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Sommario/riassunto

"Presents the latest methods for designing and fabricating self-powered micro-generators and energy harvester systemsDesign and Fabrication of Self-Powered Micro-Harvesters introduces the latest trends of self-powered generators and energy harvester systems, including the design, analysis and fabrication of micro power systems. Presented in four distinct parts, the authors explore the design and fabrication of: vibration-induced electromagnetic micro-generators; rotary electromagnetic micro-generators; flexible piezo-micro-generator with various widths; and PVDF electrospunpiezo-energy with interdigital electrode.Focusing on the latest developments of self-powered microgenerators such as micro rotary with LTCC and filament winding method, flexible substrate, and piezo fiber-typed microgenerator with sound organization, the fabrication processes involved in MEMS and nanotechnology are introduced chapter by chapter. In addition, analytical solutions are developed for each generator to help the reader to understand the fundamentals of physical phenomena. Fully illustrated throughout and of a high technical specification, it is written in an accessible style to provide an essential reference for industry and academic researchers. Comprehensive treatment of the newer harvesting devices including vibration-induced and rotary electromagnetic microgenerators, polyvinylidene fluoride (PVDF) nanoscale/microscale fiber, and piezo-micro-generators Presents innovative technologies including LTCC (low temperature co-fire ceramic) processes, and PCB (printed circuit board) processes Offers interdisciplinary interest in MEMS/NEMS technologies, green energy applications, bio-related sensors, actuators and generators Presented in a readable style describing the fundamentals, applications and explanations of micro-harvesters, with full illustration

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