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Editorial

Nanoenergy Advances—A New Open Access Journal to Report Nanoenergy Materials and Devices

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There are various types of nano-energies in our surroundings, such as mechanical energy produced by human motions, solar energy, thermal energy, and so on. However, effective ways to scavenge and store these types of energies still need to be explored. Nanogenerators such as piezoelectric, triboelectric, hybridized, coupled, thermoelectric, and pyroelectric nanogenerators can be utilized to scavenge the different energies [1–4], which have potential applications in self-powered sensor systems, blue energy, high-voltage power sources and other research fields [5–7]. Moreover, other energy scavenging materials and devices, such as redox-induced electricity for energy scavenging and self-powered sensing, have also attracted more and more interest [8,9]. Various energy storage devices such as Li-ion batteries and supercapacitors have been reported to store the produced energies from environments [10,11].

To scavenge solar energy, various solar cells and solar themoelectricity devices have been developed [12,13], where the efficiency and stability are still needed to be focused on in future, such as reported perovskite solar cells [14]. The photodetectors have attracted more and more interest due to the self-powered function, where some ferroelectric materials have excellent photovoltaic performances for the potential applications in photodetectors without using p-n junctions [15,16]. The coupling between different physical effects can induce some new effects, such as the ferro-pyro-phototronic effect and thermo-phototronic effect, where the thermo-phototronic effect is based on the semiconducting materials [17], while the ferro-pyro-phototronic effect is based on the ferroelectric materials [18]. These physical effects may have potential applications in solar cells, photodetectors, catalysis (photo or piezo or pyro-catalysis), and so on.

In recent years, along with the development of some new technologies including big data, Internet of Things, and artificial intelligence, new challenges such as energy supply and energy storage have become increasingly intense. Nanoenergy materials and devices including energy scavenging, energy storage, self-powered devices and other applications have shown great potential in addressing these challenges. Thus, it is of great significance to start an international journal that reports on the development of these fields. Here, we introduce you to *Nanoenergy Advances*, an international open access journal to report on nanoenergy materials and devices.

Finally, we warmly invite you to submit your paper related to the scope of *Nanoenergy Advances* and we would also like to suggest that you become one of our contributors. Additionally, we also hope that papers published in *Nanoenergy Advances* will interest you and be helpful for your research careers.

Conflicts of Interest: The author declares no conflict of interest.

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Short Biography of Author

Ya Yang has developed hybridized and coupled nanoenergy materials/devices for next generation energy scavenging technology and self-powered sensor systems. He has published one book and over 180 SCI papers, including *Science Advances*, *Energy & Environmental Science*, *Advanced Materials*, *Advanced Energy Materials*, *ACS Nano* and so on, which have been cited over 11,000 times with a H-index of 63 (Web of Science, time: 11 January 2021). He has obtained the second prize of National Nature Science of China as the fourth author in 2018. Moreover, he has held five international conferences and finished over 50 invited talks. He is the Editor-in-Chief of *Nanoenergy Advances*. He is an editorial board member of *Nano-Micro Letters*, *Nanoscale*, *Nanoscale advances*, *iScience*, *Scientific Reports*, *Nanomaterials*, and *Energies*. He is the guest editor of *Research*, *iScience*, *Nanomaterials*, and *Energies*. His research interests include ferroelectric materials and devices, hybridized and coupled nanogenerators, ferro-pyro-phototronic devices, and thermo-phototronic devices.