

Contents

Part I Nonlinear Surface Acoustic Waves and Applications

State-of-the-Art Elastic SAW Convolvers By H.P. Grassl, L. Reindl, and H.-W. Wörz (With 9 Figures)	2
Multiple Scale Techniques Applied to Nonlinear Elastic and Piezoelectric Surface Waves By G.E. Tupholme	14
Nonlinear Evolution of Piezoelectric SAWs By E.A. David and D.F. Parker (With 4 Figures)	21
Nonlinear Piezoelectric Surface Acoustic Waves Using the Multiple Scales Technique By A.P. Harvey, R.E. Craine, and S. Syngellakis (With 1 Figure)	30
Linear and Nonlinear Surface Waves on Magnetostrictive Crystals in a Bias Magnetic Field By Abo-El-Nour Abd-Alla and G.A. Maugin (With 2 Figures)	36
Nonlinear Mode Coupling Between Rayleigh and Love Waves on an Isotropic Layered Half-Space By N. Kalyanasundaram	47
Finite Amplitude Love Waves on an Incompressible Elastic Layered Half Space By M. Teymur (With 1 Figure)	54
Nonlinear Surface Acoustic Waves and Their Associated Surface Acoustic Solitons By A.A. Maradudin	62
Experiments on Nonlinear Effects in Ground-Surface Vibration By P.P. Dimitriu (With 6 Figures)	72

Part II	Surface Waves on Anisotropic Substrates	
Aspects of the Behaviour of Surface Waves in Transversely Isotropic Elastic Media		
By P. Chadwick (With 3 Figures)		80
A New Method for Surface Impedance and Surface Wave Calculations		
By S.A. Gundersen and J. Lothe (With 3 Figures)		91
<hr/>		
Part III	Surface Waves on Rough Surfaces	
Surface Acoustic Waves on Rough Surfaces		
By A.A. Maradudin (With 12 Figures)		100
Rayleigh Waves Along a Corrugated Surface		
By A. Boström (With 3 Figures)		129
Localization Effects in the Scattering of Acoustic Waves from a Random Stress-free Grating Surface		
By A.R. McGurn and A.A. Maradudin (With 3 Figures)		135
A Comparison of Some Methods for Corrugated Waveguides		
By S.-E. Sandström (With 1 Figure)		143
Love Waves in a Slab with Rough Boundaries		
By A. Wirgin (With 2 Figures)		145
<hr/>		
Part IV	Surface Waves on Electromagnetic Bodies	
Shear Horizontal Surface Acoustic Waves on Solids		
By G.A. Maugin (With 6 Figures)		158
Calculation of Interdigital Transducer Interaction with SAWs and BAWs		
By F. Seifert, A.R. Baghai-Wadji, K.C. Wagner, and G. Kovacs (With 7 Figures)		173
Bleustein-Gulyaev Surface Waves of Arbitrary Form		
By W. Larecki		185
A Dynamic Problem for a Piezoelectric Medium		
By J.P. Nowacki and C. Trimarco		193
Electromechanical Surface Waves in Layered Elastic Dielectrics with Polarization Gradient		
By K. Majorkowska-Knap and J. Lenz (With 5 Figures)		201

Surface Waves in a Semiconductor with Relaxation of Charge Carrier Field By B. Maruszewski (With 3 Figures)	211
--	-----

Part V Surface Waves on Composites

Acoustic Properties of Periodic Layers By G.W. Farnell (With 20 Figures)	218
Surface Waves on a Laminated Half-Space By W.A. Green (With 1 Figure)	236
Surface and Interface Waves in a Sandwich Plate with Interface Soft Layers By S.K. Datta, A.H. Shah, T. Chakraborty, and R.L. Bratton (With 5 Figures)	243
Rayleigh Waves in Materials Reinforced by Two Families of Fibres By D.I. Milosavljević (With 1 Figure)	251
Dispersion of Harmonic Waves in Elastic and Viscoelastic Periodic Composite Materials By Y. Chevalier (With 4 Figures)	260

Part VI Waves on Curved and Fluid-Loaded Surfaces, in Viscoelasticity and in Thermoelasticity

Mathematical and Computational Aspects of the Determination of Elastic Surface Waves Along Cylindrical Cavities of General Cross Section By A. Bamberger, P. Joly, and M. Kern (With 2 Figures)	270
Low Frequency Propagation of Elastic Waves in a Fluid-Filled Borehole By A. Bamberger, P. Joly, M. Kern, L. Nicoletis, and J. Quiblier (With 4 Figures)	282
Surface Vibration of a Semi-infinite Viscoelastic Medium By P.M. O'Leary (With 4 Figures)	291
Surface Waves on an Isotropic Viscoelastic Half-Space: The Method of Generalized Rays By P. Borejko and F. Ziegler (With 9 Figures)	299
Acoustical Scattering by a Shallow Surface-Breaking Crack in an Elastic Solid Under Light Fluid Loading By R.H. Tew, J.R. Ockendon, and G.A.D. Briggs (With 6 Figures)	309

Determination of the Rheological Parameters of Viscoelastic Liquids Using Shear Surface Waves By P. Kielczyński and W. Pajewksi	317
The Influence of Off-Centre Defects on SAW Characteristics By J. Kapelewski and W. Przybyski	322
On the Propagation of Surface Waves By T.P. Ivanov (With 6 Figures)	328
Surface Waves in Thermoelasticity with Relaxation Times By R. Wojnar (With 1 Figure)	335
Surface Waves in a Nonlocal Elastic Medium By C. Rymarz (With 5 Figures)	342
Index of Contributors	351