

Quantum Electronics Division

A Personal Report from the Division's Chairman

Europhysics News rightly encourages the Divisions to make use of its columns to diffuse divisional news as the Divisions consist not merely of Board members but, in the case of the Quantum Electronics Division, 250 members and, equally important, the rather greater number of people who attend our conferences but do not pay their EPS subscription! So here is some general news about what has been going on in European Quantum Electronics during my time as Chairman of the Division.

The Division's main activity is of course the organization of divisional meetings and bringing quantum electronic researchers together, so that the European effort in the field is appreciated in wider international circles; e.g. by participation in the International Quantum Electronics Conference series and the publication of a *European Who's Who in Quantum Electronics*. In addition, two of our members (Stig Stenholm, Finland, and Trevor Moss, UK) are responsible for editing *Progress in Quantum Electronics*. My predecessors on the QED Board were very active and over the past two years the Division has maintained the momentum although it could usefully acquire a larger number of members.

Topics of the annual Divisional meetings have varied from Nonlinear Optics (Strasbourg 1977, 80 participants) through Laser Induced Processes in Molecules (Edinburgh, 1978, 200 participants) to the more applied topics, Lasers in Medicine and Biology (Florence 1979, 200 participants) and the projected European Conference on Optical Systems and Applications (Utrecht, 23 – 25 September 1980). For the first time, the Proceedings of a Divisional conference (Edinburgh) were published (by Springer-Verlag) and they give a rather comprehensive guide to the range of subjects under active study in Europe. Most of the conferences have been successful in the sense that they have attracted an adequate number of participants and been, "al finito in credito", that is, with the exception of the Italian venture in Florence! This was almost entirely due to the standard of cuisine enjoyed by the lucky participants. Apart from the five-course 2½-hour lunch every day, the Conference Dinner was incomparably the best I have ever experienced in both the standard of the food and the surroundings. The Division is taking steps in collaboration with the EPS Secretariat to see that its gains from successful ventures can be used to launch new initiatives.



postdoctoral position

in the Department of High Energy Physics. Applications are invited for a postdoctoral position to participate in experiments being planned by the Nijmegen High Energy Physics group. This group is currently involved in the European Hybrid Spectrometer and a high- p_t calorimeter-triggered streamer-chamber experiment. The applicant would be expected to spend most of his time in setting-up and running future counter experiments. Hardware counter experience is therefore desirable.

The appointment would be for a period of two years beginning fall 1980. Salary will depend on experience with a minimum of Dfl. 3.033,- /month.

*Applications should be sent to the Head of the Personnel Dept.,
Faculty of Science, Toernooiveld,
6525 ED Nijmegen, The Netherlands.*

The application-deadline is July 1st. 1980.

faculty of science university of nijmegen

the netherlands

One of our most important activities is to establish the credibility of European quantum electronics research in the eyes of our American colleagues and competitors. To this end we negotiated an agreement that the EPS QED acted as Programme Committee for European papers for the International Quantum Electronics Conference, Boston 1980. Over 90 papers were assessed and in the end we found ourselves represented by 10 invited papers and 44 contributed, representing 33% of the total acceptances compared with 20% of the total submissions. You may judge from these numbers the success of our representation on behalf of Europe and also conclude that the subject is in a healthy state on our Continent. The next conference in the series will be organised by the Division in Munich in 1982.

This year's meeting in Utrecht fulfills an important aim of the Division, the Division having played its part in rationalising and bringing together those bodies connected with the start of ECOSA with a view to creating a regular, high quality, applications-oriented conference analogous to CLEOS and CLEA in the USA. Concern remains nevertheless over the proliferation of different bodies concerned with optics and lasers in Europe and the Division is making

great efforts to rationalize a potentially silly situation. It may be that we should retitle the Division and include the various parts as Sections.

The constitution of the Division calls for a General Meeting of the Members every year. During my period in the Chair we have only held one such meeting, in Florence, at which the attendance was abysmal. If the officers re-elect themselves in a totally undemocratic manner, you the members have only yourselves to blame. Members of the Division really must communicate with the officers and express their wishes. Only in this way can the Division have a proper life.

The Board certainly does its best to promote friendship and cooperation. Last year's Spring Board Meeting was held in Bad Ragaz in Switzerland, ostensibly because of its central location in Europe, but really because of the availability of excellent skiing. Serious attempts were made by the Chairman and a representative from Germany to eliminate one of the French representatives by losing him in very bad visibility on the Standardabfahrt but fortunately, Jacques Ernest successfully found his way to the bottom. The guilty pair thereupon departed to Silvretta Nova to improve their chance of success in the

Divisional ski races to be held under the chairmanship of Daniel Chemla at Aussois in the French Alps on 25 – 27 March 1981 on which occasion the championships are entitled "Nonlinear Optics of Excited Solids". Werner Schmidt and myself are in fact not so invincible as you may think as a crucial choice of route at Davos last year depended upon our detecting from the indicator board which runs were open. As both of us are colour-blind it is sheer luck that we are still alive.

Our talents extend beyond skiing. The Secretary, Rene Dändliker, is a highly respectable tennis player, as is the Vice-chairman's wife, Frau Christl Kompa. In the first encounter between the Chairman and Secretary held in Zurich, the Secretary won 7-5, 6-4, whereas the Chairman gained his revenge at the molecules meeting in Edinburgh, 6-4, 6-3. A decider is planned in London on 10 July, 1980 (the date of the next Board meeting) to coincide with the end of the Wimbledon Championships.

Unfortunately not all our sporting efforts can be treated so light-heartedly and we were all very distressed by the collapse at the football match held in Novosibirsk in July last year (at which the Chairman broke his foot) of Sergio Porto who had done such fine work on Raman scattering in solids. The Chairman and Secretary will attend the memorial meeting in Rio, 29 June – 3 July.

Returning to QED, apart from the progress with the big lasers that is being made at Garching, Rutherford and elsewhere, our subject remains excitingly alive. There is active work in optical bistability, free electron lasers and laser spectroscopy of single atoms although Europe appears to be lacking somewhat in phase conjugation, one of the latest "whizz" words in the USA. We aim in our future programme to provide interesting meetings on topical subjects for anybody in Europe who is prepared to take some initiative and stir us up – in other words, there is more in the QED than just lasers, and we welcome new members and new ideas.

S.D. Smith

1980 EPS Hewlett-Packard Europhysics Prize

The 1980 Hewlett-Packard Europhysics Prize of the EPS has been awarded to two physicists for their separate contributions towards achieving a quantitative understanding of the physical and chemical behaviour of solid state materials through the development of original methods for the calculation of their electronic properties. The award winners are: Dr. O. Krogh Andersen of the Max-Planck-Institut für Festkörperforschung, Stuttgart; and Dr. Andries R. Miedema of Philips' Research Laboratories, Eindhoven.

They will share the prize of 20000 Sw.Fr. equally. The formal presentation will be made during the International Conference on the Physics of Transition Metals in Leeds, 18-22 August.

The prize, which is donated annually by Hewlett-Packard to EPS, is for "outstanding achievement in solid state physics".

Dr. Anderson is honoured for his development of new methods for the numerical calculation of band structures. These have significantly increased the speed of making such calculations, transforming them into a highly efficient procedure and greatly extending the range of materials that can be studied. So effective is his approach, his method, and subsequent developments of it, are now used for elaborating the input data for more complex computations.

Dr. Miedema is honoured for his essentially empirical approach to similar problems, which have had a striking success even though the underlying theoretical justification is not understood. His empirical alloy models allow a number of properties, notably those of a thermo-dynamic nature, to be derived and provide a powerful tool for studying new alloys and tailoring their properties to engineering requirements.

ACAPPI/CMD Summer School

A new departure for EPS is the organization of a Summer School on Material Science and Technology (1st Course Applications of Ferroelectrics) which is being held at the Ettore Majorana Centre of Erice, 1-15 July, 1980. While some attention will be paid to the switching dipole properties of ferroelectrics, the principal topics discussed will be the exploitation of such phenomena as piezoelectricity and pyroelectricity, as well as the dielectric and optical properties of ferroelectrics, with particular emphasis on the enhancement effects that occur at or in the neighbourhood of phase transitions.

The Course is aimed at post-graduate students in research institutes and industry.

Inscriptions accompanied by personal details and background will be accepted

until early in June by the Course Director, F.W. Ainger, Plessey Research (Caswell) Ltd., Allen Clark Research Centre, Caswell, Towcester, Northants NN12 8EQ, U.K.

Enlargement of ESO

At its meeting on 26 March the Council of the European Southern Observatory agreed to Italy and Switzerland becoming Member States of the Organization with effect from early 1981. Parliamentary ratification in the two countries has still to be completed. In anticipation of the material increase in demand for observing time on the big telescopes at La Silla in Chile that will arise, it is proposed to construct a new 3.5m telescope, the New Technology Telescope or NNT, that will be of a revolutionary light weight design.

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