

First experimental results from a $\text{LaBr}_3/\text{LaCl}_3$ phoswich crystal

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Phoswich $\text{LaBr}_3/\text{LaCl}_3$

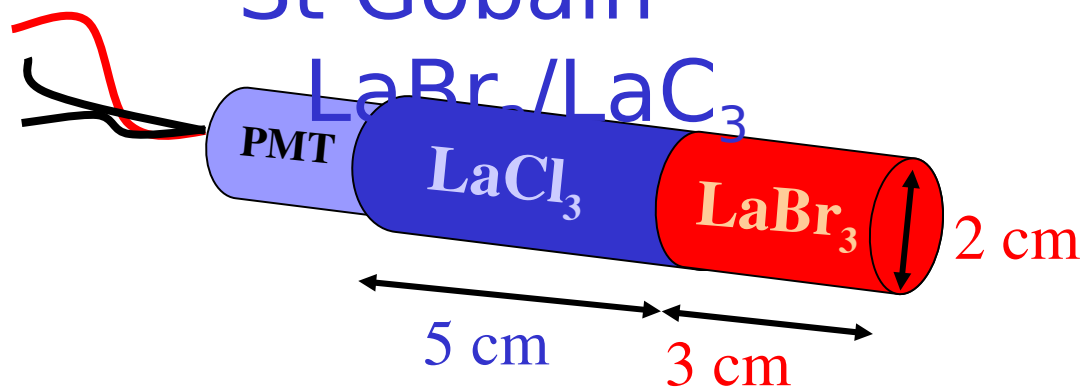


Hamamatsu
R5380

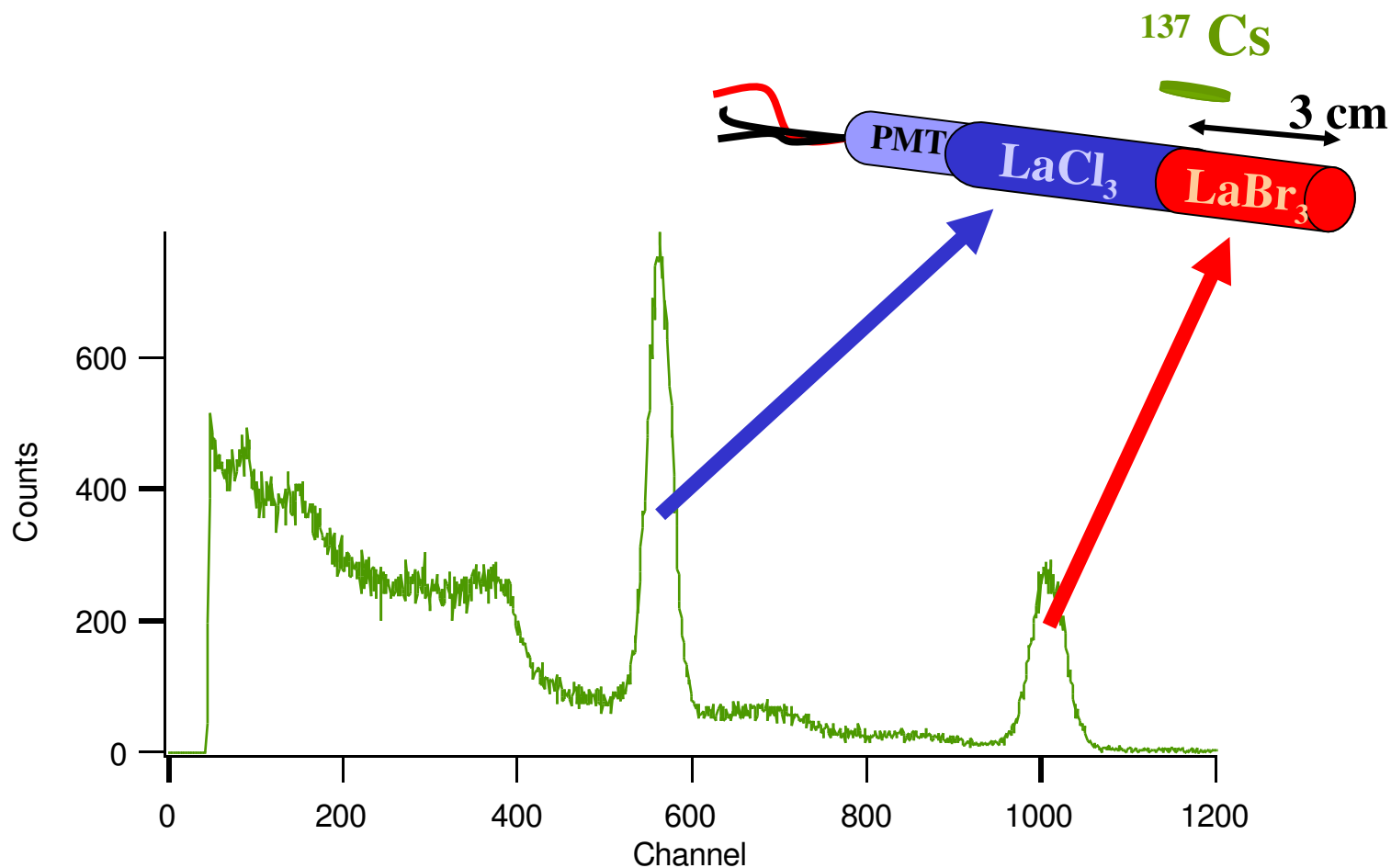
Dimensiones



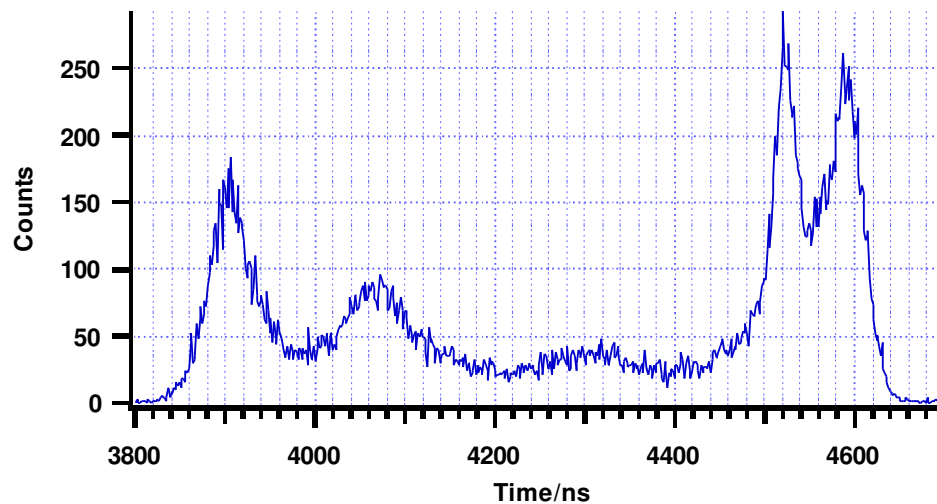
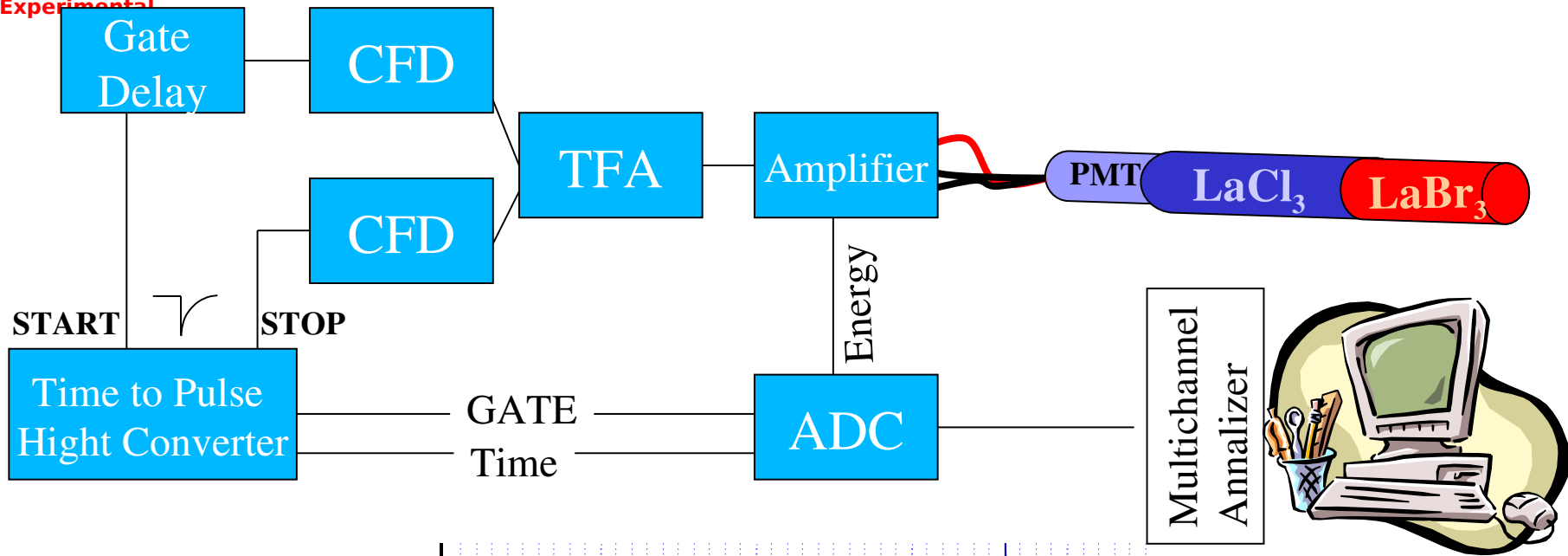
St Gobain
 $\text{LaBr}_3/\text{LaCl}_3$



Energy spectrum



Time spectrum



Temporal spectrum: gates

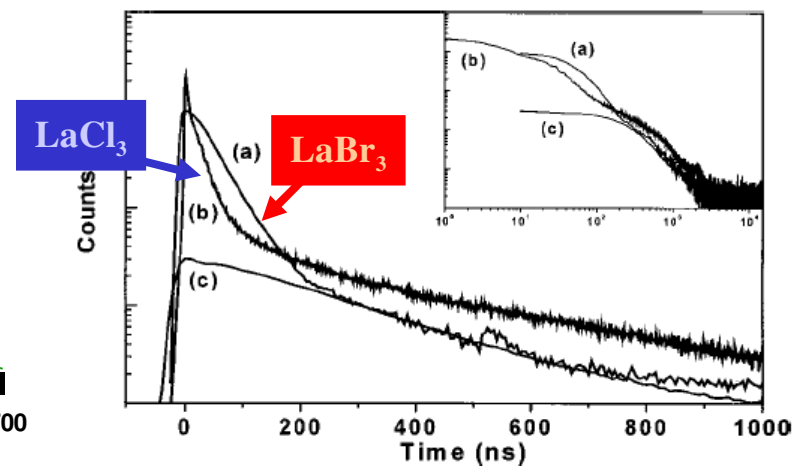
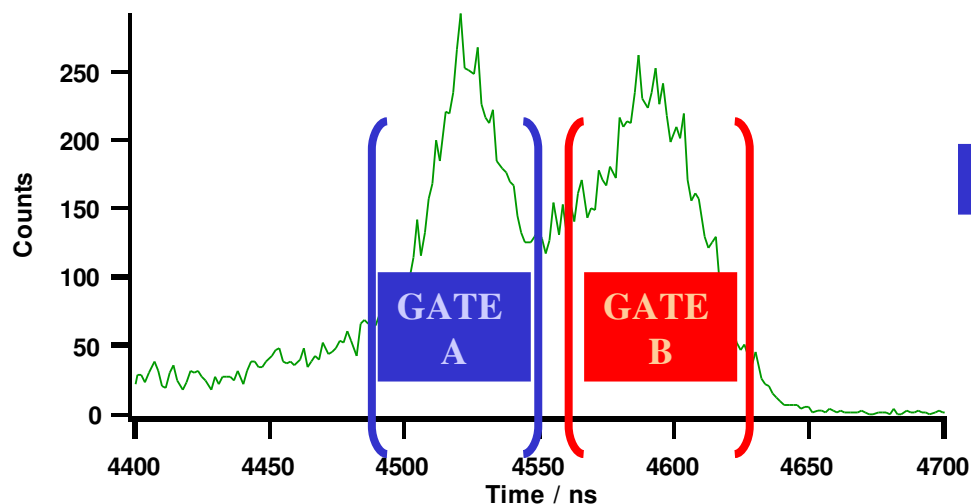
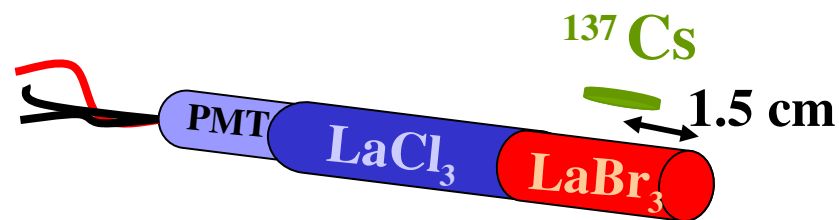
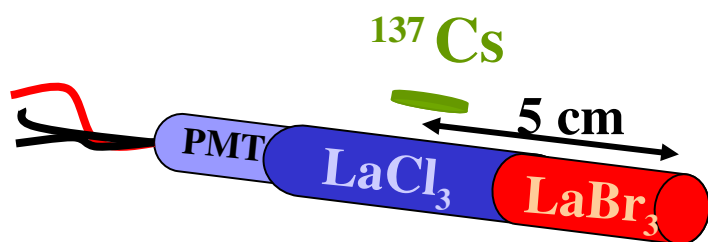
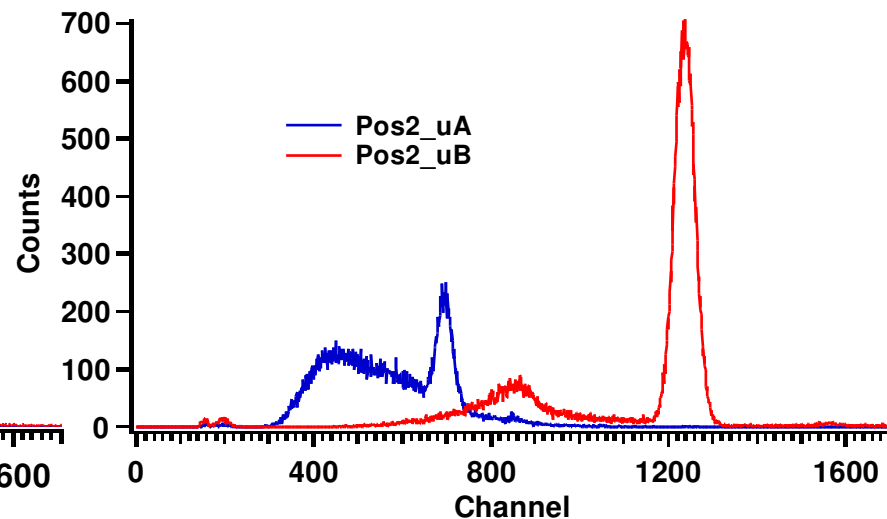
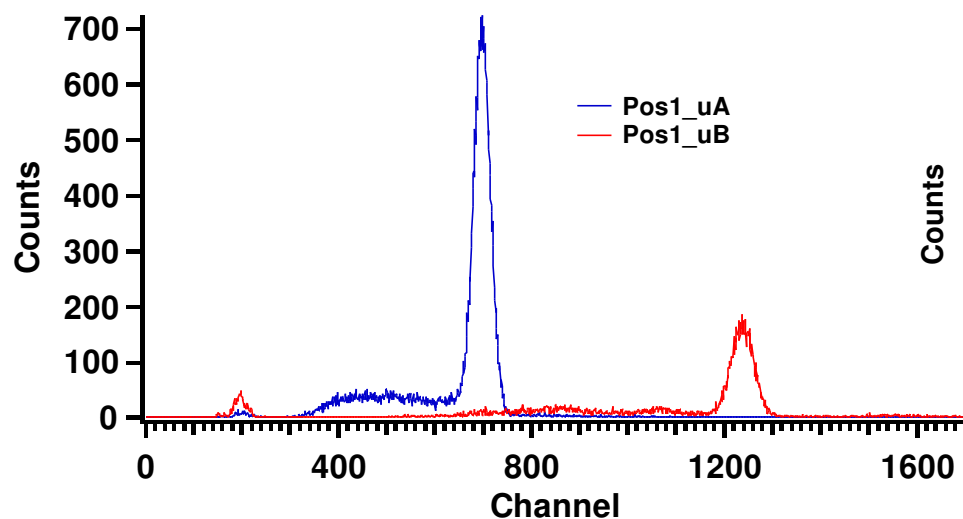


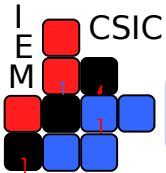
FIG. 2. Decay curves of (a) $\text{LaBr}_3:0.5\% \text{Ce}^{3+}$, (b) $\text{LaCl}_3:10\% \text{Ce}^{3+}$, and (c) NaI:Tl . The inset shows the decay curves on a double logarithmic scale.

- ✓ Time peaks separated by $\sim 75\text{ns}$
- ✓ First tests, time spectrum can be optimized

- ✓ Appl. Phys. Lett. 79, 1573 (2001)
 - LaCl_3 $\tau=28\text{ns}$
 - LaBr_3 $\tau=16\text{ns}$

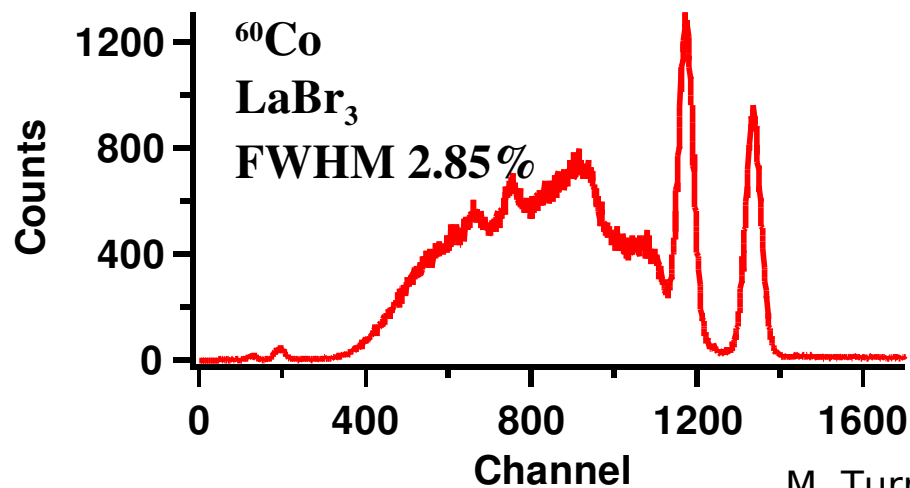
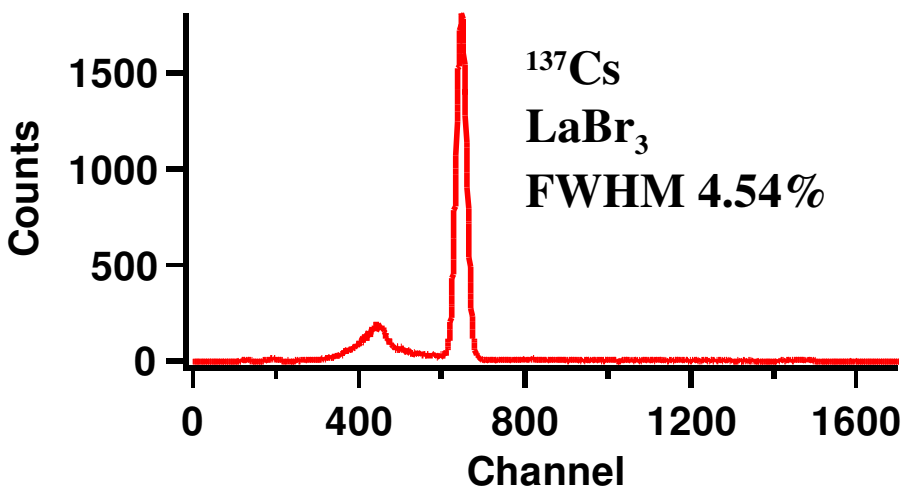
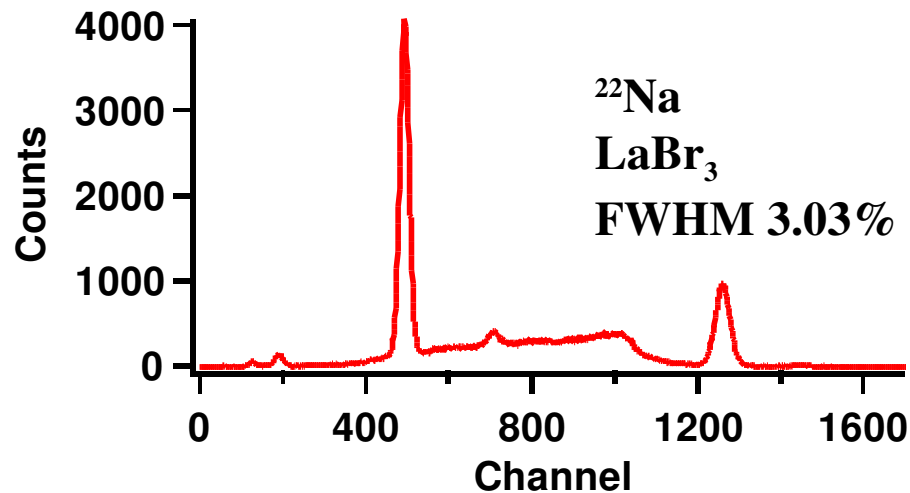
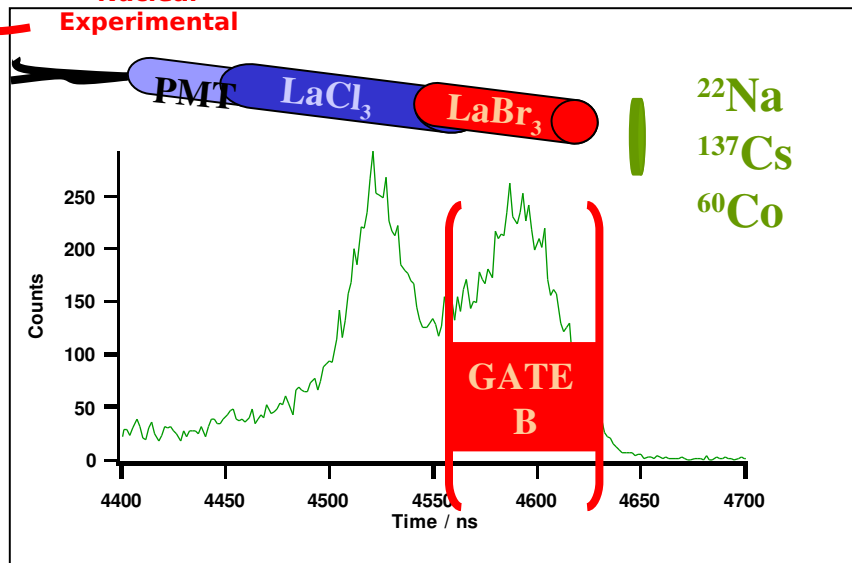
Energy spectrum





Grupo de Física
Nuclear
Experimental

Resolution



Conclusions

- ✓ First experiments show the possibility to discriminate the signals from both crystal components
- ✓ Measurements can be optimized:
 - PMT/Phoswich contact
 - Time spectrum: delays, gates