Solar voltage amplifier (Technion)

code: ENE-1017

Unlike PV cells that are standalone systems designed to produce current, the technology proposed here enables the addition of solar energy harvesting to any existing electrical system by connecting it in series. This novel concept of producing a solar voltage amplifier is applicable to both small and large scale operations. It can be designed as an "inverse lamp" for small appliances for private use or for large scale power plants capable of creating vast amounts of electricity. The system conceived in the Technion for solar energy conversion consists of an absorbing medium. Its population is inverted in a broad range of frequencies, corresponding to the solar spectrum. Once illuminated, the population of the majority of the energy states may be inversed and as a result, according to the PASER concept, the medium may act as a negative resistance component. In other words, power is transferred from the solar radiation to the electrons via the medium. This can be visualized as a voltage amplifier.

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