

# Direct Transformation of Solar Energy into Mechanical Movement

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This would be a long-range development, of specialized but very powerful applications (a Linear Motor).

To illustrate the concept: Molecules are known which change shape in a reversible *cis-trans* conversion when illuminated. These as monomers can produce a film polymer which would shrink powerfully under light. The identification of similar systems and their study as to polymerization and fabrication should be encouraged. The important point is not to lose sight of this interesting possibility.

Types of application include an «amplifier» whereby a weak force to open and close a shutter can control the powerful force of this polymer. Another possibility would result in small-scale, even microscopic elements, which under controlled illumination would produce a «micro-pump».

With proper relations between the mechanical relaxation time and the frequency of photon capture, this concept applied to an asymmetric membrane would act as a «Maxwell demon» (without, of course, being able to circumvent the second law of thermodynamics!).

*This paper is supported by: A.J. Nozik (USA), C. Gómez Camacho (E), B. Qvale (DK), H. Ries (CH).*

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