involved on work showing how the
details of fission are dominated by
shell effects and this work was
described in a talk by R. Balian.
Some of the ways fission is con-
tributing to the main stream through
the spectroscopy of the shape iso-
mers were discussed by S. Bjorn-
holm. One of the highlights of the
fission contributions was the experi-
ment carried out at Munich in which
the E2 internal conversion lines of
the ground state rotational band
of the shape isomer have been
observed and show the expected
larger moment of inertia.

It was the calculations of the nuclear
potential energy surface which led to
the speculations on super heavy
elements and the possibility of their
formation in heavy ion reactions.
Swiatecki, in a talk linking fission
and heavy ion reactions, emphasized the
relevance of the information obtained
on the shape of the nuclear potential
energy surface to the possibility of
formation of super heavy elements and
the critical need for knowledge of
nuclear viscosity.

A different approach to the nucleus
is involved in the remaining topic
covered by the conference — nuclear
physics above 100 MeV, in which high
energy projectiles or mesons are used
to probe the fine structure of nuclei.
It is from these experiments, as Wil-
kinson emphasized in a closing talk,
that we are getting evidence that the
nucleus really is made from neutrons
and protons. There were contributions
showing the effect of the 3-3 reso-
nance in pion-nucleus scattering and
in photo-meson production in nuclei,
but the inelastic electron scattering
and the p,2p experiments which
reveal the low-lying bound levels still
appear to disagree on the position of
the lowest s level.

This conference showed that heavy
ion and high energy approaches to
the nucleus are beginning to take us
away from the traditional preoccu-
pation with light ion reactions and the
few nucleons at the top of the Fermi
sea. It was successful and timely in
bringing together these developing
fields and in highlighting areas where,
with appropriate facilities, our under-
standing of the nucleus will be
enriched.

L.L. Green

Physics of Semiconductors
25-29 July 1972, Warsaw, Poland

The International Conference on
the Physics of Semiconductors was held
in Warsaw, 25-29 July 1972, as the
eleventh in the series of biannual
international conferences, which are
supposed to summarize two-year
periods in the development of semi-
conductor physics.

The conference was organized by
the Institute of Physics of the Polish
Academy of Sciences together with the
University of Warsaw and sponsored
by the International Union of Pure
and Applied Physics.

The organizers received more than
450 contributed papers, of which they
could accept less than one-third. The
invited speakers and subjects were
chosen on the basis of suggestions
sent to us by members of both
the International and the Polish
Programme Committees. The seven
plenary invited papers should give
some idea of what, we felt, are the
most important subjects in the cur-
rent development of semiconductor
physics. A.L. Efros of Ioffe Institute
in Leningrad spoke on Low Tempera-
ture Conductivity of Strongly Compensa-
ted Semiconductors, T. Kasuya
of Tohoku University in Sendai on New
Aspects of the Electronic Properties
of Magnetic Semiconductors, W. Paul
of Harvard University on Current
Status of Some Basic Problems in
Amorphous Semiconductors, I. Solo-
mon of Ecole Polytechnique in Paris
on Spin-Dependent Properties of
Semiconductors, D.C. Tsui of Bell
Laboratories on Quantum Effects in
the Semiconductor Surface Layer, and
W. Zawadzki of the Institute of Physics
in Warsaw on Electron Scattering and
Transport Phenomena in Small-Gap
Semiconductors.

The conference was attended by
more than 600 participants. Among the
biggest delegations were: Poland —
110, USA and USSR — 80 each, France
and German Federal Republic — 50
each, Czechoslovakia and German
Democratic Republic — 30 each, Great
Britain and Japan — 25 each.

The general opinion was that the
conference was a success. The partici-
pants complimented the programme,
as being truly international and well-
organized both in time and in the
choice of invited papers.

The next conference will be held
in Stuttgart in 1974, and will be
organized by Dr. O.G. Folberth, IBM
Component Development Laboratory,
Schönäichstr. 220, D-703 Böblingen,

J. Kolodziejczak

ESSDERC 1972
11-15 September 1972, Lancaster, UK

The Second European Solid State
Device Research Conference was held
at the University of Lancaster, England,
from 11-15 September 1972, and was
attended by over 300 scientists from
19 countries. This series of confer-
ences has become established by
combining the German and British
meetings on the same topic, and like
them features a small number of
invited lectures and a large number of
ten-minute contributed papers. This
year the invited talks were by E. Ash
(Integrated Optics), M. Bernard
(Nonlinear Optical Susceptibilities), J.
Collins (Ferrimagnetic Film Microwave
Devices), W. Merz (Ferroelectric Appli-
cations), E.G.S. Paige (Acoustic Sur-
face Wave Devices) and H. Queisser
(Semiconductors in the Relaxation
Regime). All reached an unusually
high standard, but Hans Queisser's
contribution must be singled out as
exceptional. A stranger entering the
day would find the people at the end
might well have thought that a US Pre-
idential candidate was being nomi-
nated! The talk was concerned with
the behaviour of semiconductors when
the carrier lifetime was shorter than
the dielectric relaxation time, a con-
dition that causes most of our
standard assumptions to become inva-
lid, and that turns conventional
teaching on its head. One feature of
the other invited talks that aroused
some comment was the avoidance of
semiconductor topics. Most solid state
device conferences in the past have
been heavily weighted towards semi-
cconductors, and it was interesting to
note how so many other areas are now
proving ripe for exploitation. A special
evening discoursing by W. Shockley on
the early history that lay behind the
invention of the transistor entertained
a large audience. For an hour or so,
they were taken back twenty-five
years, and treated to a well-prepared
and documented exposition, bringing
in characters familiar and unfamiliar,
and tracing their subsequent fates.
Strict refereeing by a knowledgeable programme committee had been unable to pull nearly 100 contributed papers, and two parallel sessions were needed to accommodate them. Fortunately, Lancaster has suitable lecture theatres adjacent to each other, and it was relatively easy to commute. The organizers consistently allotted the more popular session to the smaller theatre, but there were few complaints.

Topics covered included Microwave Devices, Schottky Barriers, Surface Acoustic Waves, Semiconductor Material Processing, Liquid Crystals, Electroluminescence and Glassy Switches, but most excitement was generated by a paper from M.F. Tompsett, in which he showed a colour TV picture obtained using charge-coupled image-sensing arrays.

**Society News**

**Reduced rates to journals for IOM**

In 1973, Individual Ordinary Members of EPS have been offered the following reduced rates to journals published by The Institute of Physics:

- **Journal of Physics Series**
  - A: Mathematical, Nuclear and General
    - 12 issues £ 8.00
  - B: Atomic and Molecular Physics
    - 12 issues £ 8.00
  - C: Solid State Physics
    - 24 issues £ 12.00
  - D: Applied Physics
    - 18 issues £ 10.00
  - E: Scientific Instruments
    - 12 issues £ 6.00
  - F: Metal Physics
    - 12 issues £ 6.00

- **Offprints of all letters in Journal of Physics A-D and F**
  - 78 issues £ 12.00

- **Physics in Medicine and Biology**
  - 6 issues £ 4.50

**Reports on Progress in Physics**

- 12 issues (journal version) £ 10.00
- 3 issues (bound volumes) £ 10.00

**Physics In Technology**

- Formerly Review of Physics in Technology
- 3 issues £ 4.00

**Physics Education**

- 7 issues £ 3.50

**Physics Bulletin**

- 12 issues £ 4.00

**Further details and sample copies of these journals may be obtained from M. Grover, Circulation Manager, The Institute of Physics, Netherton House, 23 Marsh Street, Bristol BS1 4BT, UK to whom subscriptions should also be sent.**

**Correction**

We apologize to A. Baldin (Dubna) for omission of his name from the Board of the High Energy and Particle Physics Division in the November 1972 issue, page 4.

**New Books from North-Holland**

**Many-Body Problems**

By G.E. BROWN, NORDITA, Copenhagen, Denmark, and State University of New York, Stony Brook, U.S.A.

Dfl. 49.00 (ca. $ 12.50) Paperback


**Polarons in Ionic Crystals and Polar Semiconductors**


Edited by JOZEF T. DEVREESE, University of Antwerp, Belgium.

1973, 240 pages

Dfl. 140.00 (ca. $ 43.75)

Contains the proceedings of a meeting held to review the progress made in polaron physics since 1962. The major theoretical and experimental developments dealt with in this book include: magneto-optical properties (with applications relating to II-VI and III-V semiconductors); internal excited states (resonances) of polarons and their role in the optical and magneto-optical properties of free and bound polarons (applications to alkali-halides, thallous-halides and silver-halides); transport properties (including high field effects) with an extension of the Kubo formulation; polarons in degenerate semiconductors; piezo-polarons; acousto-polarons; small-polarons (transition metal oxides); effects of nonparabolicity of bands; alternative formulations of the theory.

With contributions from leading physicists in the field, the book is intended for graduate physicists with a background in solid state physics. Many tables are given which relate physical constants to polaron properties.

**Principles and Application of Magnetic Cooling**

By R.P. HUDSON, National Bureau of Standards, Washington, D.C.

**NORTH-HOLLAND SERIES IN LOW TEMPERATURE PHYSICS, Vol. 2**

1972, 248 pages

Dfl. 60.00 (ca. $ 18.75) Paperback


**North-Holland**

P.O. Box 1270 - Amsterdam - The Netherlands