

# Spontaneous fission reviews

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Two spontaneous fission review articles have been published. Each presents the known data for spontaneous fission properties. The systematics are discussed and compared to theoretical models.

I. Spontaneous Fission<sup>1</sup> by Darleane Hoffman, Todd Hamilton and Michael Lane. Since the comprehensive Hoffman and Somerville review<sup>2</sup> of experimentally determined spontaneous fission properties published in 1989 (literature to mid-1986 considered), major conferences have been held at Berlin and Washington, D.C. in 1989 to commemorate the 50th anniversary of the discovery of nuclear fission. Many review papers and much new information concerning spontaneous fission were presented. The intent of the present review is to update the information of Hoffman and Somerville on spontaneous fission half-lives, fission fragment kinetic energy, mass and charge distributions, neutron and photon emission at scission or from the excited fragments and new theoretical developments. New experimental results on SF phenomena are reviewed. The relevant published literature to mid-1992 has been considered.

II. Spontaneous Fission<sup>3</sup> by Darleane Hoffman and Michael Lane. Recent experimental results for spontaneous fission half-lives, total kinetic energies, fragment mass and kinetic-energy distributions, and other properties of the fragments are reviewed and compared with recent theoretical models. The experimental data lend support to the existence of the predicted deformed shells near  $Z=108$  and  $N=162$ . Prospects for extending detailed studies of spontaneous fission properties to elements beyond hahnium (element 105) are discussed. The relevant published literature to mid-1995 has been considered. This article updates the

information from the last published review by Hoffman, Hamilton, and Lane<sup>1</sup> (see above).

## *Footnotes and References*

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1. D.C. Hoffman et al.: Spontaneous Fission, in *Nuclear Decay Modes*, D.N. Poenaru, Ed., IOP Publishing, Bristol UK, chap. 10 (1996).
2. D.C. Hoffman and L.P. Somerville: Spontaneous Fission, in *Charged Particle Emission from Nuclei, Vol. III*, D.N. Poenaru and M.S. Ivascu, Eds., CRC Press Inc., Boca Raton, Florida, chap. 1 (1989).
3. D.C. Hoffman and M.R. Lane, *Radiochim. Acta* **70/71**, 135 (1995).