

1. Record Nr.	UNINA9910744501703321
Autore	Dryzek Jerzy
Titolo	Positron Profilometry : Probing Material Depths for Enhanced Understanding // by Jerzy Dryzek
Pubbl/distr/stampa	Cham : , : Springer Nature Switzerland : , : Imprint : Springer, , 2023
ISBN	3-031-41093-9
Edizione	[1st ed. 2023.]
Descrizione fisica	1 online resource (146 pages)
Collana	SpringerBriefs in Materials, , 2192-1105
Disciplina	620.112
Soggetti	Materials - Analysis Antimatter Condensed matter Building materials Materials Characterization Technique Matter-Antimatter Interactions Condensed Matter Physics Structural Materials
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di contenuto	Introduction -- Positron Annihilation Techniques -- Fate of Energetic Positrons in Matter -- Positron Implantation Profile -- Positron in Inhomogeneous Matter.
Sommario/riassunto	This book provides a comprehensive overview of positron profilometry, specifically focusing on the analysis of defect depth distribution in materials. Positron profilometry plays a crucial role in understanding and characterizing defects in a wide range of materials, including metals, semiconductors, polymers, and ceramics. By analyzing the depth distribution of defects, researchers can gain insights into various material properties, such as crystal structure, defect density, and diffusion behavior. The author's extensive research spanning a period of two decades has primarily centered on subsurface zones. These regions, located beneath the surface and subjected to various surface processes, play a crucial role in generating defect distributions. Three experimental techniques and their data analysis are described in detail: a variable-energy positron beam (VEP) called sometimes a slow

positron beam, a technique called implantation profile depth scanning (DSIP), and a sequential etching (SET) technique. The usability of these techniques is illustrated by many examples of measurements by the author and others.

---