

This paper can be downloaded at the web site of the Japanese Journal of Applied Physics, <http://www.ipap.jp/jjap/index.htm>. Until January 2004, anyone could register and download papers there at no cost. The journal is now charging for reprints. We hope to make reprints of this and other cold fusion related papers available here. Here are the title, abstract and keywords for this paper:

**Jpn. J. Appl. Phys. Vol. 32 (1993) 3964-3967**  
**Part 1, No. 9A, 15 September 1993**  
**DOI : 10.1143/JJAP.32.3964**

## **Application of a Ge Detector to Search for Fast Neutrons from DD Fusion in Deuterized Pd**

Eunjoo Choi, Hiroyasu Ejiri and Hideaki Ohsumi

*Department of Physics, Osaka University, Toyonaka, Osaka 560*

(Received March 29, 1993; accepted for publication July 17, 1993)

### **Abstract:**

A low-background high-resolution Ge detector surrounded by neutron scatterers was applied to investigate fast neutrons from the electrochemically loaded Pd-D system. The neutron flux was obtained by measuring the yields of the  $\gamma$ -rays following inelastic scattering of the fast neutrons from nuclei in the scatterers. The detector was shown to be very sensitive in the search for rare neutron events such as d-d fusion at room temperature. The observed spectrum shows no statistically significant excess of the  $\gamma$ -rays above the background. The upper limit on the fusion rate was obtained as  $\lambda_f < 1.6 \cdot 10^{-24} (\text{ddn}) \text{ fusions}/(\text{dd}) \text{ pair/s}$ .

### **Keywords:**

cold nuclear fusion, low-background neutron detector