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Titolo Structural, Optical and Spectral Behaviour of InAs-based Quantum Dot

> Heterostructures: Applications for High-performance Infrared Photodetectors / / by Saumya Sengupta, Subhananda Chakrabarti

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Soggetti Electronic circuits

> Lasers **Photonics**

Circuits and Systems

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Optics, Lasers, Photonics, Optical Devices

Lingua di pubblicazione

Sommario/riassunto

Inglese

Formato Materiale a stampa

Livello bibliografico Monografia

Nota di bibliografia Includes bibliographical references at the end of each chapters and

Nota di contenuto Introduction to Infrared Detectors and Quantum Dots -- Structural.

Optical and Spectral Characterization of Single Layer QDIPs --

Structural and Optical Characterization of Bilayer QD Heterostructures

-- Optical and Spectral Characterization of Sub-Monolayer QDIPs.

This book explores the effects of growth pause or ripening time on the properties of quantum dots(QDs). It covers the effects of post-growth rapid thermal annealing (RTA) treatment on properties of single layer

QDs. The effects of post-growth rapid thermal annealing (RTA) treatment on properties of single layer QDs are discussed. The book offers insight into InAs/GaAs bilayer QD heterostructures with very thin spacer layers and discusses minimum spacer thickness required to grow electronically coupled bilayer QD heterostructures. These techniques make bilayer QD heterostructures a better choice over the single layer and uncoupled multilayer QD heterostructure. Finally, the

book discusses sub-monolayer (SML) growth technique to grow QDs.

This recent technique has been proven to improve the device

performance significantly. The contents of this monograph will prove useful to researchers and professionals alike. .