

## Special Issue on Energy Harvesting

### Foreword

With advances in low-power electronics, the cost and power requirements of many electronic devices have dropped significantly in recent years, thereby enabling their widespread deployment in, for example, sensor networks or embedded micro-actuated components. In such applications, the limiting factor in their lifespan is often the life of the power source. To overcome this issue, there is a growing interest in scavenging otherwise wasted energy from the ambient environment to provide a limitless source of low-level power for these devices.

Consequently, vibration-based energy harvesting has recently flourished as a major thrust area in micropower generation. This process exploits the ability of active materials and different electromechanical mechanisms to convert energy in the form of ambient mechanical vibrations to electrical energy that can subsequently be stored and/or used directly as a power source. However, as well-described in the literature, the efficient design of such generators requires a thorough understanding of the device components, the characteristics of the ambient vibration, as well as the dynamics of the overall system.

This special issue of the *Journal of Vibration and Acoustics* (JVA) presents a number of ongoing efforts in the area of

vibration-based energy harvesting, addressing a variety of topics from application to analysis, all with the goal of increasing the power that can be harvested from the environment. Topics span the range from simulation to experimental studies, and include a variety of linear and nonlinear devices at varying size scales, so this special issue provides a comprehensive glimpse of the current state of the technology's development.

Finally, this project has developed over several years and we would like to thank the former editor of JVA, Kon-Well Wang, who encouraged the initiation of this project, as well as the current editor, Noel Perkins, who saw it to its completion. In addition, we would like to thank the reviewers for their time and commitment to the peer-review process. Their comments have certainly improved the quality of these works. Finally, we would like to thank the authors for their technical contributions and for allowing their work to be included in this special issue. We hope that you find this collection enlightening.

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