A Comprehensive Review of Energy Harvesting Techniques and its Potential Applications

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Authors:
Shancymol Sojan, R.K. Kulkarni

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Abstract

In the recent years, obtaining a sustainable form of energy to power various autonomous wireless and portable devices is increasingly becoming a matter of concern and various alternate sources of energy have been explored. This paper discusses energy harvesting or energy scavenging as an efficient approach to cater to the energy needs of portable electronics. A comparison of various ambient sources for harvesting energy is done and an insight into some applications based on this concept is made. Also discussed are some modifications to the existing harvesting architecture in which the selection of the source is considered as important criteria in designing the energy harvester. This concept can be used to produce variable outputs to power energy requirements of the various systems.

References

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Index Terms

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Keywords

Energy scavenging, ambient sources, TEG, RF, piezoelectric (PZT), biomedical, power ball, feedback energy harvester, PFCB, wind energy harvesting, smart wallpaper.