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12. 12.		FOR DEVELOPERS
12.	00 h – 12.30 h	Discussion on the future of the consortium: proposal for a Network Activity. Actions to be
12.	12.001	taken. Chairman: H. Graafsma
12	.30 h – 12.45 h	Presentation on JRA-19. New sensors for Solid State Area Detectors, I. High Z (R. Farrow)
12.1	.45 h – 13.00 h	Presentation on JRA-19. New sensors for Solid State Area Detector, II. CZT projects (P. Seller)
13.	.00 h – 15.00 h	LUNCH
15.	.00 h – 15.15 h	Presentation on JRA-19. New sensors for Solid State Area Detectors, III. Edgeless sensors (J. Morse)
15.	.15 h – 15.30 h	Presentation on JRA-19. New sensors for Solid State Area Detectors, IV. GaAs (C. Ponchut)
15.	.30 h – 15.45 h	Presentation on JRA-19. New sensors for Solid State Area Detectors, V. High Z and 3D (J.C. Clemens)
15.	.45 h – 16.00 h	Presentation on JRA-19. New sensors for Solid State Area Detectors, VI. Se (R. H. Menk)
16.	.00 h – 17.00 h	Discussion on JRA-19. Chairman: H. Graafsma
17.	.00 h – 17.30 h	COFFEE BREAK
17.	.00 h – 19.30 h	Discussion on JRA-19. Chairman: H. Graafsma
20.	.30 h – 22.30 h	DINNER IN CASTELLDEFELS
28 th Sep	otember	
09.	.00 h – 09.15 h	Presentation on JRA-8. High Resolution Scintillators for detection of high energy X rays (T. Martin)
09.	.15 h – 11.00 h	Discussion on JRA-08. Chairman: P. Fajardo
11.	.00 h – 11.30 h	COFFEE BREAK
11.	.30 h – 11.45 h	Presentation on JRA-5. Development of APD based 2D X-Ray detectors with nanosecond time resolution (P. Fajardo)
11.	.45 h – 12.30 h	Discussion on JRA-5. Chairman: P Fajardo
12.	.30 h – 13.00 h	If it is necessary, More Discussion on the future proposal for a Network Activity (old JRA-18). Actions to be taken. Or extra time for discussions
13.	.00 h – 15.00 h	LUNCH
15.	.00 h – 17.00 h	Extra time for discussions, if it is necessary.











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2.30 h DINNER IN CA	ASTELLDEFELS
 Presentation o 	on JRA-8. High Resolution Scintillators for detection of high energy X rays (T. Martin)
1.00 h Discussion on	n JRA-08. Chairman: P. Fajardo
1.30 h COFFEE BRE	EAK
1.45 h Presentation o time resolution	on JRA-5. Development of APD based 2D X-Ray detectors with nanosecond n (P. Faiardo)
2.30 h Discussion on	n JRA-5. Chairman: P Fajardo
3.00 h If it is necessar Or extra time for	ary, More Discussion on the future proposal for a Network Activity (old JRA-18). Actions to be taken. for discussions
5.00 h LUNCH	
7.00 h Extra time for o	discussions, if it is necessary.
2 1 1 2 3 5 7	15 h Presentation .00 h Discussion or .30 h COFFEE BR .45 h Presentation :100 h Discussion or :00 h Discussion or :00 h Discussion or :00 h LUNCH :00 h Extra time for



(Technical) priorities of ALBA MX beamline regarding the detector

- 1. Large area (>300x300 mm)
- 2. Low background (1 count/pixel??)
- 3. Large dynamic range (18 or 20 bits)
- 4. Pixel size not larger than 200 um (100 um better)
- 5. Fast read-out (1 ms, i.e. $t_{exposure}/t_{read} > 1000$)
- 6. High quantum efficiency 6-25 keV (close to 100%)
- 7. (Able to detect direct mono beam???)
- 8. No dead areas

Our current dilemma: CCD or pixel detector? Is there any other option?

Any development in detectors for powder diffraction must aim at "Rietveld refinement quality patterns" where "Rietveld refinement quality patterns" mean that the powder diffraction pattern profile can be reliably fitted to a structural model.

If the powder diffraction data quality is such that Rietveld refinement is impossible then it is not worth the effort because there are already solutions that are able to obtain/track the peak positions, that is the lattice parameters.

What we need today.

Today there is a need in powder diffraction on fast detectors such that is possible to get a "ready to perform Rietveld refinement" in the second range (and of course, everything that goes lower than 1s will be even better because it will open new fields) with good angular resolution.

Improvements on detectors (wish list)

-"Fast readout Image plate with energy discrimination", that is, a detector with no dead areas, with good dynamic range, good resolution and with energy discrimination (suppress fluorescence and inelastic events)

-"CCD with high dynamic range", that is, fast readout with good dynamic range.

- Energy sensitive range > 20 keV will benefit material science.
- Curved areas fit better to the powder diffraction technique.

Non Crystalline Diffraction, NCD, beam line

Detector Requirements - Summary

<i>c</i>	$(50 - 100)^2 \text{ um}^2$
Opsf	(30-100) µm
Active area:	(15 - 30) ² cm ²
Dynamic range	> 10 ⁵
Local count rate	> 10 ⁵ photons/sec/mm ²
Global count rate	> 10 ⁸ photons/sec
Detection	Single Photon Counting
Full 2D read-out/refresh time	< 0.1 ms
Parallax	None
$^{1)}$ X-ray beam size on detector is spread function σ_{psf}	negligible compared to detector point
²⁾ High temporal resolution requas conversion of chemical energy	ired to study fast dynamic processes such yy into force and motion in muscle tissue.