1.	Record Nr.	UNINA9910450786503321
	Autore	Dorsey J (Julie)
	Titolo	Digital modeling of material appearance [[electronic resource] /] / Julie Dorsey, Holly Rushmeier, Francois Sillion
	Pubbl/distr/stampa	Amsterdam ; ; Boston, : Morgan Kaufmann/Elsevier, c2008
	ISBN	1-281-10000-5
		9786611100001
		0-08-055671-X
	Edizione	[1st edition]
	Descrizione fisica	1 online resource (329 p.)
	Collana	The Morgan Kaufmann series in computer graphics
	Altri autori (Persone)	RushmeierHolly E
		SillionFrancois X
	Disciplina	006.6
	Soggetti	Computer graphics
		Visualization
		Image processing - Digital techniques
		Electronic books.
	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 (p. 277-302) and index.
	Nota di contenuto	Front Cover; Digital Modeling of Material Appearance; Copyright Page; Table of Contents; Acknowledgments; Chapter 1. Introduction; Chapter 2. Background; 2.1 Light; 2.2 Human Perception and Judgments; 2.3 Image Synthesis; 2.4 Summary and Further Reading; Chapter 3. Observation and Classification; 3.1 A Tour of Materials; 3.2 Examples of Modeling Classes of Materials; Chapter 4. Mathematical Terms; 4.1 Energy as a Function of Time, Position, and Direction; 4.2 Radiance; 4.3 Reflectance and BRDF; Chapter 5. General Material Models; 5.1 Reflection and Refraction from a Smooth Surface 5.2 Empirical Models5.3 Analytical First Principles Models; 5.4 Simulation from First Principles; 5.5 Spectral Effects; 5.6 Other Effects; 5.7 Scattering in Volumes; 5.8 Spatial Variations; Chapter 6. Specialized Material Models; 6.1 Natural Organic Materials; 6.2 Natural: Inorganic; 6.3 Materials in Manufactured Goods; Chapter 7. Measurement; 7.1 Traditional Measurement; 7.2 Image-Based BRDF Measurements of Sample Materials; 7.3 Measurement of Existing Objects; 7.4 Simultaneous Shape and Reflectance Capture; 7.5 Small-Scale

Geometric Structures; 7.6 Alternative Representations

| Sommario/riassunto | Computer graphics systems are capable of generating stunningly realistic images of objects that have never physically existed. In order for computers to create these accurately detailed images, digital models of appearance must include robust data to give viewers a credible visual impression of the depicted materials. In particular, digital models demonstrating the nuances of how materials interact with light are essential to this capability. This is the first comprehensive work on the digital modeling of material appearance: it explains how models from physics and engineering are comb |