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Nota di contenuto	Basic Principles of a Silicon Detector -- Radiation Damage in Silicon Detector Devices -- First Steps with Silicon Sensors: NA11 (Proof of Principle) -- The DELPHI Microvertex Detector at LEP -- CDF: The World's Largest Silicon Detector in the 20th Century; the First Silicon Detector at a Hadron Collider -- CMS: Increasing Size by two Orders of Magnitude -- CMS Phase 2: Tracker Upgrade and High Granularity Forward Calorimeter -- Continuing the Story: Detectors for a Future Linear Collider (ILC) or a Future Circular Collider (FCC) -- Conclusion and Outlook -- Glossary.

Sommario/riassunto

This third edition of a well-received monograph provides a comprehensive overview of the state-of-the-art of detectors and their evolution. In addition to the silicon sensor technology described in the second edition, the book covers the following new topics: precise timing detectors (3D sensors and sensors with intrinsic gain layers), passive CMOS sensors, new developments in HV-CMOS sensors, and sparking in strip and pixel detectors. The chapter on the HL-LHC CMS upgrades has been updated, and the historical overview has been enriched with a section on the UA2 SPD pad detector system. The book includes a wealth of schematics and photos of detectors. It is also valuable for detector courses at the master/PhD level.