

Contents

LIST OF CONTRIBUTORS	vii
PREFACE	ix
CONTENTS OF VOLUME I	xiii

6. High-Field Superconducting Magnets

Y. Iwasa and D. B. Montgomery

I. Introduction	387
II. Various Applications of Superconducting Magnets	388
III. Magnet Design	400
References	483

7. Superconductive Machinery

Theodor A. Buchhold

I. Superconductive Bearings	489
II. Superconductive Motors	496
III. AC Losses	503
IV. Superconductive DC Generation (Flux Pumps)	510
V. Magnetically Suspended Trains	530
VI. Superconductive Machinery for Large Power	538
References	538

8. RF Superconducting Devices

William H. Hartwig and Cord Passow

I. Introduction	542
II. Theory of Superconductors in High-Frequency Fields	543
III. Residual Resistance	563

IV. Design and Performance of Superconducting Devices	580
V. Devices for Particle Acceleration and Deflection	605
VI. Applications of Low-Power Superconducting Resonators	614
VII. Transmission and Delay Lines	626
References	630
Special References	639

9. Future Prospects

Theodore Van Duzer

I. Introduction	642
II. Research Applications	644
III. Electrical Standards	651
IV. RF Signal Processing and Transmission	655
V. Computer Components and Systems	658
VI. Energy Conversion and Power Transmission	661
VII. Transportation	665
VIII. Miscellaneous	666
IX. Summary	667
References	669
INDEX FOR VOLUME II	673
INDEX FOR VOLUME I	685