4th RD50 - Workshop on
Radiation hard semiconductor devices for very high luminosity colliders

CERN, 5-7 May, 2004

Program

Printable version of this program (pdf) - status:

Locations (Building 40):

- Wednesday - 5. May - Building 40 (SS-C01)
- Thursday - 6. May - Building 40 (SS-D01)
- Friday - 7. May - Building 40 (SS-C01)

Wednesday, 5. May 2004 - Building 40 - room: SS-C01

Time	Title and Authors	Speaker	Abstract
9:00	**Welcome** **Mara Bruzzi** (RD50 Spokesperson); **Michael Moll** (RD50 Deputy Spokesperson)		0.1
Session I : Towards the Super LHC *Chairperson: Michael Moll*			
Time	**Title and Authors**	**Speaker**	**Abstract**
9:15 (25+5min)	**Accelerator Upgrades for SLHC** Oliver Brüning CERN,AB	Oliver Brüning (CERN)	1.1 Abstract
9:45 (35+5min)	**Detector and Electroics Upgrade** Geoffrey Hall Imperial College, London, UK	Geoffrey Hall (Imperial College, London, UK)	1.2
10:25 *(30min)*	**Coffee Break**		
Session II : Defect and Material Characterization *Convener and Chairperson: Bengt Svensson (Oslo University)*			
Time	**Title and Authors**	**Speaker**	**Abstract**
10:55	**Annealing behavior of defects in irradiated MCZ- and DOFZ-Si detector materials** M. Mikelsen (1), E. V. Monakhov(1), B. S. Avset(2), B. G. Svensson(1) (1) Department of Physics, Physical Electronics, University of Oslo (2) SINTEF, Electronics and Cybernetics	Mads Mikelsen (University of Oslo)	2.1 Abstract
11:15	**A simulation of transient photo-Hall effect for recognition of defects in oxygenated Si.** J.Storasta, J.Vaitkus, E.Zasinas Institute of Materials science and Applied Rsearch, Vilnius University, Lithuania	Juozas Vaitkus (Vilnius University)	2.2. Abstract

11:35	**Effect of fluence on defect structure of proton-irradiated high-resistivity silicon** P. Kaminski(1) , R. Kozlowski(1), M. Pawlowski(1), E. Nossarzewska-Orlowska(1), J. Harkonen(2), E. Tovinen (2) (1) Institute of Electronic Materials Technology, ul. Wolczyñska 133, 01-919 Warszawa, Poland (2) Helsinki Institute of Physics , P.O. Box 64 (Gustaf Hällströmin katu 2) 00014 University of Helsinki, Finland	Pawel Kaminski (Institute of Electronic Materials Technology)	2.3 Abstract
11:55	**AFM characterization and computer simulation of irradiated Si PIN devices** A. Ruzin Tel Aviv University	Arie RUZIN (Tel Aviv University)	2.4 Abstract
12:15 to 13:30	**Lunch**		
13:30	**Investigation of carrier lifetime temperature variations in the proton irradiated silicon by MWA transients** E.Gaubas, J.Vaitkus Institute of Material Science and Applied Research, Vilnius University, Lithuania in collaboration with J. Härkönen , E.Tuovinen, P. Luukka, E. Tuominen Helsinki Institute of Physics, Helsinki University, Finland and Hamburg group	Eugenijus Gaubas (Vilnius university)	2.5 Abstract
13:50	**Defect annealing in 4H-SiC** A. Castaldini, A. Cavallini, L. Rigutti, F. Nava Dipartimento di Fisica Universita di Bologna e INFM, Dipartimento di Fisica Universit di Modena e INFN	Anna Cavallini (Department of Physics University of Bologna)	2.6 Abstract
14:10	**Characterization Of Semiconductor-Optoelectronic Devices and Linear Integrated Circuits Exposed To KeV-MeV Energy Electron, Co-60 Gamma Rays, Neutrons and Heavy Ions.** N.P.DHARMADHIKARI GENBA SOPANRAO MOZE COLLEGE OF ENGINEERING 25/1/3 BALEWADI,HAVELI PUNE-411045(INDIA)	NANDKUMAR DHARMADHIKARI (G.S.MOZE COLLEGE OF ENGG.25/1/3 BALEWADI PUNE)	2.7 Abstract
14:30 *(30min)*	**Discussion Session: Defect and Material Characterization** ***Convener/Chairperson:*** ***Bengt Svensson (Oslo)***	DISCUSSION	(2.8)
15:00 *(30min)*	**Coffee Break**		

Session III: Pad Detector Characterization
Convener: Jaakko Haerkoenen (Helsinki Institute of Physics)
Chairperson:

Time	Title and Authors	Speaker	Abstract
15:30	**Comparison of radiation hardness of P-in-N, N-in-N and N-in-P Silicon pad detectors** G.Pellegrini, M.Lozano,P.Allport, G.Casse, F.Campabadal, C.Fleta, M. Key, C.Loderer, M.Ullan Centro Nacional de Microelectronica	Giulio Pellegrini (Centro)	3.1 Abstract

15:50	**Electric Fields in Irradiated Silicon Pad Detectors** O. Krasel, C. Goessling, R. Klingenberg, R. Wunstorf Lehrstuhl f. Experimentelle Physik IV, Universitaet Dortmund	Olaf Krasel (University of Dortmund)	3.2 Abstract
16:10	**p+/n-/n+ Cz-Si Detectors Processed on p-type Boron Doped Substrates with Thermal Donor Induced Space Charge Sign Inversion** J. Härkönen1, E. Tuovinen1, P. Luukka1, E. Tuominen1, Z. Li 2, E. Verbitskaya3, V. Eremin3 1Helsinki Institute of Physics, Helsinki University, Helsinki, Finland 2Brookhaven National Laboratory, USA 3Ioffe PTI, St.Petersburg, Russia	Jaakko Härkönen (Helsinki Institute of Physics)	3.3 Abstract
16:30	**N and P-type Cz-Si Detectors irradiated with high and low energy protons** E. Tuovinen1, J. Härkönen1, P. Luukka1, K. Lassila-Perini1, E. Tuominen1, D. Ungaro1, Z. Li 2, E. Verbitskaya3, V. Eremin3, A. Pirojenko4, I. Riihimäki4, A. Virtanen4, A. Furgeri5 and F. Hartmann5 1 Helsinki Institute of Physics, Helsinki University, Helsinki, Finland 2 Brookhaven National Laboratory, USA 3 Ioffe PTI, St.Petersburg, Russia 4 Accelerator Laboratory, Jyväskylä University, Jyväskylä, Finland 5 University of Karlsruhe, Karlsruhe, Germany	Esa Tuovinen (Helsinki Institute of Physics)	3.4 Abstract
16:50	**Charge collection efficiency of heavily irradiated silicon diodes operated with increased free carrier concentration and under forward bias** I. Mandic, M. Batic, V. Cindro, I. Dolenc, G. Kramberger, M. Mikuž, M. Zavrtanik Jožef Stefan Institute and Department of Physics, University of Ljubljana, SI-1000 Ljubljana, Slovenia	Igor Mandic (Jožef Stefan Institute)	3.5 Abstract
17:10 *(40min)*	**Discussion on Pad Detector Characterization** Convener/Chair: Jaakko Haekoenen • **Alexander Chilingarov (Lancaster University)**: "RD50 recommendations towards a standardisation of the macroscopic parameter measurements: Part II: MIP CCE measurements" (Document to be discussed: doc pdf) • **Gregor Kramberger (Ljubljana University)** "TCT measurements on CZ detectors"	DISCUSSION	(3.6)

Thursday, 6. May 2004 - Building 40 - room: SS-D01

Session IV: Defect Engineering
Convener and Chairperson: Eckhart Fretwurst

Time	Title and Authors	Speaker	Abstract
9:00	**Optimization of Operational Parameters for Current Injected Detectors** V. Eremin1, I.Ilyashenko1, E. Verbitskaya1, N. Egorov2, S. Golubkov2, A. Sidorov2, Z. Li3, K. M. Smith4, T. Niinikoski5 1Ioffe Institute, St Petersburg, Russia, 2Research Institute of Material Science and Technology, Zelenograd, Russia, 3Brookhaven National Laboratory, Upton, NY, USA, 4Glasgow University, Glasgow, UK, 5CERN, Genava, Switzerland	Vladimir Eremin (Ioffe)	4.1 Abstract
9:20	**Gamma Radiation Induced Space Charge Sign Re-inversion in Proton Irradiated High Resistivity CZ Si Detectors** Z. Li1, J. Harkonen 2, J. Kierstead1, P. Luukka2, E. Tuominen2, E. Tuovinen2, E. Verbitskaya3, and V. Eremin3 1 Brookhaven National Laboratory, Upton, NY 11973-5000, USA 2 Helsinki Institute of Physics, P.O. Box 64, University of Helsinki, Helsinki, 00014, Finland 3 Ioffe Physico-Technical Institute, Polytechnicheskaya Str. 26, St. Pertersburg, 194021, Russia	Zheng li (Brookhaven)	4.2 Abstract
9:40	**Oxygen dimer enriched silicon** Veronique Boisvert(1), Eckhart Fretwurst (2) Lennart Lindstroem (3), Michael Moll (1), Leonid Murin (4), Ioana Pintilie(5), Joerg Stahl(2) (1) CERN, Geneva, Switzerland (2) Hamburg University (3) Lund University (4) Lund and Minsk University (5) NIMP Bucharest and Hamburg University	Michael Moll (CERN)	4.3 Abstract
10:00 *(30min)*	**Discussion session: Defect Engineering** Chair/Convener: Eckhart Fretwurst	DISCUSSION	(4.4)
10:30 *(30min)*	**Coffee Break**		

Session V: New Structures
Convener: Mahfuzur Rahman (not present)
Chairperson: Zheng Li

Time	Title and Authors	Speaker	Abstract
11:00	**Status of ITC-irst activities in RD50** Maurizio Boscardin ITC-irst - MIS Division I - 38050 Povo, Trento (ITALY)	Maurizio Boscardin (ITC-irst)	5.1 Abstract
	Radiation hardness of 50 µm high resistivity FZ silicon detectors in comparison to 50 µm epitaxial silicon devices E.Fretwurst(a), L.Andricek(c), F.Hönniger(a), G.Kramberger(b), G.Lindström(a), G.Lutz(c), M.Reiche		

11:20	(d), R.H.Richter(c), A.Schramm(a) (a) Institute for Experimental Physics, University of Hamburg, Germany (b) Jozef Stefan Institute, University of Ljubljana, Slovenia (c) MPI of Physics, Semiconductor Detector Laboratory, Munich, Germany (d) MPI of Microstructure Physics, Halle, Germany	Eckhart Fretwurst (Inst.)	5.2 Abstract
11:40	**Radiation hardness simulation of silicon thin detectors** F.Moscatelli(1), M.Petasecca(2), G.U.Pignatel(2) (1) IMM-CNR sez.di Bologna, via Gobetti 101 - Italy (2) DIEI - Università di Perugia, via G.Duranti,93 - Italy	Marco Petasecca (DIEI - University of Perugia)	5.3 Abstract
12:00 *(30min)*	**Discussion session on New Structures:** **Chair: Zheng Li (BNL);** Convener: Mahfuzur Rahman (Glasgow, not present)	DISCUSSION	(5.4)
12:30 to 14:00	**Lunch**		

Session VI: Full Detector Systems
Part I - Strip detectors and Detector Electronics
Convener: Gianluigi Casse
Chairperson:

Time	Title and Authors	Speaker	Abstract
14:00	**Development of Radiation-hard Frontend Electronics for sLHC** David E. Dorfan, Alexander A. Grillo, Hartmut F.-W. Sadrozinski, Bruce Schumm, Abraham Seiden Santa Cruz Inst. for Particle Physics Univ. of California Santa Cruz	Hartmut Sadrozinski (SCIPP, UC Santa Cruz)	6.1. Abstract
14:20	**The performance of a large Czochralski silicon microstrip detector** A Bates, J Buytaert, P Collins, D Eckstein, J Kennedy, T Ketel, J Palacios, U Parzefall, I Stavitski, N Tuning CERN, The university of Glasgow, The University of Liverpool & NIKHEF	Alison Bates (Glasgow)	6.2 Abstract
14:40	**Recent results with n-in-p miniature microstip detectors after heavy proton irradiation** G. Casse Univ. of Liverpool	Gianluigi Casse (Uni.)	6.3 Abstract
15:00	**Discussion session on Full Detector Systems:** **(Part I: Microstrip detector developments)** Chair/Convener: **Gianluigi Casse (Liverpool University)** • **Vladimir Eremin (Ioffe, St.Petersburg)**: "**Current Status of "Technotest" RD50 subproject** V. Eremin et al.; Ioffe Institute, St. Petersburg, BNL, Helsinki Institute of Physics"	DISCUSSION	(6.4)
15:30 *(30min)*	**Coffee Break**		

16:00 to 18:00	**RD50 - Collaboration Board Meeting** **(closed session - 40-SS-D01)** (closed session: open for collaboration board members and proxies only, telephone conference) *Chairperson: Eckhart Fretwurst*
19:00	**Workshop dinner:** **This time we will go to the restaurant "Bois Joly" in Crozet in France** *(Departure: 19:15 in front of Building 13)* **..... more details about the dinner (menu etc.)**

Friday, 7. May 2004 - Building 40 - room: SS-C01

Session VI: Full Detector Systems
(Part II - Pixel detectors)
Convener and Chairperson: Gianluigi Casse

Time	Title and Authors	Speaker	Abstract
9:00	**Simulation of irradiated pixel detectors: an update** T. Lari C. Troncon Universita di Milano and INFN, Milan	Tommaso Lari (University of Milan and INFN)	6.5. Abstract
9:20	**Double junction simulation of CMS pixel test beam data** D.Bortoletto (1), V.Chiochia (2), L.Cremaldi (3), S.Cucciarelli (4), A.Dorokhov (2,5), M.Konecki (4), K.Prokofiev (2,5), C.Regenfus (2), T.Rohe (5), D.Sanders (3), S.Son (1), T.Speer (2), M.Swartz (6) 1) Purdue University, Task G, West Lafayette, IN 47907, USA, (2) Physik Institut der Universitaet Zuerich-Irchel, 8057 Zuerich, Switzerland, (3) Mississippi State Univ., Department of Physics and Astronomy, MS 39762, USA, (4) Institut fuer Physik der Universitaet Basel, Basel, Switzerland, (5) Paul Scherrer Institut, 5232 Villingen PSI, Switzerland, (6) Johns Hopkins University, Baltimore, MD, USA	Morris Swartz (Johns Hopkins University)	6.6. Abstract
9:40	**Discussion session on Full Detector Systems: (Part II: Pixel detector developments)** Chair/Convener: **Gianluigi Casse (Liverpool University)** • **Tilman Rohe (PSI, Switzerland)**: "Discussion of Pixel activities (in Europe)"	**DISCUSSION**	(6.7)
10:10 *(30min)*	Coffee Break		

Session VII: New Materials
Convener/Chairperson: Juozas Vaitkus

Time	Title and Authors	Speaker	Abstract
10:40	**GaN for use in harsh radiation environments** A Blue, W Cunningham, J Grant, M Rahman, E Gaubas, J, Vaitkus, V Cindro, M Moll, M Glaser University of Glasgow, Vilnius University, Jozef Stefan Institute, CERN	Andrew Blue (University of Glasgow)	7.1 Abstract
11:00	**GaAs PAD detector** M. Solar, B.Sopko, D. Chren, Z. Kohout, V. Linhart, S. Pospisil, E. Hulicius*, j. Pangrac*, V. Jurka* Czech Technical University in Prague Institut of Physics of Czech Academy of Science	Michael Solar (Czech Technical University in Prague)	7.2 Abstract
11:20	**Fabrication and characterization of wide area SiC detectors for neutron monitoring** A. Lo Giudice, C. Manfredotti, F. Fizzotti, C. Paolini, E. Vittone Experimental Physics Department, University of Torino and INFN, Sezione di Torino, Italy	Alessandro Lo Giudice (University of Turin (Italy))	7.3 Abstract
11:40	**Bulk SiC as a detector material** W. Cunninghama;1, J. Melonea, M. Horna, V.Kazukauskasb;c, J. Granta, F. Dohertya, M. Glaserd, J.Vaitkusb;c, M. Rahmana aDept. of Physics & Astronomy, University of Glasgow, Glasgow, G12 8QQ, Scotland bInstitute of Materials Science and Applied Research, Vilnius University, Sauletekio al.9-III, 2040 Vilnius, Lithuania cFaculty of Physics, Vilnius University, Sauletekio al.9-III, 2040 Vilnius, Lithuania dEP Division, CERN, CH-1211 Geneva 23, Switzerland	William Cunningham (University of Glasgow)	7.4 Abstract
12:00 *(30min)*	**Discussion session on New Materials:** Chair/Convener: Juozas Vaitkus	**DISCUSSION**	(7.5)

12:30 -- END OF WORKSHOP
(Mara Bruzzi and Michael Moll)

***M.Moll** -- Tuesday, 04. May 2004 10:12*