

Table of Contents

Preface

Intercalation Compounds: Challenges & Perspectives for Neutron Scattering J.W. White, P. Wlcpolski, I.P. Jackson and F. Trouw	1
Ethylene-on-Graphite: Evidence of a Continuous Melting Transition J.Z. Larese, L. Passell, A.D. Heidemann and D. Richter	17
A Neutron Study of the Bonding in Gallium Arsenide P.J. Brown and J.B. Forsyth	19
Short-Wavelength Neutron Single Crystal Diffractometry W.F. Kuhs	25
Neutron Diffraction from Orientationally Disordered Crystals W. Prandl, A. Hoser and T. Brückel	35
Experimental and Theoretical Aspects of AB Initio Structure Determination Using Powder Diffraction Techniques W.I.F. David, M.W. Johnson and C.C. Wilson	49
Cation Short Range Order in Non-Stoichiometric NaTi J. Schneider	63
Extinction in Tof Powder Diffractometry T.M. Sabine, R.B. Von Dreele and J.F. Jorgensen	69
Anomalous Peak Broadening in High Resolution Powder Diffraction Patterns M. Elcombe and C.J. Howard	71
Neutron Diffraction Analysis of HRh[P(C₆H₅)₃]₄ R. Bau, R.C. Stevens, M. McLean and T.F. Koetzle	77
Structure Confirmation of ZrB₁₂ Using Neutron Powder Data C.H.L. Kennard and R.L. Davis	81
Refinement of the Structure of Beta'-MoO₃ J.B. Parise, E.M. McCarron, A.W. Sleight and E. Prince	85
Problems in Determining the Structure of the Gamma Brass Alloy Cu_{64.8}Al_{28.3}Zn_{6.9} by Powder and Single Crystal Neutron Diffraction E.H. Kisi	89
Phase Transitions and Disorder in Rubidium Nitrate B.W. Lucas	95
The Nature of the Structural Transition in K₂Hg(CN)₄ from Powder Diffraction and Inelastic Scattering Measurements B.M. Powell and P.N. Gerlach	99
Arrangement and Dynamics of Water in Natural Zeolites H. Fuess and E. Stuckenschmidt	103
Studies of Transverse Phonon Modes in Premartensitic Indium-Thallium Alloys[§] T.R. Finlayson, D. Donovan, J.Z. Larese and H.G. Smith	107
Neutron Diffraction Studies of Potassium Thiocyanate D.J. Cookson, M. Elcombe and T.R. Finlayson	113
Hydrogen Dynamics in Hydroxy-Sodalite Na₈[AlSiO₄]₆(OH)₂ J. Felsche, S. Luger, W. Bühner and I. Anderson	117
High Energy Neutron Inelastic Scattering From H₂ in C₂₈Cs(H₂)_{1.52} P.R. Hirst, J.W. White, Z.A. Bowden, L.M. Needham and A.D. Taylor	119
IQNS Study of Hexadecane Motions in Urea Inclusion Compounds H. Boysen, F. Frey and H. Blank	123
Inelastic and Quasielastic Neutron Scattering Study of the 1-D Dynamics of K-Hollandite E. Rosshirt, F. Frey, H. Boysen, G. Eckold and U. Steigenberger	129
Large Molecule Crystallography S.A. Mason	135
Conformation of the Coat Protein of Filamentous Bacteriophage Pfl Determined by Neutron Diffraction W. Stark, B.P. Schoenborn and L. Makowski	137

Hydrogen Bonding Patterns and Dynamics in Biological Macromolecules W. Saenger, C. Betzel, V. Zabel, G.M. Brown, B.E. Hingerty and S.A. Mason	145
The Transient Alignment of Rodlike Micelles in a Shear Gradient G. Neubauer, L. Herbst, H. Hoffmann, K. Ibel and J. Kalus	147
Neutron Structure of the Immunosuppressant Cyclosporin-A R.B. Knott, J. Schefer and B.P. Schoenborn	151
Neutron Scattering of Ubiquinone and Gramicidin A in Lipid Bilayers L.E. Weir, R.B. Knott and B.A. Cornell	159
Small Angle Neutron Scattering Measurements of Micelle to Gel Transition in Solutions of CTAB and Sodium Salicylate P.S. Goyal, J.A.E. Desa, S.L. Narasimhan, B.A. Dasannacharya, B.A. Valaulikar, V.K. Kelkar and C. Manohar	163
Doing More With Polarised Neutrons T.J. Hicks	167
Magnetic Diffuse Scattering J.W. Cable	181
Neutron Scattering from "Reentrant" Spin Glasses A.P. Murani	195
The Crystal Structure of $\text{UCp}_3\text{Cl}(\text{Cp}=\text{C}_5\text{H}_5)$ by Neutron Diffraction A. Delapalme, P. Schweiss, M.R. Spirlet, J. Rebizant and B. Kanellakopulos	211
Magnetic Field on Nucleus Position in Iron Metal Calculated from the Coherent Magnetic Neutron Scattering V.A. Strel'tsov and R.P. Ozerov	217
Observation of Dynamical Effects in Neutron Scattering by Perfect Magnetic Crystals V.V. Kvardakov, V.A. Somenkov and S.S. Shilstein	221
Topochemical Li-ION Insertion into FeClMoO_4 and $\text{Fe}_2(\text{MoO}_4)_3$: Structure and Magnetism of LiFeClMoO_4 and $\text{Li}_2\text{Fe}_2(\text{MoO}_4)_3$ C.C. Torardi, W.M. Reiff, J.H. Zhang and E. Prince	223
The Magnetic Structure of Transition-Metal Tetrametaphosphates K. Rohwer, W. Gunsser and A. Wiedenmann	229
Magnetic Phase Transitions in Quasi-One Dimensional Antiferromagnets: Ferrosilite, $\text{Fe}_2\text{Si}_2\text{O}_6$, and Hedenbergite, $\text{CaFeSi}_2\text{O}_6$ S. Ghose, A.W. Hewat, N. Van Dang and J.R. Weidner	235
Magnetic Helical Ordering in Intermetallic RE-Fe-Al Compounds W. Schäfer, M. Grönefeld, G. Will and J. Gal	243
Magnetic Structures of Er_3Al_2 R.L. Davis, R.K. Day, J.B. Dunlop and B. Barbara	249
The Helical - Paramagnetic Phase Transition in Dy and Ho-Tb Single Crystals P.d.V. du Plessis, G.H.F. Brits, H. Abelman and E. Fawcett	253
The Sinusoidal - Paramagnetic Phase Transition in Erbium P.d.V. du Plessis and G.H.F. Brits	257
Magnetic Diffuse Scattering from Amorphous Cu-Zr Containing Manganese L.D. Cussen and T.J. Hicks	261
Distribution of Magnetic Moment Defect in $\text{Fe}_{3-x}\text{Mn}_x\text{Si}$ Alloys H. Kepa, T.J. Hicks and R.L. Davis	267
Small Angle Polarized Neutron Scattering in the Superconducting Y-Ba-Cu-O Ceramic L.A. Axelrod, G.P. Gordeev, I.M. Lazebnik, V.A. Lebedev, S.V. Maleyev, A.I. Okorokov, V.V. Runov, V.N. Slyusar, B.P. Toperverg, A.D. Tretyakov and R.Z. Yagud	273
Magnetic Excitations, Cluster Modes and Disorder Phenomena in $\text{Rb}_2\text{Mn}_x\text{Cr}_{1-x}\text{Cl}_4$ D. Sieger, H. Tietze, P. Schweiss, W. Treutmann, S. Bates, R.A. Cowley and R. Geik	279
Neutron Diffraction Study of the $\text{U}_{1-x}\text{Np}_x\text{O}_2$ Fluorites A. Boeuf, R. Caciuffo, M. Pages, J. Rebizant, F. Rustichelli and A. Tabureau	285
Neutron Optical Tests of Schrödinger's Wave Mechanics A.G. Klein	287
Neutron Guide System and New Instrumentation at the Upgraded Reactor BER II W. Wagner	289
The Continuous Spallation Source SINQ G.H. Bauer	299

Measurement of the Charge of the Free Neutron J. Baumann, R. Gähler, J. Kalus and W. Mampe	307
Diffraction of Neutrons by Surface Acoustic Waves A. Cimmino, W.A. Hamilton, A.G. Klein, G.I. Opat and P.A. Timmins	311
Multilayer Monochromators for Neutron Spectrometers A.M. Saxena and B.P. Schoenborn	313
A Drabkin-Device as a Timevariable Neutron Analyzer G. Badurek, A. Kollmar, A. Seeger and W. Schalt	319
Small Angle Neutron Scattering - Metallurgical Applications G. Kostorz	325
SANS from Polymers and Colloids J.B. Hayter	345
Application of Neutron Diffraction to Engineering Problems T. Holden, J.H. Root, V. Fidleris, R.A. Holt and G. Roy	359
New Permanent Magnet Materials W.B. Yelon	371
Zeolite Functions Studied by Neutron Diffraction J.M. Newsam	385
The Immobilisation of Cesium in Synroc R.W. Cheary	397
An Analytical Solution of Multiple Small-Angle Neutron Scattering S. Mazumder and A.D. Sequeira	407
Microstructural Characterization of Alloys by SANS: A Study on Nimonic PE16, Ni-Al-Ti and Cu-Ni-Fe W. Wagner	413
Recent Applications of Small-Angle Neutron Scattering to the Study of Structural Materials S. Abis, R. Caciuffo, R. Coppola, M. Stefanon and F. Rustichelli	421
Non-Destructive Analysis of the Gamma' Precipitation in a Udimet 720 Ni Superalloy Turbine Blade by SANS P. Bianchi, F. Carsughi, D. D'Angelo, J. Kulda, A. Mengoni, P. Mikula and F. Rustichelli	429
SANS from a LaNi₅ Hydrogen-Storage Alloy E.M. Grey	433
Small Angle X-Ray and Neutron Scattering from Electrically Conducting Block Co-Polymers M. Aldissi, S.J. Henderson, J.W. White and T. Zemb	437
Small-Angle Neutron Scattering Study (SANS) of Star-Branched Polymers in the Molten State J.C. Horton, G.L. Squires, A.T. Boothroyd, L.J. Fetters, A.R. Rennie, C.J. Glinka, R.A. Robinson and J. Klein	445
Small-Angle Neutron Scattering Study (SANS) of Star-Branched Polymers in Dilute Solution A.T. Boothroyd, G.L. Squires, L.J. Fetters, A.R. Rennie, A.M.B.G. de Vallera and J.C. Horton	451
Texture Analysis by Neutron Diffraction G. Will, S. Höfler and W. Schäfer	457
Triaxial Residual Stress Measurement Using Neutron Diffraction A.I. Johnston, T.R. Finlayson and J.R. Griffiths	465
Determination of Hydrogen Content by Polarization Analysis J.C. Osborn, T.J. Hicks and R.J. Hill	471