

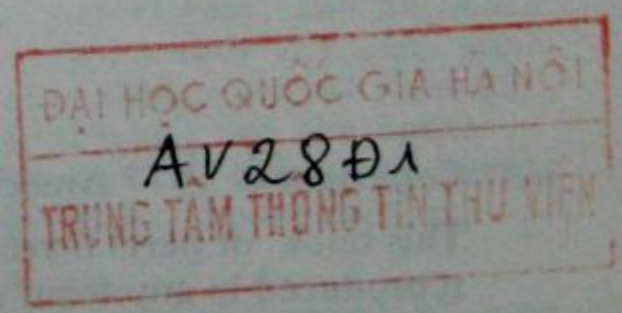
530
AIP
1977

22.3

AIP Conference Proceedings
Series Editor: Hugh C. Wolfe
No. 38

Workshop on New Directions in Mössbauer Spectroscopy (Argonne 1977)

Editor
Gilbert J. Perlow
Argonne



American Institute of Physics
New York 1977

CONTENTS

Experiments in the Accelerator Beam: Change in the Charge Radius of 2^+ Rotational Levels S. S. Hanna	1
Change of the Mean Square Nuclear Charge Radius for the $2^+ - 0^+$ Transitions in ^{178}Hf , ^{182}W , and ^{186}Os F. E. Wagner, M. Karger, M. Seiderer, and G. Wortmann	13
New Results with ^{73}Ge : Dispersive Interference Effects and the 13.3 keV Mössbauer Resonance at Natural Linewidth L. Pfeiffer	23
The Quadrupole Interaction in Zinc Metal W. T. Vetterling and R. V. Pound	27
Piezoelectric Mössbauer Spectrometer with Fast Channel Advance Rates A. A. Forster, W. Potzel, and G. M. Kalvius	29
Mössbauer Effect with ^{137}La E. Gerdau, H. Winkler, and F. Sabathil	35
Some Recent Developments in the ^{181}Ta (6.2 keV) - Spectroscopy G. Wortmann, V. Dornow, A. Heidemann, and G. Trollmann	39
Improving the Resolution of Small Energy Shifts Using ^{67}Zn and ^{181}Ta R. V. Pound	41
Coherent Nuclear Scattering of Synchrotron Radiation G. T. Trammell, J. P. Hannon, S. L. Ruby, Paul Flinn, R. L. Mössbauer, and F. Parak	46
Symmetric Radiant State in Nuclear Resonant Bragg Scattering S. L. Ruby	50
Calibration Constants in Mössbauer Diffraction Experiments J. G. Mullen and J. R. Stevenson	55
The Selective Excitation Method G. R. Hoy	59
Coherence and Interference in the Mössbauer Effect H. J. Lipkin	63
Can the Sign of the EFG be Obtained from Combining TDPAC and Mössbauer Techniques? G. R. Hoy, J. Chappert, and H. C. Benski	72
Comment to the Paper of Hoy, Chappert, and Benski M. Peshkin	76

Dispersion Amplitudes in the Mössbauer Lineshape of ^{237}Np , ^{182}W , and ^{195}Pt	
W. Potzel, F. E. Wagner, G. M. Kalvius, L. Asch, J. C. Spirlet, and W. Müller	77
Mössbauer Experiments in Analogy to Optical Activity	
U. Gonser, H. Engelmann, H. Brunner, M. Muschiol, and W. Nowak .87	
Preliminary Report on an Experiment to Excite Nuclear Resonance by Synchrotron Radiation	
R. L. Cohen, G. L. Miller, and K. W. West	91
Fast Data Acquisition in Mössbauer Spectroscopy	
G. M. Kalvius, W. Potzel, W. Koch, A. Forster, L. Asch, F. E. Wagner, and N. Halder	93
Results Obtained with the Integrating Counting Technique Applied to ^{197}Au Mössbauer Spectroscopy	
M. P. A. Vieggers and J. M. Trooster	102
Spherical Electrostatic Electron Spectrometer for Mössbauer Spectroscopy	
N. Benczer-Koller and B. Kolk	107
Rayleigh Scattering of Mössbauer Radiation from Plastic Crystals	
D. C. Champeney	112
Mössbauer Scattering from a Supercooled Liquid	
M. Soltwisch, M. Elwenspoek, and D. Quitmann	114
Mössbauer Studies in a ^3He - ^4He Dilution Refrigerator: Search for "Nuclear Cooperative Phenomena"	
B. B. Triplett, N. S. Dixon, Y. Mahmud, and S. S. Hanna	118
Mössbauer Measurements at Very Low Temperatures	
L. Logner, W. Gierisch, W. Potzel, F. J. Litterst, and G. M. Kalvius	130
Panel Discussion on Uses of Synchrotron Radiation	
R. L. Cohen, P. A. Flinn, E. Gerdau, J. P. Hannon, S. L. Ruby, and G. T. Trammell,	140