

# **STUDY OF THE PROPERTIES OF POLYETHYLENE FOAMS CROSSLINKED BY ELECTRON BEAM**

**D.B. Dias, L.G. Andrade e Silva \***

**Instituto de Pesquisas Energéticas e Nucleares - IPEN-CNEN/SP  
Av. Prof. Lineu Prestes, 2242 Cidade Universitária  
05508-000 São Paulo – SP, Brasil**

**\*[lgasilva@ipen.br](mailto:lgasilva@ipen.br)**

## **ABSTRACT**

The methods of production of polyethylene crosslinked foams are classified in two types, according to the crosslinking type. One of them is the chemical crosslinking, that uses the peroxide as crosslinking agent. The other type is the crosslinking by irradiation using electron beams. The foam of polyethylene obtained by crosslinking process by irradiation performs excellent appearance in the surface, which is formed basically by closed cells. The properties of the foams depend a lot of the density and its cellular structure, in other words, the amount of open cells, the distribution of the size of the cells and the format of the same ones. The aim of this work is to study the effect of different radiation doses on the polyethylene of low density that after irradiation it is thermally expanded for foam obtaining. To certify about the effect of the radiation it was studied the mechanical and thermal properties of the foams.