

The W7-X Stellarator Project by F. Wagner	3
ANOMALOUS TRANSPORT: European Task Force Formed	5
ENERGY AMPLIFIER: Elegant Demonstration Successful	6
Nanostructures from Molecules	7
Quest for Other Worlds Awakens	8
POSITRON MICROSCOPY: Pulse Microbeam in Operation	10
LHC: Meeting an Unprecedented Challenge	11
PHYSICS IN DENMARK: Success Based on Several Factors	12
ILL Reactor in Demand	12

INFORMATION TO MEMBERS

PRESIDENT'S REPORT: Integration & Continuity	13
SOLIDARITY FUND: Applications Sought	14
EPCS Board Elections	14
CMD: Agreement on General Conference	14
STUDY CONFERENCE: Importance of Innovation Highlighted	15
HEPP: Measures Needed to Promote University Participation in Large Experiments	16
CONFERENCE: <i>Physics Studies for Tomorrow</i>	16
1996 EQEC/CLEO-Europe	16
SPECIAL OFFER: <i>Advanced Materials for Optics</i>	16

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Cover illustration

A computer-generated illustration of the proposed Wendelstein W7-X stellarator showing the wall of the vessel, the modular coils, the additional planar coils for experimental flexibility, part of the cryostat, and possible diagnostic ports (see p. 3).

Missing Links

In 1990, there were, in the then 12 European Union (EU) Member States, nearly 16000 small- and medium-sized enterprises (SMEs) each with less than 500 employees. Depending on the country, they accounted for 16 to 82% of all the money spent by industry on R&D, and 13 to 42% of those employed in R&D (the UK appears to be an exception with only 9 and 6%, respectively). SMEs also employed 1% more people in 1990 than two years previously, while larger companies employed 1% fewer. EU ministers believe SMEs are decisive for creating jobs and have therefore set up measures to promote their participation in the 4th Framework's industrial research programmes.

Studies also show that SMEs are not profiting adequately from the results of basic research. A report presented at a recent EPS Study Conference on university-industry collaboration (p. 15) said this was the case for Germany. The same conclusion was reached in last year's national debate in France on the state of the country's research capacity (a national committee to define a long-term strategy for research appointed subsequently will look into the problem).

Fostering SMEs and their links to research are today crucial issues everywhere, but especially in East and Central Europe (ECE). This emerged from a meeting in Budapest in mid-February between Norbert Króó, the EPS President, and the presidents of national physical societies from the region. In taking stock of the situation in physics, it emerged that basic research is, generally speaking, competitive and holding up well while applied research is suffering greatly from the disappearance of large, state-controlled industries. These industries will probably be replaced by smaller companies, at least at the beginning, so links between SMEs and research bodies are vital for both.

However, the EU stimuli do not extend to research-oriented programmes such as Training and Mobility of Researchers that was launched officially in January (p. 17). Second, there is little EU support available for ECE to participate in these programmes (EU Research Ministers will decide in March if a mere 5-10 MECU should be spent this year within the 4th Framework on science in ECE). Thirdly, although ECE countries will be participating in these programmes largely at their own cost, the mechanisms have not yet been spelt out. Finally, from the discussions in Budapest it seems that ECE has difficulty entering EU programmes in any context as they emphasize economic aspects in which the region is relatively weak.

All this is very unfortunate. For Norbert Króó, who steps down from office at Council in March, is not alone when he stresses in his annual report (p. 13) the importance of integrating ECE into the European research landscape. Developing the missing links between SMEs and research calls for measures which are much more determined than those on offer.

P.G. Boswell