



AIDA 2020

Advanced European Infrastructures
for Detectors at Accelerators

WP7 (NA6): Advanced hybrid pixel detectors

4th Annual Meeting

Anna Macchiolo (University of Zurich), Iván Vila (CSIC-IFCA)



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Milestones	Responsible Group	Month due
MS29 Validation and release of TCAD simulation ✓	INFN	M16 (AUG 2016)
MS49 Workshop on 3D and planar sensors ✓	FBK	M24 (APR 2017)
MS51 Workshop on LGAD characterization ✓	INFN	M24 (APR 2017)
MS50 Technological choice on LGAD sensor thickness ✓	CSIC	M24 (APR 2017)
MS81 Test beam campaign for 3D and planar sensors ✓	MPG-MPP	M36 (APR 2018)
MS87 Common MPW runs completion ✓	CSIC	M42 (DEC 2018)
MS97 Validation TCAD radiation damage model with data comparison	INFN	M46 SEP 2019)

M42: Completed but the active edge planar production at FBK (lack of SOI wafers). Just started after the needed SOI wafers have been procured .



	Deliverable	Responsible Group	Month due
Device simulation	D7.1 Simulation of 3D pixel sensor cells ✓	INFN	M18 (OCT 2016)
	D7.2 Simulation active edge ✓	CERN	M18 (OCT 2016)
	D7.3 LGAD simulation ✓	INFN	M18 (OCT 2016)
	D7.4 TCAD model radiation damage	INFN	M46 SEP 019)
	D7.5 Wafer Layout MPW run WP7 ✓	CSIC	M30 (NOV 2017)
Device characterization	D7.6 Initial pixel characterization ✓	UNIMAN	M24 (APRIL 2017)
	D7.7 Final pixel characterization	MPG-MPP	M46 SEP 019)
	D7.8 LGAD characterization	INFN	M46 SEP 019)

- Plenary speaker: Anna Macchiolo
- Open call for contributions (recent update of activities end of February)
- Discussion on future activities on hybrid sensors ?



- One recommendation: “Continued excellent coordination with the experiments is strongly encouraged.”
 - All recent 3D and LGAD productions are a major part of the sensor RD activities of the pixel and timing detector at ATLAS and CMS.
- Main Y5 activities:
 - Complete planar AE production runs and characterizations.
 - Continue and complete the radiation tolerance assessment of 3D and LGAD productions (Sept 2019)
 - Update the radiation damage models using the new results (Sep 2019)



Contribution list Timetable

Wed 03/04

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14:00	Introduction <i>Seminar Room 10, St Anne's College</i>	<i>Anna Macchiolo et al.</i> 14:30 - 14:40
	Update on CSIC characterization activities of AIDA-2020 LGAD and 3D sensors <i>Seminar Room 10, St Anne's College</i>	<i>Ivan Vila Alvarez</i> 14:40 - 15:00
15:00	Thermal cycling tests on Indium bumped daisy chain modules <i>Seminar Room 10, St Anne's College</i>	<i>Simone Monzani</i> 15:00 - 15:20
	Coffee break <i>Dining hall</i>	15:30 - 16:00
16:00	Update on the characterization of FBK planar sensors <i>Seminar Room 10, St Anne's College</i>	<i>Giovanni Calderini</i> 16:00 - 16:20
	Update on TCAD surface and bulk radiation damage model <i>Seminar Room 10, St Anne's College</i>	<i>Arianna Morozzi</i> 16:20 - 16:40
	Update on the characterization of FBK 3D sensors <i>Seminar Room 10, St Anne's College</i>	<i>Marco Meschini</i> 16:40 - 17:00
17:00	3D-detector on hydrogenated amorphous silicon substrate <i>Seminar Room 10, St Anne's College</i>	<i>Mauro Menichelli</i> 17:00 - 17:20
	Future AIDA proposal: High-resolution tracking and timing hybrid sensors. <i>Seminar Room 10, St Anne's College</i>	<i>Ivan Vila Alvarez</i> 17:20 - 17:40

- Results on last year (very) intense characterization campaign of FBK 3D and planar pixel sensors at test beams (CERN, DESY, Fermilab)
- Preliminary characterization of CNM thin LGADs
- Status of recently completed CNM 3D run
- TCAD simulations update and indium based hybridization studies.
- start a more structured discussion on the future activities on hybrid detectors for AIDA++