FOURTH GENERAL CONFERENCE of the
EUROPEAN PHYSICAL SOCIETY
in collaboration with The Institute of Physics, U.K.

Plenary Sessions

New Developments in Elementary Particle Physics
Recent Developments in Polymer Statistics
Molecular Processes on Surfaces
Quasars, Burstars, Pulsars
The Age of Silicon
Bio-energetics
Laser Isotope Separation
Relativistic Heavy Ion Physics
Synchrotron Radiation and its Applications
Renormalization Groups in Field Theory and Phase Transitions
Physics and the Developing Countries
(Cecil Powell Memorial Lecture)

Parallel Symposia

Modern Optics
Surface Physics
Phase Transitions
Nuclear Astrophysics

Hot Plasmas
Heavy Ion Physics
Synchrotron Radiation
Quarks

General Assembly of the European Physical Society
**Symposium A : MODERN OPTICS**
Chairman : L.A.A. Thomas
Secretary : R.L. Rouse
The G.E.C. Ltd. (Hirst Research Centre)
Wembley, Middlesex HA9 7PP, U.K.

**PROGRAMME**

**Advances in Non-Linear Optics and Materials**
- Advances in Non-Linear Optics
- Multiphoton Processes
- Non-Linear Optics in Gases and Vapours
- Efficient Harmonic Generation
- Coherent Effects in Solids

**New Developments in Lasers and their Applications**
- Coherent UV, VUV and X-ray Sources
- Lasers Induced Photophysics and Photochemistry
- Laser Compression and Fusion
- Ultra Short Pulses : Studies of Large Molecules
- Wavelength Measurements / Speed of Light
- Excimer Lasers
- Infrared / Submillimetre Lasers
- Environmental Diagnostics / Pollution (Laser Control of the Atmosphere)

**Symposium B1 : SURFACE PHYSICS**
Chairman : C.J. Todd
Post Office Research Station
Martlesham Heath
Ipswich IPS 7RE, U.K.

**PROGRAMME**

**Photoemission from Solid Surfaces, using Synchrotron and Conventional UV Sources**
- Application of Synchrotrons to the Study of Solids
- Structural Implications in Angular Photo and Auger Emission
- Application of Photoemission to Disordered Systems

**Magnetism and Phase Transitions at Surfaces**
- Monolayer Magnetic Materials
- Spin Polarised Photoemission from Ferromagnetic Materials
- Theory of Surface Magnetism and Phase Transitions
- Phase Transitions in Physisorbed Systems
- Phase Transitions at Clean Metal Surfaces

**Symposium B2 : PHASE TRANSITIONS**
Secretary : H. Thomas
Inst. for Theoretical Physics
University of Basel
Klingelbergstrasse 82
CH-4056 Basel

**PROGRAMME**

**New Developments in Critical Behaviour**
- Field Theory and Renormalization Group
- Critical Dynamics
- First-Order Transitions

**Symposium C1 : NUCLEAR ASTROPHYSICS**
Secretary : A. Edwards
Dept of Astrophysics, University of Oxford
South Parks Road
Oxford OX1 3RQ, U.K.

**PROGRAMME**

**The Early Stages of the Universe**
- Emergence into the Particle Regime
- Baryon Number, Lepton Numbers
- Alternatives to, or Modifications of, the Hot Big Bang
- Nucleogenesis versus Different Cosmologies

**The Solar System**
- The Solar Neutrino Problem
- Planetary System
- Isotopic Abundance Determinations
- Nucleocosmochronology
- Relative Importance of Various Nucleosynthesis Processes

**Preliminary**

Deputy Chairman : E. Courtens
IBM Research Laboratory Zürich
CH-8803 Rüschlikon

**Optical Electronics**
- Optical Fibre Communication : Physics Implications
- Fibre Optics
- Planar Optics
- Materials for Optical Storage and Reproduction
- Image Processing
- Developments in Holography, including Lasers

**Laser Spectroscopy**
- Multiphoton and Coherent Spectroscopy
- Doppler-free Spectroscopy
- Coherent anti-Stokes Raman Spectroscopy
- Molecular Spectroscopy
- Atomic Spectroscopy

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PROGRAMME OF SYMPOSIA

Symposium C2: HOT PLASMA IN SPACE AND LABORATORY
Secretary: F. Engelmann
FOM-Instituut voor Plasma-Fysica
Rijnhuizen, P.O. Box 7
Jutphaas NL

PROGRAMME
Collective Plasma Dynamics
— Plasma Turbulence (Review)
— Turbulence Induced by Relativistic Electron Beams
— Energy Transfer in Beam-produced Plasmas
— Magnetohydrodynamic Instabilities in Toroidal Plasmas

Wave-Particle Interaction in Astrophysical Plasmas
— Particle Acceleration
— Energy Build-up and Release

Diagnostics
— Spectroscopy of Hot Plasmas
— Cyclotron Radiation from Magnetically Confined Plasmas

Symposium D: HEAVY ION PHYSICS
Secretary: K. Bethge
Institut für Kernphysik
August-Euler-Strasse 6
D-6000 Frankfurt/Main 90

PROGRAMME
Nuclear Physics
— Pion Condensation
— Coulomb Processes
— Super Heavy Elements
— Nuclear Reactions
— Yrast-traps etc.

Atomic Physics
— Uranium - Uranium Collisions
— Inner Shell Processes, Theory
— Inner Shell Processes, Experimental
— UV and X-ray Lasers
— Transient Field Effects
— Heavy Ions in Solids

Applications and Equipment
— Heavy Ion Facilities in Europe
— Ion Implantation and Material Science
— Radiation Damage

Symposium E1: SYNCHROTRON RADIATION
Secretary: S. Leach
Labo. de Photo physique Moléculaire du CNRS
Université de Paris-Sud, Bâtiment 213
F-91406 Orsay

PROGRAMME
— Atomic Physics and Synchrotron Radiation
— Recent Advances in the Dynamics of Photo-selected Excited States of Molecules and Ions
— Elastic Scattering : Structural Applications to Biology
— Synchrotron Radiation and X-ray Crystallography
— EXAFS and its use in the Study of Glass
— X-ray Imaging : Lithography, Microscopy and Topography
— Application of Synchrotron Radiation to Study of Solids
— Theory of Coherence Effects in Synchrotron Radiation
— Synchrotron Radiation and Galactic X-ray Sources
— State of the Art of Instrumentation or Hot Topic '78

Symposium E2: QUARKS
Secretary: G. Preparata
TH Division
CERN
CH-1211 Geneva 23

PROGRAMME
Quark Spectroscopy
— Mesons and Baryons made of "Old" Quarks
— Mesons and Baryons made of "New" Quarks

Quarks and High Energy Reactions
— Quarks and Low pT Physics
— Quarks and High pT Physics
— Deep Inelastic Phenomena and the Quark-parton

Quark Confinement
— "Conventional" and "Unconventional" Ideas about the Non-observation of Quarks

To make a preliminary registration or, to ask for further information complete form overleaf

Form to be returned to:
The Meetings Officer
The Institute of Physics
47, Belgrave Square
LONDON SW1X 8QX
England
### Draft Programme

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### Scientific Programme

The Conference will be held at York University which is situated a few kilometres outside the ancient cathedral city of York. Some of the symposia will include contributed papers and/or poster sessions, others will consist only of invited and review (rapporteur) papers. Some of the topics will be discussed in joint sessions where appropriate. Further details will be given in Bulletin No. 2 which will be sent in the Spring to those completing the form below.

Requests for information or proposals concerning the Symposia programmes may be addressed to any of the organizers shown under each heading, or to other members of the International Programme Committee.

### Accommodation and Travel

Ample accommodation will be available on the campus of York University for participants and accompanying persons. Over 900 single rooms will be available as well as double rooms.

British Airways has been appointed as the official conference airline and is hoping to organize reduced rate group travel from key centres in Europe. British Rail is also trying to arrange special reduced rate tickets from centres within the U.K.

### Grants to Young Physicists

The Executive Committee will be able to grant from the EPS Conference Fund a limited number of scholarships for attending the York Conference to young physicists not in a position to obtain full financial support from other sources. Grants will be allocated either for travel expenses or accommodation in York. Detailed information on conditions and an application form may be obtained on request from the EPS Secretariat in Geneva: P.O. Box 39 CH-1213 Petit-Lancy 2.

#### EPS 4th. General Conference

Fills the form using Block Letters on Form.

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**Name and Title:**

**First Name:**

**Affiliation:**

**Mailing Address:**

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I aim to attend the Conference:

- [ ] Alone
- [ ] Accompanied by non-participants

I am interested in the following Symposia:

- [ ] A; [ ] B1; [ ] B2; [ ] C1; [ ] C2; [ ] D; [ ] E1; [ ] E2

(Please indicate in appropriate [ ])

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Please use Block Letters on Form.

Bulletin No. 1