

la biblioteca ENDF/B-VI. El espectro resultante del sistema multiesfera se obtuvo aplicando el código de deconvolución LOUHI82. Se presentan los resultados de la calibración del sistema con una fuente de AmBe.

**P. 368 MORPHOLOGICAL DIFFERENTIATION BETWEEN BACILLI AND COCCI CLUSTERS THROUGH THE TECHNIQUE OF NEUTRON RADIOGRAPHY**

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Preliminary studies enabled the technique of neutron radiography as a fast method to identify bacteria. Washed bacterial suspensions in saline were incubated with boron, layered on strips of a solid track detector CR-39 (SSTND) and then irradiated at the J-9 channel of the Argonauta Reactor (IEN/CNEN) under a neutron flux of  $2.5 \times 10^5$  n.cm<sup>-2</sup>.s<sup>-1</sup>. The strips were developed to latent tracks become visible under a common light microscope with 5.3 N NaOH at selected temperature and time. Suitable acquisition software was employed to capture images. Images were different for bacilli and cocci, revealing their specific bacterial morphologies. The results validate the technique as an appropriate one to rapidly identify bacteria.

**P. 397 PROPOSAL OF A NON-ENERGETICAL METHOD FOR RADIONUCLIDE DETERMINATION**

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Based on the discrimination that absorbing materials exert on the radiation originated in different radioactive substances and motivated by the paradigm of a system (no mass spectrometer-like) able to detect and quantify radioactive components in a single source, we discuss here a simple experience that realizes such task.

**P.419 STANDARDIZATION OF <sup>241</sup>Am BY MEANS OF COINCIDENCE SYSTEM USING 4 $\pi$  PLASTIC SCINTILLATOR DETECTOR**

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A  $4\pi$  ( $\alpha,\beta$ )- $\gamma$  coincidence system using a plastic scintillator detector in  $4\pi$  geometry has been developed and applied for the standardization of <sup>241</sup>Am. The scintillator shape and dimensions have been optimized for maximum charge particle detection efficiency, while keeping background low and a nearly constant gamma ray efficiency for different points at the radioactive source. The gamma ray

events were measured with 3" x 3" NaI(Tl) scintillation counter. The electronic system for processing pulses consisted of logic gates and delay modules feeding a Time to Amplitude Converter with output to a Multichannel Analyser. The alpha detection efficiency measured with  $^{241}\text{Am}$  resulted around 95% and the beta detection efficiency measured with  $^{60}\text{Co}$  was around 60%. Activity measurements of  $^{241}\text{Am}$  were compared with a conventional system employing a  $4\pi$  proportional counter and showed good agreement.

**P. 441      REPRODUTIBILITY OF SATURATION ACTIVITY MEASURES AT  
MANGANESE BATH ( $\text{MnSO}_4$ )**

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At IRD/LNMRI/LN – Laboratório de Nêutrons is used to calibrate isotopic neutron sources with the Primary Standard System Manganese Sulfate Bath. Compared with other systems that apply the same technique, this one shows better accuracy and uncertainty. Besides this system has many parameters, like: volume, solution density, electronic system dead time, counting rate, etc. those may be changed, affecting the value of  $\text{MnSO}_4$  solution saturation activity. This value is used to calculate the neutron source emission rate. In this work, the results of saturation activity during one year of measurements are showed.