

Laser Energy and Power Measuring Devices

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BALLISTIC THERMOPILES

One-cm-diameter aperture types

MODEL 100 — A high sensitivity, precision instrument offering direct primary calorimetric measurement of laser outputs up to 300 joules over a dynamic range of 3×10^6 .

MODEL 101 — Photodiode version of Model 100. Permits simultaneous energy measurement and observation of optical pulse waveshapes.

Two-cm-diameter aperture types

MODEL 107 — A large-aperture unit designed to meet the requirements of giant-pulse and large laser systems. Can handle energies up to 1000 joules (normal mode) and peak powers in the gigawatt range.

MODEL 108 — Photodiode version of Model 107. Permits simultaneous energy measurement and observation of optical pulse waveshapes.

DIRECT-READING ENERGY METER

MODEL 102 — A transistorized, precision microvoltmeter designed specifically for use with thermopiles having outputs from 100 to 300 microvolts per joule.

PHOTODETECTOR

MODEL 105B — An extremely fast detector containing a vacuum photodiode incorporated into a specially designed wide-band microwave structure. Permits direct observation of axial mode beating of Q-switched ruby laser or may be used to monitor low-power CW sources. Standard optical filters are available as accessories.



For complete information write: TRG, Route 110, Melville (Long Island), New York 11749, Tel. 516-531-6343.

SECTION E



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LETTERS

The xenon-135 cross section

Thank you very much for mentioning the neutron time-of-flight studies performed at Columbia University in the Research Facilities and Programs section of the August issue of *Physics Today*. We appreciate the publicity.

Unfortunately, the paragraph describing Professor Wu's measurements of the neutron cross section of the 9.3-hour xenon-135 is not correct. Professor Wu did discover the 9.3-hour xenon-135 isomer, but the sequence of events was as follows.

Before World War II, Professors Wu and Segrè of the University of California at Berkeley measured the characteristics of the radioactive xenons and discovered the isomer ^{135}Xe with a 9.3-hour half life. Since their paper describing the radioactive xenons also described work on nuclear fission, Professor Wu voluntarily withheld it from publication until 1945 [C. S. Wu and E. Segrè, *Phys. Rev.* **67**, 142 (1945)]. In 1944, the Hanford reactors stopped operating after initial start up, and Fermi and Segrè noted that the decay time of the poison was nine hours. Segrè mentioned to Fermi the work he and Professor Wu had done on the xenons at the University of California and Professor Wu was asked for a copy of her paper on the xenons by an Army officer assigned to the New York District Office of the Manhattan Project. Professor Wu did not release the paper because no official clearance was shown to her by the Army officer. However, Dr. George Murphy, the information officer of the Columbia Project, authorized the request and a copy of the paper was turned over to the representative of the New York Office of the Manhattan Project. The information in Professor Wu's paper helped determine the exact isotope responsible for poisoning the reactor.

We would also like to point out that most of the work required to make the improvements and obtain the results reported at the June meeting of the American Physical Society was done together with our colleagues, Drs. J. B. Garg, S. Wynchank, H. Ceulemans, and Mr. H. Leou.

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