

# Energy density calculations of the silicon ball-lightning-like luminous balls

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## **Abstract**

The energy density of the silicon luminous balls [Phys. Rev. Lett. 98, 048501 (2007)] is calculated by using the ball model in which a metal core is surrounded by an atmosphere of oxidizing silicon atoms. Experimental data combined with molecular orbital calculations of the oxidation enthalpy lead to a mean energy density of 3.9 MJ m<sup>-3</sup>, which is in the same range of estimative from different natural ball lightning records. The present findings add new evidence in favor of the silicon ball lightning theory.