

Cycle 5 – Energy Research Grants

Portable Hydroelectricity in a Micro/Nano-World

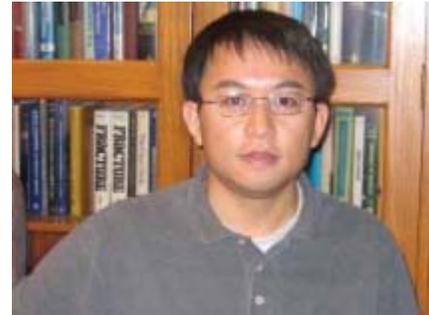
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ABSTRACT:

The goal of this project is to design and develop a portable hydroelectric device that converts microfluidic convection into electricity. This research addresses a very unique component in energy science research, which is to endow portability and true “green” to future energy devices.

Simplicity is the biggest merit of the portable system, where water is sandwiched between two glass slides, with micrometer-scale particles suspended. Even more notably, once the system is built, it produces no direct waste, and has a considerably less negative impact to our environment than fossil fuel, solar, or battery powered devices.

This research is fundamentally new and high-risk but has high potential for developing a simple and efficient platform for future portable energy systems.