

CONTENTS

Foreword	v
Supercomputing – Powerful Tool for Scientific Discovery and Industrial Competitiveness	1
<i>C. J. Conti</i>	
Origin and Evolution of the Desert (reprinted from <i>Interdisciplinary Science Reviews</i>, Vol. 13 (1988) pp. 331–347)	25
<i>F. El-Baz</i>	
From A Life of Physics	42
<i>A. Salam</i>	
Simple Views on Adhesion and Fracture (reprinted from <i>Canadian Journal of Physics</i>)	110
<i>P. G. de Gennes</i>	
Direct Methods in the Calculus of Variations	130
<i>E. Giusti</i>	
The Index of a Minimal Surface	148
<i>M. P. do Carmo</i>	
Quantum Phases and Angles	159
<i>R. Jackiw</i>	
The Fractional Quantum Hall Effect (reprinted from <i>Physics in a Technological World</i> (1988) pp. 185-210)	171
<i>H. L. Stormer</i>	
Tracing the Mechanism of Electroweak Symmetry Breaking	209
<i>S. Weinberg</i>	
Dark Matter and the Emergence of Structure in the Universe	218
<i>M. J. Rees</i>	
Mathematician's View on the Development of Physics	238
<i>L. D. Faddeev</i>	
Science in Technology	247
<i>P. Chaudhari</i>	

Band-Gap Engineering: From Physics and Materials to New Semiconductor Devices (reprinted from <i>Science</i>, Vol. 235 (1987) pp. 172–176)	255
<i>F. Capasso</i>	
Proton Decay and Neutrino Astrophysics	260
<i>A. K. Mann</i>	
Proteins – Paradigms of Complex Systems	273
<i>H. Frauenfelder</i>	
Understanding High-T_c	288
<i>J. R. Schrieffer</i>	

