

CONTENTS

List of Contributors.....	v
Acknowledgments.....	vi
Preface.....	vii

THE USEFULNESS OF MEASUREMENTS OF THE PHYSICAL ADSORPTION OF GASES IN CHARACTERIZING CARBONS

J. W. SUTHERLAND

I. Introduction.....	1
II. Adsorption-isotherm Equations.....	7
III. Hysteresis.....	30
IV. Energetics of Adsorption.....	47
V. Concluding Remarks.....	59
References.....	60

THE USE OF ADSORPTION FROM SOLUTION IN EXAMINING POROUS CARBONS

J. J. KIPLING

I, Introduction.....	65
II. Experimental Methods.....	66
III. Theoretical Background.....	71
IV. Choice of Adsorbates.....	78
V. Conclusions and Summary.....	84
References.....	85

THE USE OF MOLECULAR PROBES IN THE CHARACTERIZATION OF CARBONACEOUS MATERIALS

D. H. T. SPENCER

I. Introduction.....	87
II. Molecular-sieve Materials.....	88
III. The Two Approaches to the Study of Molecular-sieve Carbons.....	91
IV. The Methods.....	92
References.....	151

CONTENTS

PERMEABILITY AND FLOW STUDIES

D. M. GROVE

I. Introduction	155
II. Description of Porous Media	156
III. Types of Flow	158
IV. Experimental Measurement of Permeability	186
V. Conclusion	198
References	200

FURTHER TECHNIQUES FOR THE STUDY OF PORE STRUCTURE BY LIQUID-METAL PENETRATION

G. F. HEWITT

I. Introduction	203
II. Mercury-permeability Measurements	204
III. Mercury-Graphite Conductivity Measurements	212
IV. Radiographic Studies of Metal Impregnation	218
V. Conclusion	224
References	224

MERCURY POROSIMETRY AND ALLIED TECHNIQUES

J. J. F. SCHOLTEN

I. Introduction	225
II. Experimental Methods and Apparatus	226
III. Results for Carbonaceous Materials	232
IV. Discussion	239
References	248

STUDIES OF THE MACROPOROSITY OF CARBONS BY USE OF SILVER IMPREGNATION AND SOFT X-RAYS

F. M. LANG AND P. MAGNIER

I. Impregnation with Molten Silver	251
II. Examination by Means of Soft X-Rays	267
References	271

RADIOGRAPHIC TECHNIQUES APPLIED TO CARBONS

R. JACKSON AND R. S. SHARPE

I. Introduction.....	273
II. General Principles of Radiography.....	274
III. X-Ray Absorption in Carbons.....	277
IV. Problems of Scatter.....	280
V. Application of Radiography to the Study of Macrostructure	282
VI. General Principles of Microradiography.....	287
VII. Application of Microradiography.....	289
VIII. Conclusions.....	294
References.....	295
Author Index	297
Subject Index	305