Abstract

With the increase in the use of portable devices in the present era, there arises a need to develop greener and more efficient methods of generating energy to power these devices. Despite vacuum tube electronics' weight and large associated battery, people living in the early 1900s have lugged such enormous "portable" radios to picnics and other events off the power grid. As electronics became smaller and required less power, batteries could grow smaller, enabling today's wireless and mobile applications explosion.
Portable devices (such as telephone, GPS, Walkman) are more and more popular and sophisticated. Thus they require more and more energy for comfortable use of new functionalities (TV on telephones, video on Walkman). The problem of the too frequent energy recharges of these objects, which make them less and less "nomadic", is then a topical subject. Indeed, the interest of having the video-telephony on the mobile phone becomes very limited since it is necessary to recharge the device more than once a day. One of the satisfactory response to this problem is to not always dependent on batteries and to look at the most promising alternatives at short or medium term. This technical paper focuses on such advanced methods of energy harvesting using piezoelectric material, photovoltaic cells, human generated power and virus based. The increasing prevalence and portability of compact, low power electronics requires reliable power sources. Compared to batteries, ambient energy harvesting devices show much potential as power sources. Energy harvesting has grown from long-established concepts into devices for powering ubiquitously deployed sensor networks and mobile electronics. Systems can scavenge power from human activity or derive limited energy from ambient heat, light, radio, or vibrations.

References

- Meninger S, Mur-Miranda J, Lang J, Chandrakasan A, Slocum A, Schmidt M and AmirTharajah R 2001 Vibration to electric energy conversion IEEE Trans Very Large Scale Integration(VLSI)
- Sunghwan Kim, "Low power energy harvesting with piezoelectric generators", (2002)
- Conference Center, Montreal, Canada, April 2004 R. J. Kuipers, "Engineering a human powered mp3 player"; Graduation report, Delft University of Technology, Delft,
Green Power Generation in Mobile Phones and Laptops

2003

Index Terms
- Computer Science
- Green Technology

Keywords
- Energy Harvesting
- Mobiles
- Laptops
- Piezoelectricity
- Human Movement
- Photovoltaic
- Virus Based