Thermodynamics of small electromagnetic generators, an experimental perspective

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The fabrication of relatively small electromagnetic generators has been reported recently in the literature by a number of research groups. Their characteristic sizes are on the order of one millimeter. With proper tune up, these devices have been used to convert waste ambient vibration noise into useful electric power. We would like to discuss the possibility of reducing the size of the generator to nanometer scale allowing the observation and manipulation of individual thermodynamic degrees of freedom. We present preliminary experimental results.