1. Record Nr. UNISALENTO991004404929407536

Autore	Polushkin, Vladimir
Titolo	Nuclear electronics with quantum cryogenic detectors / Vladimir Polushkin
Pubbl/distr/stampa	Hoboken, NJ : John Wiley & Sons, 2022
ISBN	9781119834687 9781119834694 9781119834717
Edizione	[2nd ed.]
Descrizione fisica	xv, 429 p. : ill. ; 29 cm
Classificazione	53.8.2 53.8.4
Disciplina	539.77
Soggetti	Superconductors Nuclear counters Semiconductor nuclear counters Molecular electronics Nanotechnology
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Note generali	Includes index
Sommario/riassunto	Building upon the first edition of Nuclear Electronics (Wiley 2005), the author returns with a focus on the technology of cryogenic detectors. Those of the quantum mechanical nature at ultra-low temperatures provide the best resolution, accuracy, and speed as radiation measurement tools. Providing reliable, powerful, and ultimately high-resolution diagnostic test results, a new generation of quantum cryogenic devices has appeared which are essential for Big Science (Astrophysics, Cosmology). For example, they are already installed in several large ground telescopes and will constitute base technology in the high-resolution spectrometer camera onboard the next X-ray telescope built by the European Space Agency (ESA), Athena, to be launched in 2032. However, analysis has shown that quantum cryogenic detectors are not used solely as stand-alone instruments but are often paired with semiconductor large frame cameras which provide

a broad picture of a sky or chemical sample. This new edition considers the interaction of semiconductor detectors with quantum devices to produce an essential one-stop reference