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	Nota di contenuto	Intro -- Preface -- Acknowledgments -- Contents -- 1 Introduction -- 1.1 IoT Privacy Research Landscape -- 1.2 Machine Learning Driven Privacy Preservation Overview -- 1.3 Contribution of This Book -- 1.4 Book Overview -- 2 Current Methods of Privacy Protection in IoTs -- 2.1 Briefing of Privacy Preservation Study in IoTs -- 2.2 Cryptography-Based Methods in IoTs -- 2.3 Anonymity-Based and Clustering-Based Methods -- 2.4 Differential Privacy Based Methods -- 2.5 Machine Learning and AI Methods -- 2.5.1 Federated Learning -- 2.5.2 Generative Adversarial Network -- References -- 3 Decentralized Privacy Protection of IoTs Using Blockchain-Enabled Federated Learning -- 3.1 Overview -- 3.2 Related Work -- 3.3 Architecture of Blockchain-Enabled Federated Learning -- 3.3.1 Federated Learning in FL-Block -- 3.3.2 Blockchain in FL-Block -- 3.4 Decentralized Privacy Mechanism Based on FL-Block -- 3.4.1 Blocks Establishment -- 3.4.2 Blockchain Protocols Design -- 3.4.3 Discussion on Decentralized Privacy Protection Using Blockchain -- 3.5 System Analysis -- 3.5.1 Poisoning Attacks and Defence -- 3.5.2 Single-Epoch FL-Block Latency Model -- 3.5.3 Optimal Generation Rate of Blocks -- 3.6 Performance Evaluation -- 3.6.1 Simulation Environment Description -- 3.6.2 Global Models and Corresponding Updates -- 3.6.3 Evaluation on Convergence and Efficiency -- 3.6.4 Evaluation on Blockchain -- 3.6.5 Evaluation on Poisoning Attack Resistance -- 3.7 Summary and Future Work --

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Excimer lasersDye lasers; Ti:sapphire lasers; Semiconductor lasers; Other lasers used in spectroscopy applications; Non-linear optic effect in laser applications; Second harmonic; Third harmonic; Wave mixing; Parametric amplification and generation of the light; 4 Optical measurements; Noise statistics and accuracy of measurements; Systematic error and random noise; Noise statistics; Statistical approach to measurements; Noise sources; Inaccuracy of indirect measurements; Photosensitive devices; Photodetector performance parameters; Photomultiplier tubes; Semiconductor photo-detectors
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Cuvettes for absorption spectroscopyApplication notes and examples; 6 Steady State Emission Spectroscopy; Measurement of the Emission Spectrum; Fluorimeter; Optical Scheme; Use of Array Detectors; Evaluation of the Measured Signal; Spectrum Correction; Quantum yield determination by comparison method; Excitation spectrum; Sensitivity; Wavelength resolution; Samples for emission measurements; Excitation-monitoring schemes; Cuvettes; Effect of the sample absorption; Fluorimeter specifications; Water Raman scattering line as sensitivity test; Commercial Fluorimeters
Emission of molecular monolayer: An example

Sommario/riassunto

Optical Spectroscopy bridges a gap by providing a background on optics while focusing on spectroscopic methodologies, tools and instrumentations. The book introduces the most widely used steady-state and time-resolved spectroscopic techniques, makes comparisons between them, and provides the methodology for estimating the most important characteristics of the techniques such as sensitivity and time resolution. Recent developments in lasers, optics and electronics has had a significant impact on modern optical spectroscopic methods and instrumentations. Combining the newest l