

Contents

List of Contributors	vii
Preface	xi
1. Classification of Carbon	1
<i>Kazuyoshi Tanaka</i>	
2. Multidimensional Aspects of Single-Wall Carbon Nanotube Synthesis	7
<i>Takeshi Saito</i>	
3. Differentiation of Carbon Nanotubes with Different Chirality	19
<i>Kazuhiro Yanagi</i>	
4. Preparation of Graphene with Large Area	39
<i>Yong Cheol Shin, Mildred S. Dresselhaus, Jing Kong</i>	
5. Optical Properties of Carbon Nanotubes	77
<i>Riichiro Saito, Mildred S. Dresselhaus</i>	
6. Phonon Structures and Raman Effect of Carbon Nanotubes and Graphene	99
<i>Hans Kuzmany</i>	
7. Transport Properties of Carbon Nanotubes and Graphene	151
<i>Daniela Dragoman, Mircea Dragoman</i>	
8. Mechanical Properties of Carbon Nanotubes and Graphene	165
<i>Zhong Hu, Xiaoxing Lu</i>	

9. Organometallic Chemistry of Carbon Nanotubes and Graphene	201
<i>Santanu Sarkar, Elena Bekyarova, Robert C. Haddon</i>	
10. Preparation and Properties of Carbon Nanopeapods	225
<i>Toshiya Okazaki</i>	
11. Applications of Carbon Nanotubes and Graphene in Spin Electronics	253
<i>Akihiro Ito, Kazuyoshi Tanaka</i>	
12. Biological Application of Carbon Nanotubes and Graphene	279
<i>Zhao Jun Han, Amanda E. Rider, Caitlin Fisher, Timothy van der Laan, Shailesh Kumar, Igor Levchenko, Kostya (Ken) Ostrikov</i>	
13. Characteristics and Applications of Carbon Nanotubes with Different Numbers of Walls	313
<i>Chuan-Fu Sun, Brendan Meany, YuHuang Wang</i>	
14. Graphene Oxide: Some New Insights into an Old Material	341
<i>Kalyan Raidongia, Alvin T.L. Tan, Jiaxing Huang</i>	
15. Graphene Nanoribbon and Nanographene	375
<i>Kazuyoshi Tanaka</i>	
16. Application of Functional Hybrids Incorporating Carbon Nanotubes or Graphene	387
<i>Cameron J. Shearer, Alexey Cherevan, Dominik Eder</i>	
Index	435