

Amilcare Barca 27 Marzo 2025





- Can test only 0 and 8° degree angles
 - Cannot measure single interface
 - More qualitative than quantitative
- How to separate reflection/diffraction?



Decision Time

- Test of CsI crystal with Vikuiti on a face
 Test of CsI crystal with AI on a face
- Test of GAGG crystal with Vikuiti on a face
 - Test of GAGG crystal with Al on a face

Do we have enough CsI crystal?

Priority

- Test of CsI crystal with Vikuiti on a face for the four different roughness we have
- Repeat test in our laboratory for the other set of crystals with different roughness

Doing like that, we will have no more SiPM until June-July

In June/July we need to place the <u>final order for the crystals</u>, which is a very busy period for all of us and the order is very complicated because we need to ask to an Italian distributor from two different companies.





Almost monochromatic beam:

- Access should be very simple
- Fine scan over wide energy range
 - Can we measure efficiency?
 - Limited above 10-20 keV
 - Laboratory in Ferrara





Using RBS we can measure average Vikuiti composition (and thickness?)



Zn (99.99%) Target: - K lines at 8.64, 9.57 keV - L line at 1.01 keV

- Challenges:
- Study mechanics for sample holder
 - Shield the system from light
- In air:
- Simple, fast and reliable
- > Impact on very soft X-rays

- In vacuum:
- > Need to rearrange positions of aux and sample
 - Maybe there are no target of the correct size

Beam request up to July must be done before April 16th! It is a good opportunity for a feasibility study

Need to define which energies we want to test: 1, 9 keV is enough? Do we want to add 5 keV? Do we want to ask for an energy around 30 keV to crosscheck with well known source peaks?

Varie ed eventuali



Decide if and what we want to buy (AGE or CAEN)





.....

Radioactive sources

Sorgenti di particelle gamma

ISOTOPO	SIGLA	DATA DI ARRIVO	ATTIVITA' INIZIALE	
1. ¹⁵² Eu 5%?	NV737	1 Gennaio 2006	370KBq	
2. ^{137}Cs 3. $^{133}Ba 5\%$?	NV736 NV735	1 Gennaio 2006 1 Gennaio 2006	421KBq 440KBq	
4. ⁶⁰ Co 5. ²²⁶ Pa	NV734	1 Gennaio 2006 1 Sottembre 2005	397KBq	
6. ⁶⁰ Co	01457	1 Agosto 2006	407KBq	
7. ²² Na 8. ²² Na	OI456 RE416	1 Agosto 2006 1 Luglio 2008	388KBq 404KBq	
9. ⁶⁰ Co	RP234	1Gennaio 2009	415KBq	
10. Na 11. ⁵⁷ Co	AD6152	1 Genhalo 2009 1 Aprile 2014	382KBq	
12. ⁵⁷ Co 13. ²² Na	AD6151 AQ-7365	1 Aprile 2014 25 Maggio 2020	374KBq 384KBa	
14. ⁸⁸ Y	AO-7366	25 Maggio 2020	45.3KBq	
15. 5/00	BB1101	1 Settembre 2020	392КВq	

Check uncertainty on the activity!

Sorgenti di particelle X

I	S	0	T	0	P	0

DATA DI ARRIVO

ATTIVITA' INIZIALE

SIGLA

Rimodulazione!