1. Record Nr. UNINA9910736021303321

Titolo	Handbook of Particle Detection and Imaging [[electronic resource] /] / edited by Ivor Fleck, Maxim Titov, Claus Grupen, Irène Buvat
Pubbl/distr/stampa	Cham : , : Springer International Publishing : , : Imprint : Springer, , 2020
ISBN	3-319-47999-7
Disciplina	539.73
Soggetti	Particle acceleration Radiology Physical measurements Measurement Astrophysics Cultural property Particle Acceleration and Detection, Beam Physics Imaging / Radiology Measurement Science and Instrumentation Astrophysics and Astroparticles Cultural Heritage
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Basic Principles of Detectors and Accelerators -- Specific Types of Detectors -- Applications of Detectors in Particle, Astroparticle and Nuclear Physics, Security Environment and Art -- Applications of Particle Detectors and Accelerators in Medicine.
Sommario/riassunto	This handbook covers the fundamental principles of interactions of particles with matter and of most types of detectors used in many fields of physics, starting from particle physics, nuclear physics up to recent experiments for solid state physics. In this second edition chapters are updated to include the most recent developments in detector physics and additional chapters on new types of detectors, like silicon photomultipliers, have been added. In addition the section about

medical applications has been extended. All major detector types are described in detail by leading experts in these fields. It also gives deep insight into many applications from homeland security over radiation protection to a whole section about medical physics with strong emphasis on nuclear medicine. The book is suited to achieve a deep knowledge in the field of detector physics and imaging. It can also be used as a reference book to look up the working principles of a given detector type and to get an overview of state-of-the-art applications of the various detector types. It is also helpful for practitioners in nuclear medicine and radiology as it summarizes all detector types in this field and the basic working principles of these detectors. The area of radiation therapy is also covered in detail taking into account the most recent developments.