PHYSICS DEPARTMENT COLLOQUIUM

"POWER WITH HEAT AND SOUND"

BY

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In order to help meet the energy challenges of this century, we are developing an acoustic approach to energy conversion. This leads to devices which are simple, efficient, environmentally safe, and with no moving parts. The basic unit is an example of a self-sustained oscillator where heat in a resonator produces sound which is converted to electricity. Such process can reach efficiencies of 30% and higher. Hence it can be used in solar energy conversion, as a satellite power source, and for waste heat management. The simplicity of the device makes it practical for miniaturization and for array configurations. Coupling of the devices in arrays presents interesting effects of synchronization, a topic which pervades nature in many areas.

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