

4. Rotational Energy Harvesting

Introduction: Rotational energy is widely available in various applications from human motions to rotating machines and vehicles. Rotational energy harvesting has been emerging as an important branch of energy harvesting to empower intelligent self-powered systems. This special session aims to collect state-of-the-art trends, developments, and challenges of rotational energy harvesting, inspiring their further application of self-powered sensing in the Internet of Things (IoT). Research in this special session covers fields of the structural designs, methodologies, prototyping and testing, power management circuits, and self-powered sensing applications. We welcome the original research papers regarding energy harvesting from rotational motions, such as human motions, rotational machines, civil infrastructures to disseminate new knowledge and foster collaborations.

Topics:

To gather researchers working on rotational energy harvesting, we invite submissions on a wide range of related topics, including but not limited to:

- Rotation-induced frequency up-conversion
- Linear-to-rotation motion conversion mechanisms
- Centrifugal force-based dynamics, e.g. hardening/softening effects
- Nonlinear dynamics, especially on multi-stability
- Power management circuits for rotational energy harvesting
- Self-powered sensors and actuators for rotating systems.

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