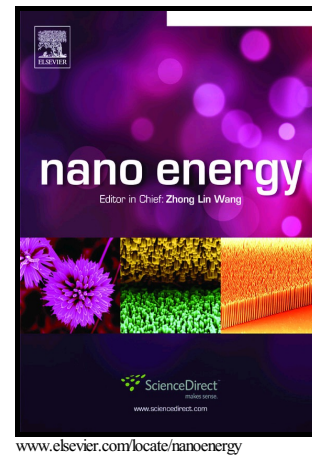


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Emerging Nanogenerator Technology in China: A Review and Forecast Using Integrating Bibliometrics, Patent Analysis and Technology Roadmapping Methods

Baicun Wang^{a,b,c1}, Yufei Liu^{d,1}, Yuan Zhou^{a,*}, Zhen Wen^e

^aSchool of Public Policy and Management, Tsinghua University, Beijing 100084, China.

^bDepartment of Energy and Power Engineering, Tsinghua University, Beijing 100084, China.

^cCenter for Strategic Studies, Chinese Academy of Engineering, Beijing 100088, China.

^dBritton Chance Center for Biomedical Photonics at Wuhan National Laboratory for Optoelectronics – Hubei Bioinformatics & Molecular Imaging Key Laboratory, Systems Biology Theme, Department of Biomedical Engineering, College of Life Science and Technology, Huazhong University of Science and Technology, Wuhan 430074, P.R. China.

^eInstitute of Functional Nano and Soft Materials (FUNSOM), Jiangsu Key Laboratory for Carbon-Based Functional Materials and Devices, and Joint International Research Laboratory of Carbon-Based Functional Materials and Devices, Soochow University, Suzhou 215123, China.

*Corresponding author: Dr. Y. Zhou (zhou_yuan@tsinghua.edu.cn)

Abstract

Many types of nanogenerators (NGs) have been developed in a rapid pace, the technological focus and trends of this fantastic emerging technology deserve in-depth exploration. This paper presents the outcomes of a technology roadmapping study based on the research on existing position of NGs. An integrating approach that combines bibliometrics, patent analysis and technology roadmapping method (TRM) workshops was applied. The bibliometrics and patent analysis provide a means of visualizing detailed information about the past trajectory and technological focus of the NGs technology. Its results show that China has been with the international forefront regard to research into NGs since 2013, especially in the field of triboelectric nanogenerators (TENG). Based on these quantitative results, key external factors which may shape the growth of NGs-based industry have been identified according to the experts' opinions. Finally, the future development

¹ B. Wang and Y. Liu contributed equally to this work.

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