

## CONTENTS

<b>Synthesis of Coordination Compounds</b>	1
John L. Burmeister, <i>University of Delaware, Newark, Delaware</i> and Fredrick Basalo, <i>Northwestern University, Evanston, Illinois</i>	
<b>The Boron Hydrides</b>	45
R. W. Parry and M. K. Walter, <i>Department of Chemistry,</i> <i>University of Michigan, Ann Arbor, Michigan</i>	
<b>Compounds Containing P—P Bonds</b>	103
Ekkehard Fluck, <i>Institut fur Anorganische Chemie der Universität,</i> <i>Stuttgart, Germany</i>	
<b>Condensed Phosphoric Acids and Condensed Phosphates</b>	157
C. Y. Shen and D. R. Dyroff, <i>Inorganic Chemicals Division,</i> <i>Monsanto Company, St. Louis, Missouri</i>	
<b>Author Index</b>	223
<b>Subject Index</b>	241
<b>Cumulative Index, Volumes 1-5</b>	247

# The Application of Reaction Mechanisms to the Synthesis of Coordination Compounds

JOHN L. BURMEISTER

*University of Delaware, Newark, Delaware*

*and*

FRED BASOLO

*Northwestern University, Evanston, Illinois*

I. Introduction . . . . .	1
II. Oxidation-Reduction Reactions . . . . .	4
A. Inner Sphere Mechanism . . . . .	4
B. Outer Sphere Mechanism . . . . .	13
III. Substitution Reactions . . . . .	17
A. Hydrolysis and Anation Reactions of Octahedral Complexes . . . . .	18
B. Substitutions without Metal-Ligand Cleavage . . . . .	20
C. The trans Effect . . . . .	25
D. Reactions of Metal Carbonyl and Nitrosyl Complexes . . . . .	29
E. Reactions of Square Planar Complexes . . . . .	31
IV. Miscellaneous Applications . . . . .	36
A. Stabilization of Metal Complexes by Large Counterions . . . . .	36
B. Resolution of Optically Active Amines . . . . .	37
References . . . . .	38