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Soggetti	Optical materials Electronics - Materials Electrochemistry Solid state physics Medicine Energy storage Surfaces (Physics) Interfaces (Physical sciences) Thin films Optical and Electronic Materials Solid State Physics Biomedicine, general Energy Storage Surface and Interface Science, Thin Films
Lingua di pubblicazione	Inglese
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Nota di contenuto	Routes of formation for porous silicon -- Porous Silicon formation by Anodisation -- Porous Silicon formation by Galvanic etching -- Porous Silicon formation by Stain etching -- Porous Silicon formation by Metal nanoparticle assisted etching -- Porous Silicon formation by Photoetching -- Porous Silicon formation by Vapour etching -- Porous Silicon formation by Porous silica reduction -- Porous Silicon formation by Mechanical means -- Macroporous silicon -- Mesoporous silicon --

Microporous silicon -- Pore volume in porous silicon -- Ultrathin porous silicon films -- Porous silicon multilayers & superlattices -- Porous silicon membranes -- MACE silicon nanostructures -- Polymer – porous silicon composites -- The tunable properties of porous silicon -- Thermal Properties of porous silicon -- Mechanical properties of porous silicon -- Mesopore diffusion within porous silicon -- Refractive index of porous silicon -- Optical Birefringence of porous silicon -- Colour of porous silicon -- Electrical transport in porous silicon -- Diamagnetic behaviour of porous silicon -- Ferromagnetism & ferromagnetic composites of porous silicon -- Paramagnetic and superparamagnetic silicon nanocomposites -- Photoluminescence of porous silicon -- Cathodoluminescence of porous silicon -- Electroluminescence of porous silicon -- Thermoluminescence of porous silicon -- Optical gain in porous silicon -- [...Many other topics].

Sommario/riassunto

The Handbook of Porous Silicon brings together the expertise of a large, international team of almost 100 academic researchers, engineers, and product developers from industry across electronics, medicine, nutrition and consumer care to summarize the field in its entirety with 150 chapters and 5000 references. The volume presents 5 parts which cover fabrication techniques, material properties, characterization techniques, processing and applications. Much attention was given in the past to its luminescent properties, but increasingly it is the biodegradability, mechanical, thermal and sensing capabilities that are attracting attention. The volume is divided into focussed data reviews with, wherever possible, quantitative rather than qualitative descriptions of both properties and performance. The book is targeted at undergraduates, postgraduates, and experienced researchers.
