# CONTENTS

Foreword \( v \)

Editorial \( vii \)

Organisation of the School \( ix \)

## I. Theoretical Principles of Neutron and Synchrotron X-ray Scattering

Neutron- and Synchrotron X-ray Scattering (The Theoretical Principles) \( 3 \)

*W. E. Fischer*

## II. Structure Determination

Structure Determination by Powder Synchrotron X-ray Diffraction \( 41 \)

*A. N. Fitch*

Structure Determination by Powder Neutron Diffraction \( 61 \)

*E. Gray and E. Kisi*

Seminar on “Structure” \( 83 \)

*K. Yvon*

## III. Magnetism

Magnetic Neutron and Synchrotron X-ray Scattering \( 87 \)

*W. G. Stirling*

Magnetic Excitations Through the Eye of the Neutron \( 109 \)

*W. J. L. Buyers*

Topological Excitations in Low Dimensional Magnets \( 129 \)

*H. B. Braun*

Seminar on “Magnetism” \( 163 \)

*G. H. Lander*
xii

IV. Correlated Electron Systems

Elastic and Inelastic X-ray Scattering from Correlated Electrons: A Theoretical Perspective
M. Altarelli

SANS Measurements on Vortices in Superconductors. What Can We Learn?
V. B. Geshkenbein

Seminar on “Electronic Structures”
J. Mesot

V. Multilayers

From Thin Films to Superlattices Studied with X-rays and Neutrons
D. F. McMorrow

Seminar on “Multilayers”
S. K. Sinha

VI. Other Topics in Condensed Matter Research

From Entropy Driven Motion to Reptation — Large Scale Dynamics in Polymer Melts
D. Richter

Small-Angle and Surface Scattering from Porous and Fractal Materials
S. K. Sinha

Hot Topics in Condensed Matter Physics
H. R. Ott

Seminar on “Dynamics”
B. Dorner

VII. Beam Optics

Neutron Beam Optics
P. Böni

Synchrotron X-ray Beam Optics
A. Freund
VIII. Summary

Summary Lecture: Some Features of the Scattering and Absorption of Beams of Neutrons and Beams of X-rays

S. W. Lovesey

List of Participants