studying in 1979-86 is about 6%.

**Future Prospects**

**Germany** - It takes on average about six years to be awarded a first degree (Diplom) in Germany and a further four years on average to be awarded a PhD. The data for Germany therefore indicate that of the 10 000 students who entered university-level physics courses in 1991, some 5000 will receive Diplom in 1997 of which some 2500 will receive PhDs in 2001. Extrapolations suggest that the number of first-degree and PhD physicists seeking positions in 2001 will exceed 7000 so there will be about 2.8 physicists seeking positions.

E.W.A. Lingeman, who is the Secretary of the EPS Action Committee for Physics and Society, is based at NIKHEF in Amsterdam.