



Wafer Procurement

*G. Darbo – INFN / Genova
3D/Active edge sensors with FBK
Vidyo, 30, May 2014*

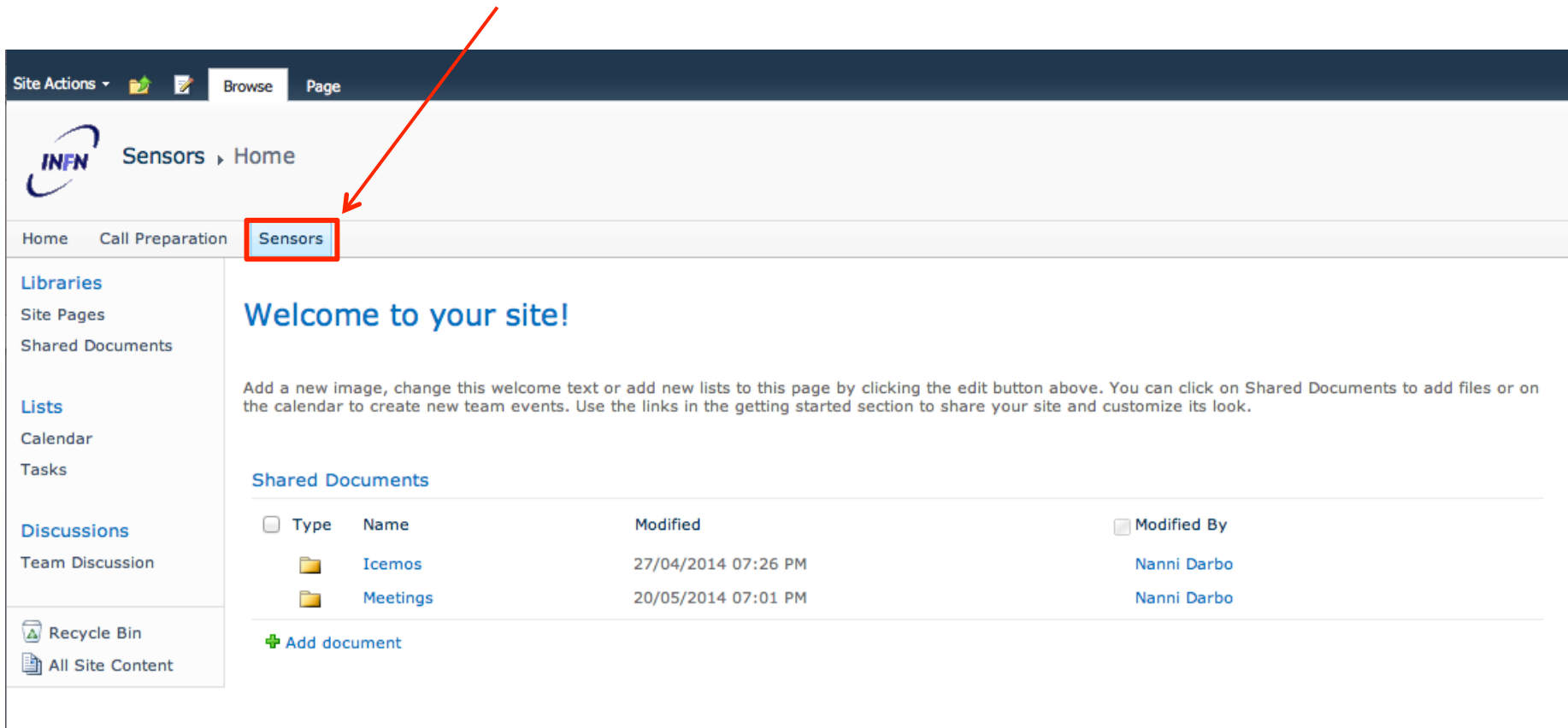


Indico agenda:

<https://agenda.infn.it/conferenceDisplay.py?confId=8160>

Created a subsite “Sensors” of the “INFN ACTIVE Call” site to use for common ATLAS/CMS R&D on sensor with FBK

- Access restricted to ACTIVE-GEN@CERN.CH e-groups (mailing list). Added FBK colleagues.
- <https://espace.cern.ch/hep-project-INFN-PixelRD/Sensors/SitePages/Home.aspx>



Site Actions   Browse Page

INFN Sensors Home

Home Call Preparation **Sensors**

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Welcome to your site!

Add a new image, change this welcome text or add new lists to this page by clicking the edit button above. You can click on Shared Documents to add files or on the calendar to create new team events. Use the links in the getting started section to share your site and customize its look.

Shared Documents

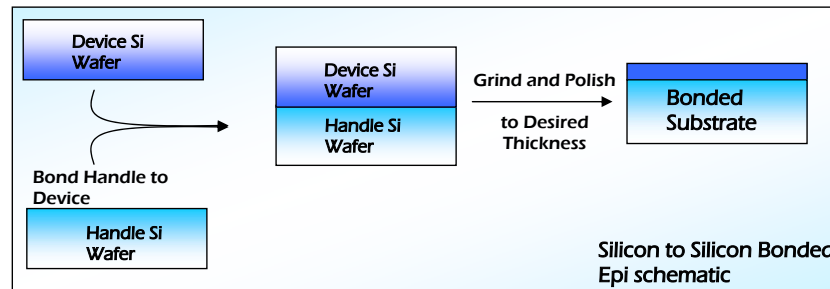
☐ Type	Name	Modified	☐ Modified By
	Icemos	27/04/2014 07:26 PM	Nanni Darbo
	Meetings	20/05/2014 07:01 PM	Nanni Darbo

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ICEMOS – Ordered Quantity

Ordered 30 wafers (130 um) + 25 wafers (100 um)

Si-Si Direct Wafer Bonded Epi wafers



- Delivery before 28/7/2014, total cost: 20,625 \$ (~15 k€)
- Specifications on SharePoint.

Item	Icemos Part No.	Description	Quantity	Price each in US Dollars
1	1000.377001	FBK 010 150mm SISI 100um Device/400um Handle.	25 wafers	\$375
2	1000.377002	FBK 010 rev1 150mm SISI 130um Device/400um Handle.	30 wafers	\$375
3		Per Shipment		\$195
• Leadtime for the above parts = 8 - 12 weeks a.r.o				



ICEMOS - SiSi Wafer Specifications

Icemos Technology Ltd

Product Specification

1000.377001

Issue Date 24 January 2014 15:11

Part Number	FBK SISI010, Customer Part: FBK SISI010	Customer	Fondazione Bruno Kessler
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Category	Parameter	Specification	Measurement Method
OverallWafer	1.0 Diameter	150.00 +/- 0.50 mm	
	2.0 Primary Flat Orientation	{110} +/- 0.5 degree	Wafer Vendor
	3.0 Primary Flat Length	57.50 +/- 2.50 mm	Wafer Vendor
	4.0 Secondary Flat Orientation	Semi standard / None	
	5.0 Overall Thickness	600.00 +/- 12.00 µm	ADE, 100%
	6.0 Total Thickness Variation (TTV)	<5.00µm	Guaranteed by Process
	7.0 Bow	<60.00µm	ADE to ASTM F534, 20%
	8.0 Warp	<60.00µm	ADE to ASTM F657, 20%
	9.0 Edge Chips	0	Bright Light, 100% (note 2)
	10.0 Edge Exclusion	5mm	
HandleSilicon	11.0 Handle Growth Method	CZ	Wafer Vendor
	12.0 Handle Orientation	{100} +/- 0.5 degree	Wafer Vendor
	13.0 Handle Thickness	500.00 +/- 10.00 µm	ADE, 100%
	14.0 Handle Doping Type	P	Wafer Vendor
	15.0 Handle Dopant	Boron	Wafer Vendor
	16.0 Handle Resistivity	0.001 - 1 Ohmcm	Wafer Vendor
	17.0 Backside Finish	polished with lasermark and oxide	Wafer Vendor
BuriedOxide	18.0 Oxide Type	None	
DeviceSilicon	19.0 Device Growth Method	FZ	Wafer Vendor
	20.0 Device Orientation	{100} +/- 0.5 degree	Wafer Vendor
	21.0 Nominal Thickness	100.00 +/- 2.00 µm	FTIR, 100% 9-Pt (note3)
	22.0 Device Doping Type	P	Wafer Vendor
	23.0 Device Dopant	Boron	Wafer Vendor
	24.0 Device Resistivity	>3000 Ohmcm	Wafer Vendor
	25.0 Voids	0	Bright Light, 100% (note 2)
	26.0 Scratches	0	Bright Light, 100% (note 2)
	27.0 Haze	none	Bright Light, 100% (note 2)

100 um thick wafers:

<https://espace.cern.ch/hep-project-INFN-PixelRD/Sensors/Shared%20Documents/Icemos/1000.377001%20FBK%20SiSi010.pdf>

130 um thick wafers:

<https://espace.cern.ch/hep-project-INFN-PixelRD/Sensors/Shared%20Documents/Icemos/1000.377002%20FBK%20SiSi010%20rev1.pdf>



SHINETSU - Epi Wafer Specifications

🏆 *Japanese firm found through Nobu Unno*

- Estimated cost ~7400 € for 25 wafer.
- Requested a formal bid for 25 wafers.

Specifications (when available)

🏆 *Quantity: 25 EPI-Wafers*

- Diameter: 150 mm+/-0.5mm
- Cristal orientation: <100>
- primary flat length: 57.5 mm+/-2.5mm
- Wafer type: p-type
- Substrate Resistivity: about 10 Ω cm (or less)
- Overall thickness: 675 μ m (not critical)

🏆 *EPI layer:*

- Resistivity: 500 - 2500 Ω cm
- dopant: B (Boron)
- thickness: **130-micron**.

🏆 *To be specified (best effort):*

- TTV (μ m)
- WARP/BOW (μ m)
- TIR (μ m)
- Oxygen and Carbon content
- Defect levels: stacking faults
- Allowed metallic contamination level

delivery time/date not known yet