

Table of Contents

Preface	Louis H. Kauffman	v
Knot Logic	<i>Department of Mathematics, Statistics and Computer Science 851 South Morgan Street University of Illinois at Chicago, Chicago, Illinois 60607-7045 E104516 UICDMB.TEX</i>	1
On Vortex Atoms; On Vortex Motion; Vortex Statics	<i>Sir William Thomson, Lord Kelvin</i>	111
Connection between Spin, Statistics, and Kinks	<i>David Finkelstein and Julio Rubinstein</i>	193
Flux Quantization and Particle Physics	<i>Herbert Jehle</i>	211
Knot Wormholes in Geometrodynamics?	<i>Eckehard W. Mielke</i>	229
Helicity and the Calugareanu Invariant	<i>H.K. Moffatt and Renzo L. Ricca</i>	251
Witten's Invariant of 3-Dimensional Manifolds: Loop Expansion and Surgery Calculus	<i>Lev Rozansky</i>	271
2+1 Dimensional Quantum Gravity as a Gaussian Fermionic System and the 3D-Ising Model	<i>Maurizio Martellini and Mario Rasetti</i>	301
Vassiliev Knot Invariants and the Structure of RNA Folding	<i>Louis H. Kauffman and Yuri B. Magarshak</i>	343
The Entanglement Structures of Polymers	<i>Alison MacArthur</i>	395
Synthesis and Cutting "In Half" of a Molecular Möbius Strip — Applications of Low Dimensional Topology in Chemistry	<i>David W. Walba, Timothy C. Homan, Rodney M. Richards and R. Curtis Haltiwanger</i>	427
Turning a Penrose Triangle Inside Out	<i>Thaddeus M. Cowan</i>	465
List of Authors		477