## CONTENTS

INTRO	ODUCTION	1
	PART A: MONOLITHIC CERAMICS	
I.	SOME EFFECTS OF MICROCRACKS ON THE MECHANICAL PROPERTIES OF	
	BRITTLE SOLIDS	6
II.	EVALUATION OF RELIABILITY OF BRITTLE COMPONENTS BY THERMAL	
	STRESS TESTING	66
	PART B : CERAMIC MATRIX C OMPOSITES	
III.	FAILURE MECHANISMS IN CERAMIC-FIBER/CERAMIC MATRIX	
	COMPOSITES	90
IV.	THE MECHANICS OF MATRIX CRACKING IN BRITTLE-MATRIX FIBER	
	COMPOSITES	126
	PART C : CERAMIC/METAL BONDED SYSTEMS	
V.	ON THE MECHANICS OF FAILURE IN CERAMIC/METAL BONDED SYSTEMS	162
VI.	RESIDUAL STRESSES IN METAL/CERAMIC BONDED STRIPS	176
VII.	ON RESIDUAL STRESSES AND CRACKING IN METAL/CERAMIC SYSTEMS	
	FOR MICROELECTRONICS PACKAGING	215
	PART D : POLYMERS	
VIII.	MECHANISMS OF TOUGHENING IN RUBBER TOUGHENED POLYMERS	258
IX.	ON THE TOUGHNESS OF PARTICULATE FILLED POLYMERS	286
	PART E : WATER DROP IMPACT	
X.	A COMPUTER-GENERATED SIMULATION OF WATER DROP IMPACT	
	DAMAGE	308
XI.	STATISTICAL ANALYSIS OF DAMAGE INDUCED BY WATER DROP	
	OR WATER JET IMPACT	331
XII.	INNER RADIUS OF WATER DROP IMPACT DAMAGE FIELD	346