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Inverse Photoacoustice Pyrometer[1] XIANGLING MENG, GERALD DIEBOLD, Brown University — A pyrometer is a type of non-contacting thermometer which intercepts and measures thermal radiation. When an infrared active gas is periodically exposed to a body at low temperature, the emission of radiation from the gas causes an acoustic signal to be generated. This phenomenon, known as the "inverse" photoacoustic effect, can be explained by consideration of a gas of harmonic oscillators in an enclosure where the blackbody energy density is perturbed. Here, we describe a pyrometer based on inverse photoatoustic effect.

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