

CONTENTS

	PAGE
PREFACE	v
THE STEREOCHEMISTRY OF SOME ELEMENTS OF GROUP III ...	- 1
<i>D. C. BRADLEY, Ph.D., D.Sc., Professor of Chemistry, University of Western Ontario, London, Ontario, Canada</i>	
Some Aspects of the Chemistry of Boron	2
Some Aspects of the Chemistry of Aluminium	23
Aspects of the Chemistry of Gallium, Indium and Thallium ...	34
2 NUCLEAR MAGNETIC RESONANCE AND STEREOCHEMISTRY ...	53
<i>R. J. GILLESPIE, Ph.D., D.Sc., Professor of Chemistry, McMaster University, Hamilton, Ontario, Canada</i>	
<i>R. F. M. WHITE, B.Sc., Ph.D., Lecturer in Chemistry, Sir John Cass College, University of London, London</i>	
Nuclear Spin and Magnetic Moment	53
The N.M.R. Spectrometer	55
N.M.R. Spectra	56
Proton Magnetic Resonance Spectra	62
Boron Magnetic Resonance Spectra	71
Nitrogen Magnetic Resonance Spectra	77
Fluorine Magnetic Resonance Spectra	80
Phosphorus Magnetic Resonance Spectra	88
Conclusion	92
3 STERIC PROBLEMS IN THE HYDRATION OF IONS IN SOLUTION	95
<i>H. TAUBE, Professor of Chemistry, University of Chicago, Chicago, Ill.</i>	
Hydration of Cations	96
Hydration of Oxo- and Hydroxo-Ions	111
Hydration in Complex Ions	118
4 RESTRICTED ROTATION ABOUT SINGLE BONDS	138
<i>D. J. MILLEN, B.Sc., Ph.D., Reader in Chemistry, University College, London</i>	
Determination of Barrier Heights	139
Molecules with Threefold Barriers	143
Shapes of Potential Barriers	149
Origin of Potential Barriers	150
Rotational Isomerism	153
Restricted Rotation about other Single Bonds	161
Appendix	164

	PAGE
5 STERIC EFFECTS IN ACID-BASE REACTIONS	169
<i>V. GOLD, D.Sc., Ph.D., Reader in Physical Organic Chemistry, King's College, University of London, London</i>	
Equilibrium Constants	171
Quantitative Estimates of Ionic Effects	183
Physical Models for Steric Effects	185
Theoretical Calculations of Steric Effects	190
Kinetics	191
6 THE STEREOCHEMISTRY OF MANY-MEMBERED RINGS	202
<i>J. SICHER, D.Tech., D.Sc., Institute of Organic Chemistry and Biochemistry, Czechoslovak Academy of Science, Prague, Czechoslovakia</i>	
Fundamental Methods of Investigation	203
Ring Closure Reactions	213
Effect of Ring Size on Reactivity	222
Transannular Effects	238
Resolvability of Many-Membered Ring Derivatives	250
Interlocking Ring Systems: The Catenanes	257
7 THE STEREOCHEMISTRY OF ADDITION POLYMERS	264
<i>C. L. ARCUS, Ph.D., D.Sc., Reader in Chemistry, Battersea College of Technology, London</i>	
Formal Basis: Derivation of Configurations	264
Methods of Preparation of Tactic Polymers and Some Charac- teristics of the Processes	269
Characteristic Properties of Stereoregular Polymers	275
Stereochemical Aspects of Some Mechanisms of Tactic Polymeriza- tion	279
Optical Activity in Polymers	288
8 THE STERIC COURSE OF ENZYMATIC REACTIONS AT MESO CARBON ATOMS: APPLICATION OF HYDROGEN ISOTOPES	299
<i>H. R. LEVY, Ph.D., Assistant Professor, Ben May Laboratory for Cancer Research, University of Chicago, Chicago, Ill.</i>	
<i>P. TALALAY, M.D., Professor, Ben May Laboratory for Cancer Research and Department of Biochemistry, University of Chicago, Chicago, Ill.</i>	
<i>B. VENNESLAND, Ph.D., Professor, Department of Biochemistry, University of Chicago, Chicago, Ill.</i>	
Pyridine-Nucleotide-Linked Dehydrogenases	304
Stereochemistry of Enzymatic Reactions of Tricarboxylic Acid Cycle	320
Isomerases and Aldolase	335
Miscellaneous Reactions	341

ADDITIONAL REFERENCES ...

SUBJECT INDEX

... 351