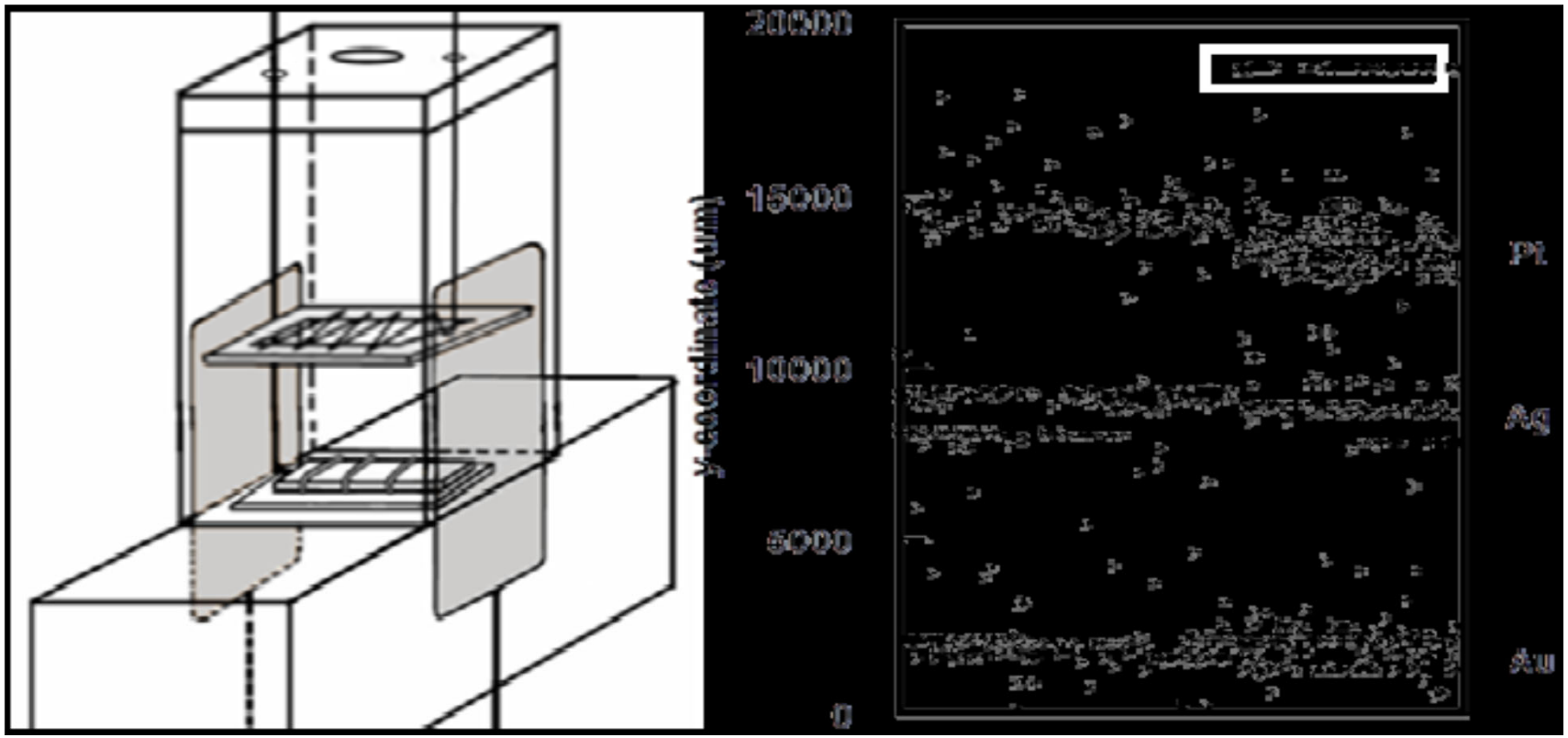
Some Recent LENR Experiments Demonstrating Nuclear Reactions

Pat McDaniel
Research Professor
Nuclear Engineering Department
University of New mexico

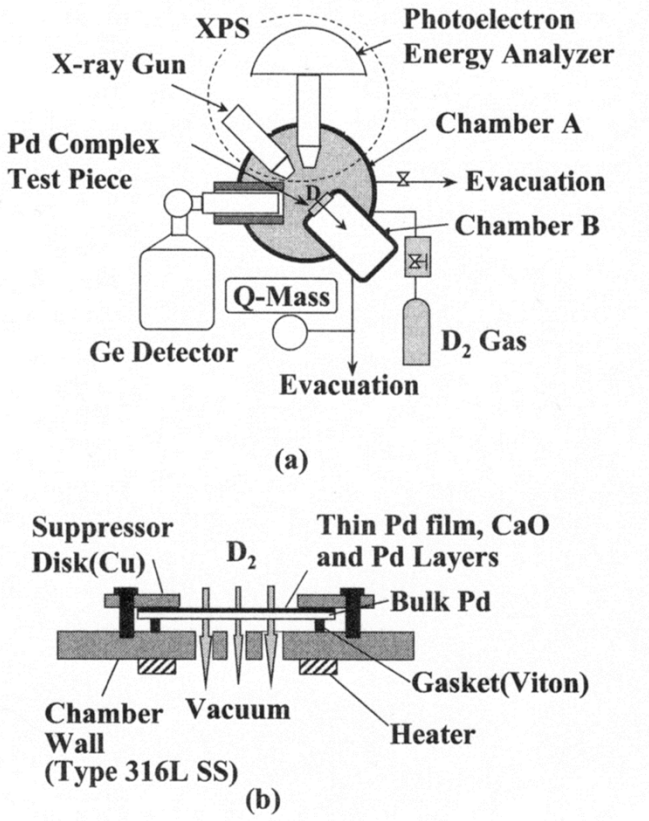
Experiments

- Pam Mossier-Boss et al. – Particle tracks in CR-39
- Yasuhiro Iwamura et Al.– Nuclear Transmutation in Flowing Deuterium
- Bruce Steinmetz et al. – D-D Reactions in Deuterated Metals

Co-Deposition of Pd and D on 3 Electrodes



Nuclear Transformations with Drifting Deuterium



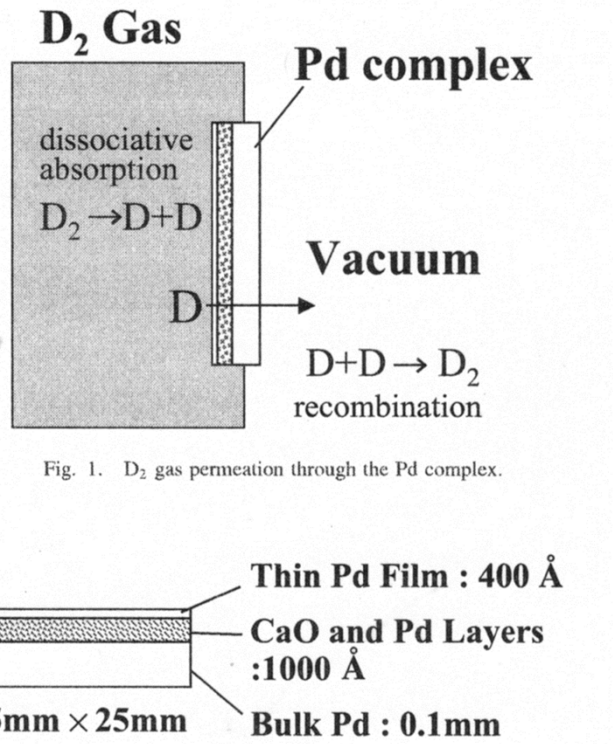
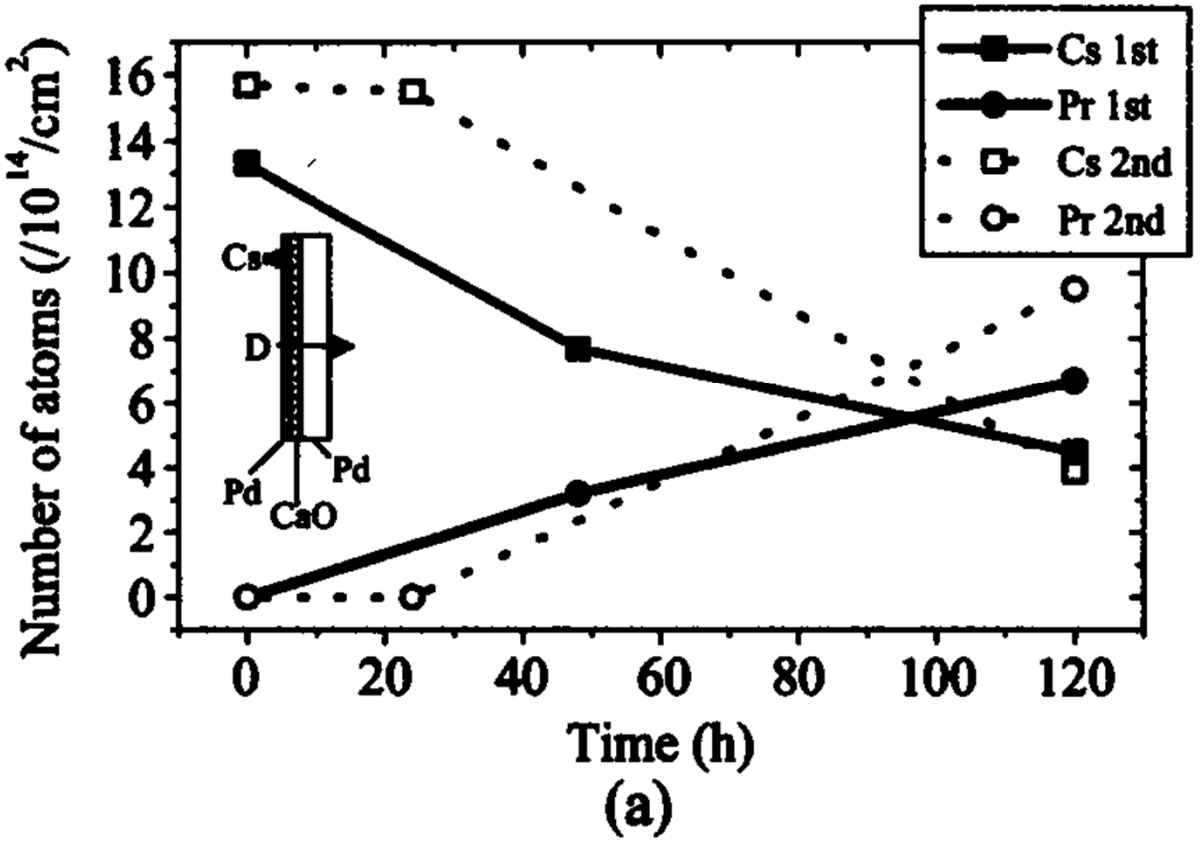
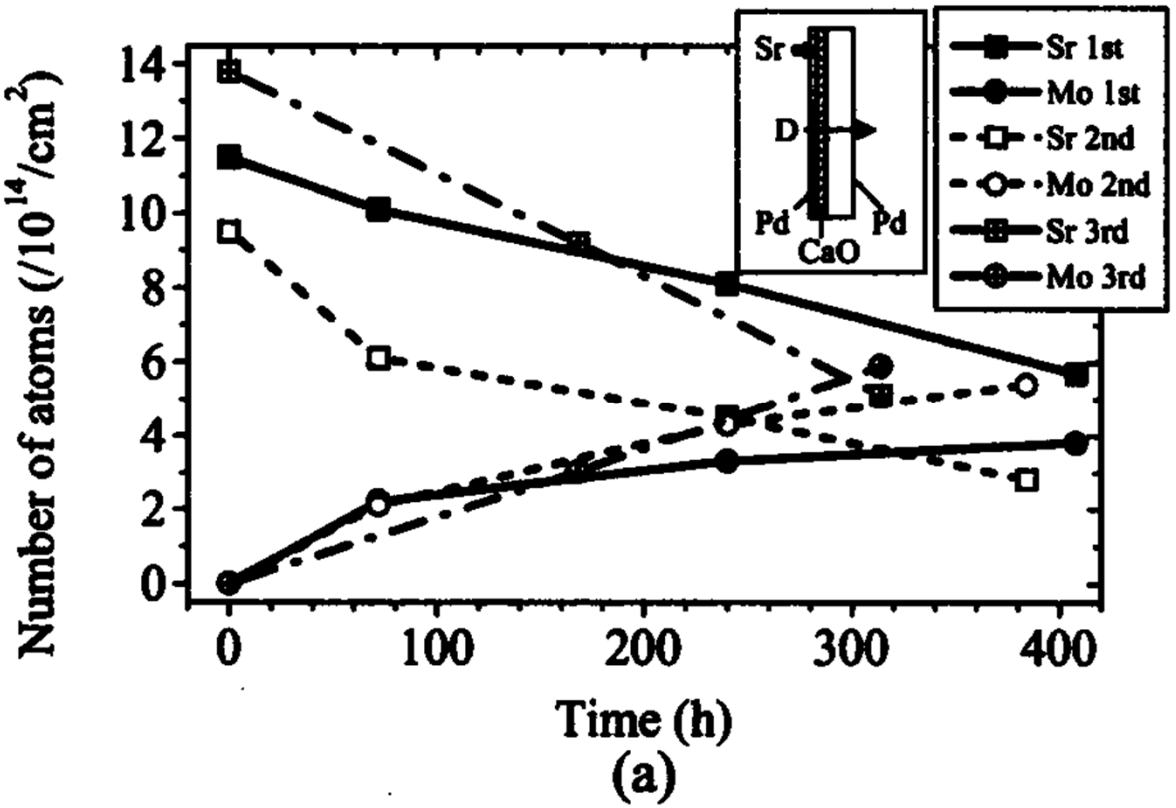


Fig. 1. D_2 gas permeation through the Pd complex.

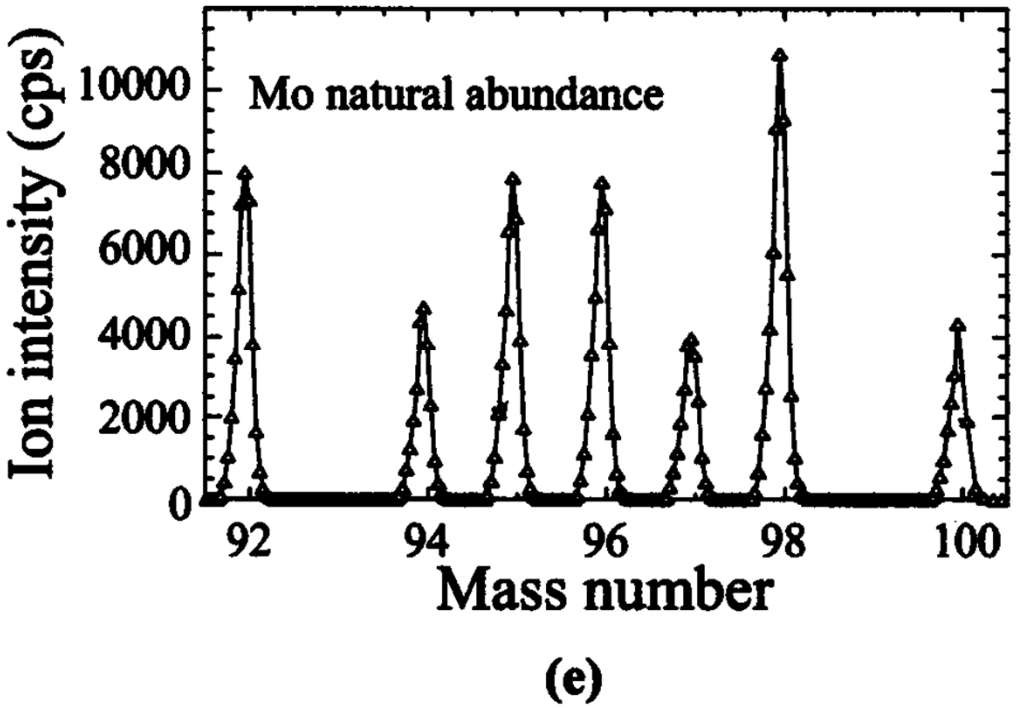
Transmuting Cesium to Praesodynium

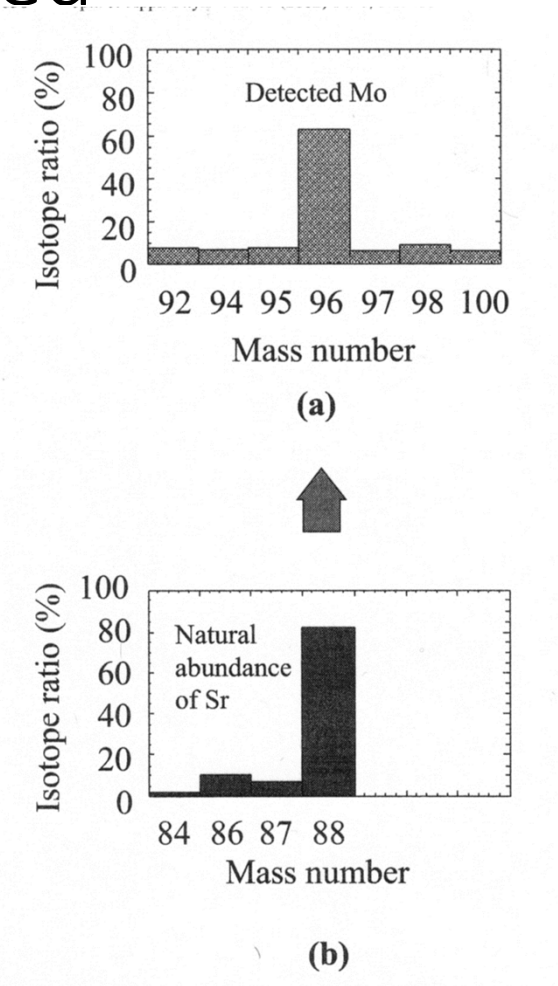


Transmuting Strontium to Molybdenum

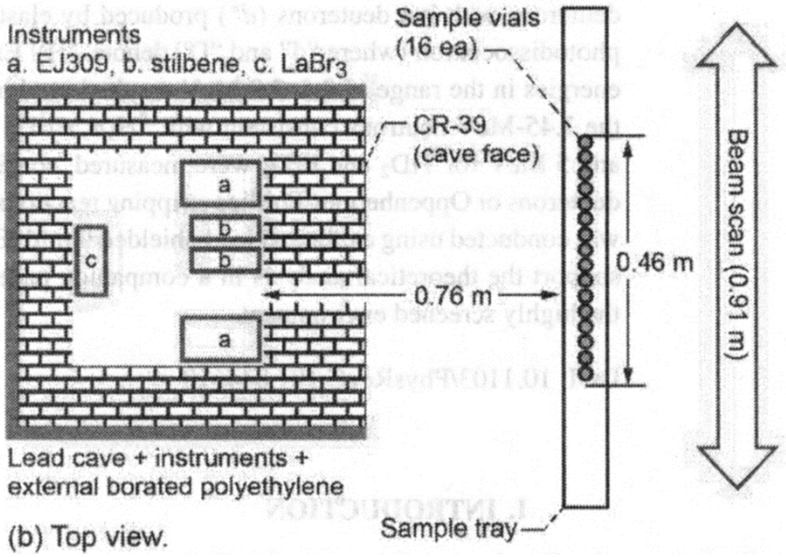


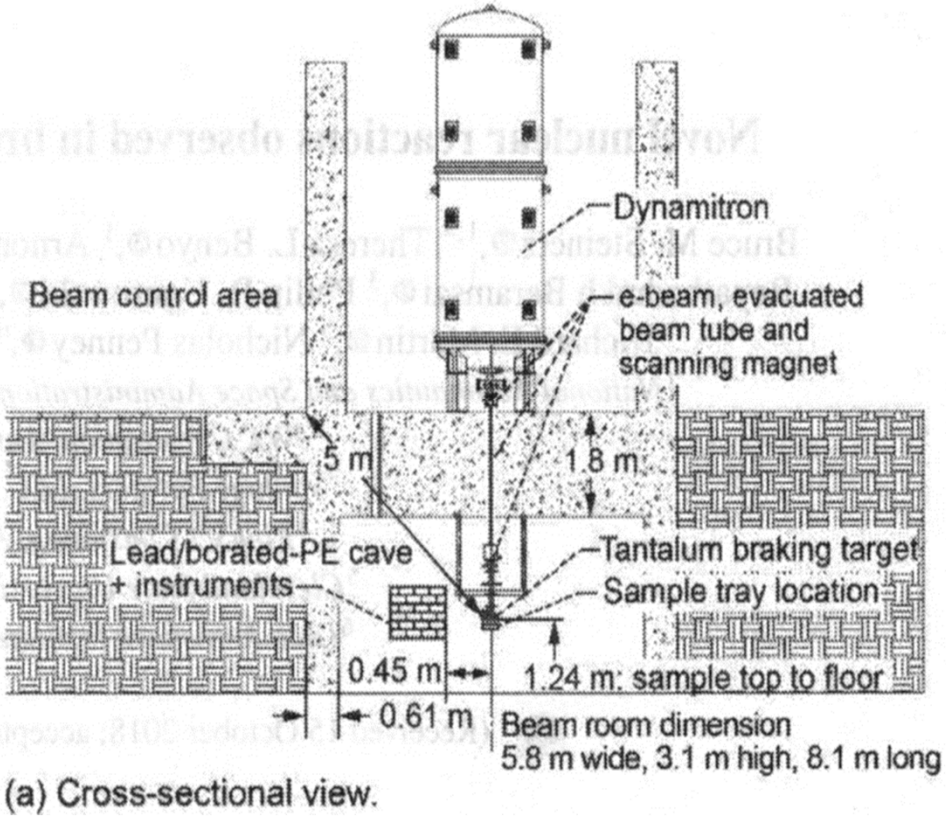
Molybdenum Isotopes Produced



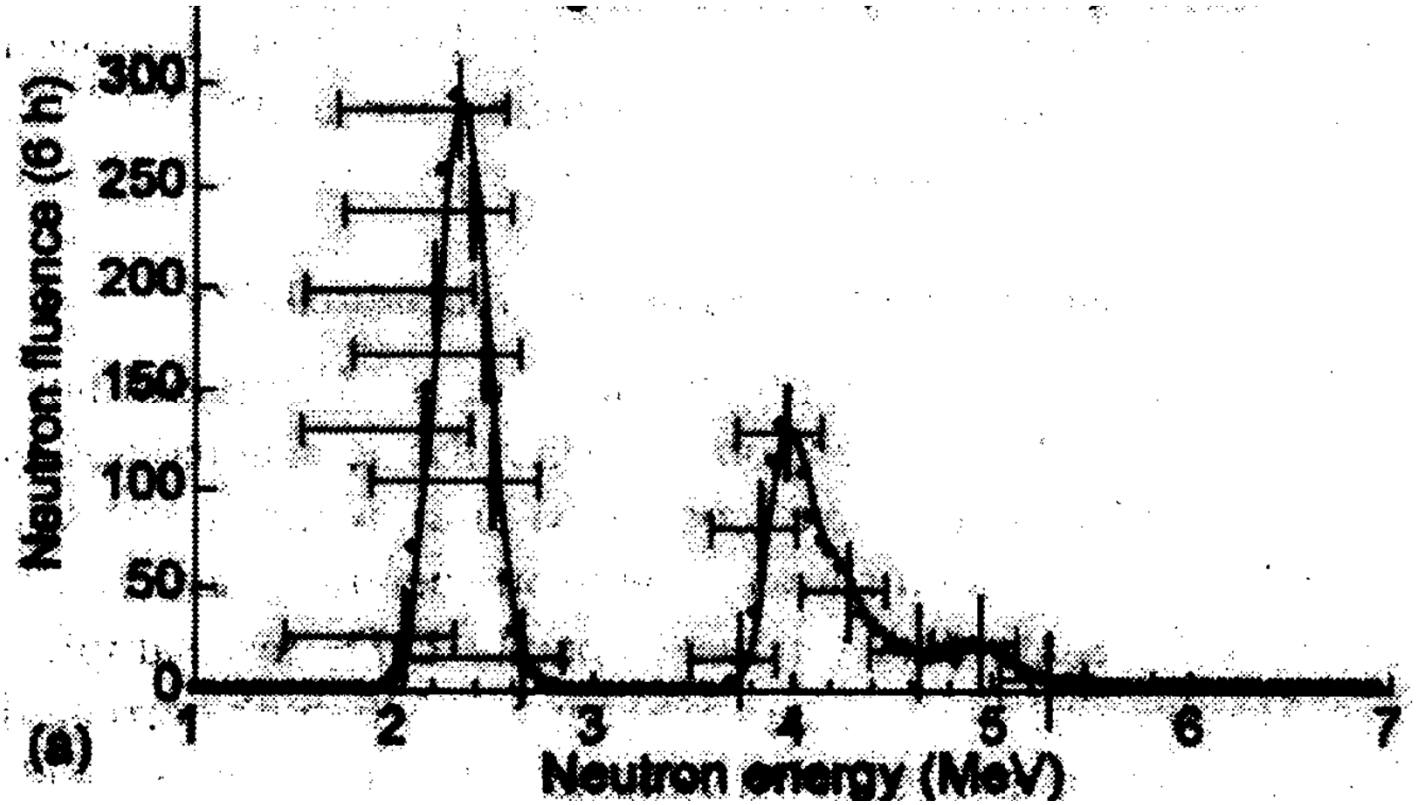


The Hard Way to Produce D-D Reactions





Typical Neutron Spectra



Measured Neutron Production Process

- 2.9 MeV electrons produce 0-2.9 MeV Gamma Rays
- Gamma rays above 2.226 MeV can create (γ,n) reactions on deuterium
- Resulting neutrons have energy of 0.0-0.374 MeV
- Neutrons scatter deuterium atoms producing 0 – 0.332 MeV deuterons
- 0-0.332 Mev deuterons react with another deuteron for D(D,n)He^3
- Resulting neutron has ~2.45 MeV energy
- No quantitative production rate of neutrons was estimated
- 0.332 MeV is near the peak of the hot fusion D(D,n)He^3 reaction
- 4.0 MeV neutron peak was hypothesized from other possible reactions

Cockcroft Walton Experiment

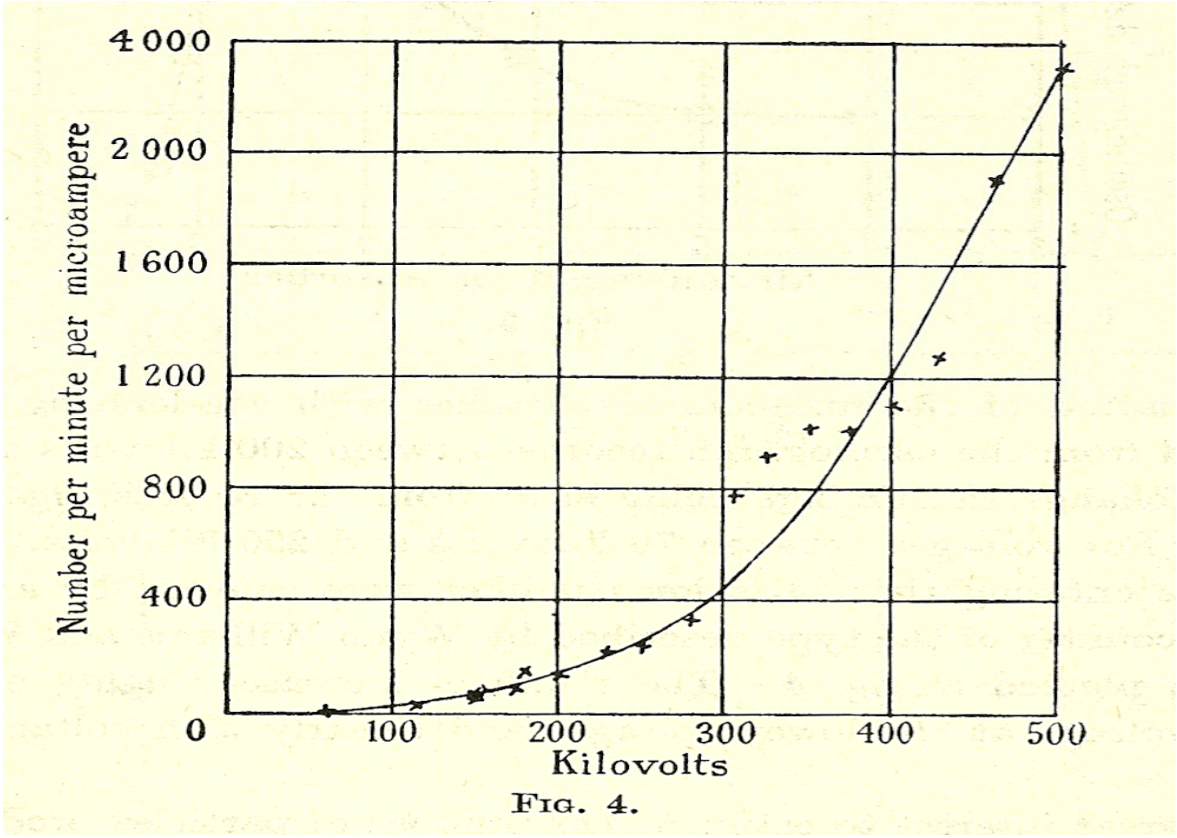


Fig. 4.