

Contents

About the Editors	vii
Preface	ix
Introduction	1
Part 1 Fractals	
Chapter 1	
<i>Jones:</i> Fractals Before Mandelbrot	7
Chapter 2	
<i>Reeve:</i> Mandelbrot, Julia Sets and Nonlinear Mappings	35
Chapter 3	
<i>Batty:</i> Cities as Fractals: Simulating Growth and Form	43
Chapter 4	
<i>Kaandorp:</i> Modelling Growth Forms of Sponges with Fractal Techniques	71
Chapter 5	
<i>Saupe:</i> Random Fractals in Image Synthesis	89
Chapter 6	
<i>Horn:</i> IFSs and the Interactive Design of Tiling Structures	119
Chapter 7	
<i>Bressloff and Stark:</i> Neural Networks, Learning Automata and Iterated Function Systems	145

Part 2 Chaos

Chapter 8	
<i>Crilly</i> : The Roots of Chaos—A Brief Guide	193
Chapter 9	
<i>Lansdown</i> : Chaos, Design and Creativity	211
Chapter 10	
<i>Novak</i> : Relativistic Particles in a Magnetic Field	225
Chapter 11	
<i>Mullin</i> : Chaos in Physical Systems	237
Chapter 12	
<i>Darbyshire and Price</i> : Phase Portraits from Chaotic Time Series	247
Chapter 13	
<i>Pottinger</i> : Data Visualisation Techniques for Nonlinear Systems	259
Index	269