



materials



Special Issue Reprint

Smart Materials and Devices for Energy Harvesting

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mdpi.com/books/pdfview/book/5021

ISBN 978-3-0365-3122-9 (hardback)

ISBN 978-3-0365-3123-6 (PDF)



This book is devoted to energy harvesting from smart materials and devices. It focusses on the latest available techniques recently published by researchers all over the world.

Energy Harvesting allows otherwise wasted environmental energy to be converted into electric energy, such as vibrations, wind and solar energy.

It is a common experience that the limiting factor for wearable electronics, such as smartphones or wearable bands, or for wireless sensors in harsh environments, is the finite energy stored in onboard batteries. Therefore, the answer to the battery “charge or change” issue is energy harvesting because it converts the energy in the precise location where it is needed. In order to achieve this, suitable smart materials are needed, such as piezoelectrics or magnetostrictives. Moreover, energy harvesting may also be exploited for other crucial applications, such as for the powering of implantable medical/sensing devices for humans and animals.

Therefore, energy harvesting from smart materials will become increasingly important in the future. This book provides a broad perspective on this topic for researchers and readers with both physics and engineering backgrounds.



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