1.	Record Nr.	UNINA9910825868403321
	Autore	Kumar S
	Titolo	Advances in modeling and design of adhesively bonded systems / / edited by S. Kumar and K.L. Mittal
	Pubbl/distr/stampa	Hoboken, : Wiley, 2013
	ISBN	9781118754078 1118754077 9781118753682 1118753682 9781118754207 1118754204
	Edizione	[1st ed.]
	Descrizione fisica	1 online resource (280 p.)
	Collana	Adhesion and adhesives: fundamental and applied aspects
	Altri autori (Persone)	MittalK. L. <1945->
	Disciplina	621.825
	Soggetti	System design Mathematical models
	Lingua di pubblicazione	Inglese
	Formato	Materiale a stampa
	Livello bibliografico	Monografia
	Note generali	Description based upon print version of record.
	Nota di bibliografia	Includes bibliographical references and index.
	Nota di contenuto	Cover; Title Page; Copyright Page; Contents; Preface; Acknowledgements; 1 Stress and Strain Analysis of Symmetric Composite Single Lap Joints Under Combined Tension and In-Plane Shear Loading; 1.1 Introduction; 1.2 Equations and Solution; 1.2.1 Model Description; 1.2.2 Governing Equations for Tension Loading Nx; 1.2.3 Governing Equation for In-Plane Shear Loading Nxy; 1.2.4 Solutions; 1.2.4.1 Adhesive Peel Stress azz Due to Nx; 1.2.4.2 Adhesive Shear Stress axz Due to Nx; 1.2.4.3 Adhesive Shear Stress ayz Due to Nxy; 1.3 Solution Verification; 1.4 Yield Criterion; 1.5 Case Studies 1.6 SummaryReferences; 2 Finite Element Modeling of Viscoelastic Behavior and Interface Damage in Adhesively Bonded Joints; 2.1 Introduction; 2.2 Finite Element Analysis of Viscoelastic Adhesively Bonded Joints; 2.2.1 Constitutive Relation; 2.2.2 Numerical Example; 2.2.2.1 Stress Distribution along Overlap Length; 2.2.2.2 Effect of Thermal Expansion; 2.3 Damage Analysis of Viscoelastic Adhesively Bonded Joints; 2.3.1 Constitutive Relation of Cohesive Element; 2.3.1.1 Linear Elastic Traction-Separation Law; 2.3.1.2 Damage Initiation and

Sommario/riassunto	The book comprehensively charts a way for industry to employ adhesively bonded joints to make systems more efficient and cost-effective Adhesively bonded systems have found applications in a wide spectrum of industries (e.g., aerospace, electronics, construction, ship building, biomedical, etc.) for a variety of purposes. Emerging adhesive materials with im