

Contents

Preface — V

About the book — IX

Author biographies — XI

1 Carbon allotropes — 1

- 1.1 Fullerenes — 1
- 1.2 Cyclo[*n*]carbon — 2
- 1.3 Carbon nanotubes — 4
- 1.4 Graphene — 6

2 Beginnings of radially contorted aromatics — 9

- 2.1 Toward armchair geometries — 9
- 2.2 Toward zigzag geometries — 11

3 Carbon nanorings — 17

- 3.1 [*n*]Cyclo-*para*-phenylenes — 17
- 3.2 Polyaromatic-containing nanorings — 20
- 3.3 Doped and mixed-aromatic nanorings — 28

4 Carbon nanobelts — 35

- 4.1 Armchair and chiral nanobelts — 35
- 4.2 Zigzag nanobelts — 38
- 4.3 Metal-containing nanobelt — 40

5 Carbon-based nanotubes — 43

- 5.1 End-cap-derived nanotubes — 43
- 5.2 Tubularenes — 45
- 5.3 Phenine nanotubes — 48
- 5.4 Template-assisted porphyrin nanotubes — 52

References — 57

Index — 71