1. Record Nr. UNINA9910742494203321 Autore Wang Zhong Lin Titolo Handbook of Triboelectric Nanogenerators / / edited by Zhong Lin Wang, Ya Yang, Junyi Zhai, Jie Wang Pubbl/distr/stampa Cham:,: Springer International Publishing:,: Imprint: Springer,, 2023 **ISBN** 3-031-28111-X Edizione [1st ed. 2023.] Descrizione fisica 1 online resource (1955 pages) Altri autori (Persone) YangYa ZhaiJunyi WangJie Disciplina 621.042 Soggetti Nanotechnology Materials Catalysis Force and energy Electric power production Renewable energy sources Electrical engineering Materials for Energy and Catalysis Mechanical Power Engineering Renewable Energy Electrical and Electronic Engineering Lingua di pubblicazione Inglese **Formato** Materiale a stampa Livello bibliografico Monografia Part I: Fundamentals of triboelectric nanogenerators -- Part II: Nota di contenuto Triboelectric nanogenerators as micro-nano power sources -- Part III: Triboelectric nanogenerators for blue energy and environment -- Part IV: Triboelectric nanogenerators as sensors and high voltage sources. Sommario/riassunto This handbook comprehensively covers the rapidly evolving field of power generation using triboelectric nanogenerators. Since their emergence in 2012, triboelectric nanogenerators have experienced fast

development both in fundamental science aspects and technological innovations resulting in a plethora of outstanding applications and

commercial opportunities in e.g. micro-nano energy systems, self-powered sensors, blue energy, and high-voltage power sources. The Handbook of Triboelectric Nanogenerators provides an indispensable overview of the state of the art in the field. It begins with a review of the physical and technological fundamentals and provides detailed coverage of triboelectric nanogenerators for cutting-edge applications from wearable electronics and medical implants to smart home sensing devices and human—machine interfacing. Edited and authored by active researchers in the field, the handbook offers a wealth of information for applied physicists and chemists, as well as materials scientists and engineers. In addition, mechanical and electronic engineers working in the fields of energy scavenging, power sources, and sensor-related application development will benefit greatly from the technical information presented in this groundbreaking reference work.