

CONTENTS

PREFACE	vii
ACKNOWLEDGMENTS	ix
1. OVERVIEW OF SUPERCONDUCTIVITY	1
Introduction, 1	
Historical Background, 2	
Experimental Developments, 5	
Recent Discoveries, 7	
Fundamentals of Superconductivity, 9	
Assessment of Technology, 18	
2. SUPERCONDUCTIVITY APPLICATIONS	22
Introduction, 22	
Magnet Applications, 24	
Medical Applications, 27	
Superconducting Super Collider (SSC), 29	
Superconducting Radiofrequency Cavities, 32	
Defense Systems Applications, 32	
Electronic Applications, 38	
Computer Systems, 41	
Sensor Applications, 42	
Analog Signal Processors, 43	
Magnetic Shielding, 44	
Voltage Standard, 44	

Electric Power and Utility Applications,	44
3. MARKET POTENTIAL	52
Introduction,	52
Market for Superconductive Products,	54
Business Guide to Superconductive Products,	63
Superconductivity Federal Funding in the U.S.,	63
Superconductivity Funding in Japan,	63
Worldwide Competition,	74
4. COMMERCIALIZING SUPERCONDUCTIVITY	78
U.S. Government and Industry,	78
The Government Role,	82
Commercialization,	84
Competitive Advantage,	88
Mechatronics,	90
Commercializing High-Temperature Superconductors,	90
5. SUPERCONDUCTIVITY DEFINITIONS A–Z	100
6. ACRONYMS AND ABBREVIATIONS	164
7. PERIODICAL LITERATURE	166
8. JOURNAL PAPERS	180
9. CONFERENCE PROCEEDINGS AND PAPERS	190
10. SUPERCONDUCTIVITY REFERENCE BOOKS	210
11. INFORMATION RESOURCES	214
National Information Centers,	214
Newsletters,	214
Journals,	216
Reports, Abstracts, Directories,	217
Video Resources,	218
Studies,	219
Associations,	220
12. PRODUCTS AND SERVICES	222
Materials,	222
Hardware Systems,	226
Software Product,	226
Educational/Demonstration Kits,	227
13. POINTS OF CONTACT	228
14. THE FEDERAL SUPERCONDUCTIVITY INITIATIVE	305
Legislative,	307
Administrative,	307