

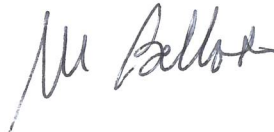
Padova 17 Luglio 2018

Curriculum vitae di Marco Angelo Bellato

Nato a Padova nel 1962, sposato, due figli: Greta e Giovanni. Svolto servizio di leva nel 1981-82 come sottotenente nella 4° Brigata Alpina. Laureato in Ingegneria Elettronica nel 1996. Conseguito il titolo di Dottore di Ricerca in Ingegneria delle Telecomunicazioni nell'anno 2003. Dipendente dell'Istituto Nazionale di Fisica Nucleare dal 1997. Partecipo a molti esperimenti di fisica nucleare e delle alte energie, principalmente negli ambiti di elettronica di front end, trigger, sistemi di acquisizione dati e controllo. Coordinatore di esperimenti di ricerca tecnologica finanziati dalla commissione V dell'INFN. Collaboro dal 1998 all'esperimento CMS del CERN per quanto concerne il sistema di trigger e di acquisizione dati. Coordinatore del sistema di controllo del rivelatore di muoni dell'esperimento CMS. Responsabile del sistema di trigger e sincronizzazione dell'esperimento AGATA. Responsabile del servizio di elettronica di controllo e radiofrequenza della Divisione Acceleratori dei Laboratori Nazionali di Legnaro. Responsabile del Work Package di elettronica e controlli del progetto speciale SPES. Responsabile dell'elettronica di *read-out* dell'esperimento JUNO. Docente a contratto presso l'Università di Padova in un corso di progettazione microelettronica. *Referee* per due riviste scientifiche per sistemi di trigger e acquisizione dati. *Co-chairman* della conferenza *IEEE Real Time 2016*.

Firma

M. Bellato

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Damiano Bortolato

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PEC: damiano.bortolato@pec.it

Date of birth: **16/05/1975** Nationality: **Italian** Mother tongue(s): Italian

EDUCATION

Graduated/MSc Student in Electronic Engineering (University of Padova (Padua)) Start (94, 09)
End (02, 10)
Final Grade: 101 (over 110)

High School Diploma in Industrial Electronic, ITIS Max Planck Lancenigo di Villorba (TV) Start (90, 09)
End (94, 06)
Grade: 48 (over 60)

OTHER: - RED HAT CERTIFIED SYSTEM ADMINISTRATOR (December 2014 CN 140-252-388)

- Corso di aggiornamento sull'operazione delle macchine acceleratrici 21-22/09/2015.

RELEVANT
PROFESSIONAL
EXPERIENCES

- From 01/02/2012 to 3/11/2017 (present) temporary position at LNL: Hardware and Software developer at INFN-LNL as Tecnologo III Livello. The work includes designing, developing, testing and producing the next generation electronics for the main Linac at LNL. This include also the developing of the software infrastructure (from HW drivers to Operator GUI) needed to operate the accelerator.

- From 01/02/2010 to 01/02/2012 temporary position at LNL: Hardware and Software developer for AGATA and GALILEO Experiments. Demonstrator Phase of AGATA has been completed, and the experiment is ready to move from LNL to GSI (Darmstadt DE). At the same time the needing of a more scalable and less expensive electronics for AGATA arose, so I started a new HW development for the data acquisition system which would cover the needing for both AGATA and the new experiment GALILEO (another HPGe Gamma Spectrometer to be installed at LNL). The new DAQ system was a PCIe based board optically interconnected with on-field Digitizers capable of processing, through an FPGA, 40 channels at 100Ms/s. The readout capability was up to 1GB/s (on RAM) using advanced device drivers for Linux OS.

- From 01/02/2008 to 01/02/2010 Temporary Research Associate at LNL: AGATA demonstrator Phase at LNL. Several AGATA subsystems was assembled, integrated and tested al LNL. During this period I also developed the first GUI for the DAQ control system. In this phase AGATA was been equipped with 5 HPGe triple-cryostats for a total of 570 acquisition channels.

- 01/09/2003 to 26/01/2008 Temporary Research Associate at INFN Padua: Hardware and Software developer at INFN-PD and INFN-LNL for the core development of **Advanced GAMMA ray Tracking Array** (Segmented HPGe Spectrometer). The core of the 1st generation of AGATA electronics has been developed, in collaboration with groups from other European Labs, during this period.
This included:
 - GTS: Global Trigger System: a distributed Synchronization and Time-stamping System suitable for selecting interesting events captured from germanium detectors.
 - data acquisition system (DAQ), a data collector and formatting system interconnected with GTS.

My personal contribution during this period was testing and validating the various board design and FPGA code development (for both, GTS and DAQ).



PERSONAL SKILLS

English

UNDERSTANDING		SPEAKING		WRITING
Listening	Reading	Spoken interaction	Spoken production	
B1/2	B1/2	B1/2	B1/2	B1/2
Levels: A1/2: Basic user - B1/2: Independent user - C1/2 Proficient user Common European Framework of Reference for Languages				

Other known language(s) German (A1/2)

Computer skills

Advanced:

- UNIX, Linux System Administration.
- C, C++, Python, VHDL, Programming.
- Linux OS kernel and Device Driver developing.
- Knowledge on Computer Networks and networking protocols and programming.

Intermediate:

- WEB Technologies and Languages (PHP, Javascript, HTML)
- MATLAB programming.

Other skills

- Timing Synchronization Systems for Nuclear Physics experiments. Skills acquired while developing the Global Trigger System of AGATA experiment at LNL.
- Fast Data Acquisition Systems development based on PCI, PCIe, ATCA infrastructures. Skills acquired during the AGATA and GALILEO data acquisition system development at INFN-LNL.
- RF control and distribution and monitoring for super-conductive Particle Linear Accelerator. Skills acquired during the development of the next generation electronics for ALPI Linac at INFN-LNL.
- Multi-Threaded GUI and control system development. Skills acquired during the development of control software for AGATA and GALILEO experiment at LNL.
- EPICS based control system development for Particle Accelerators. Skills acquired during the development of the next generation electronics for ALPI Linac at INFN-LNL.



D. Bortolato, S. Pavinato, D. Pedretti, M. Betti, F. Gelain, D. Marcato,
M. Bellato, R. Isocrate, M. Bertocco "New LLRF Control System at LNL"
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S. Pavinato *, M. Betti, D. Bortolato, F. Gelain, D. Marcato,
D. Pedretti, INFN, Laboratori Nazionali di Legnaro, 35020 Legnaro, Italy
M. Bellato, R. Isocrate, INFN, Sezione di Padova, 35031 Padova, Italy
M. Bertocco, Department of Information Engineering, University of Padova
"DEVELOPMENT OF A DIGITAL LLRF CONTROL SYSTEM AT LNL ", Proceedings of
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Pages: 91 - 98, Year: 2008, DOI: 10.1109/TNS.2007.910034

Ceschia, M.; Violante, M.; Reorda, M.S.; Paccagnella, A.; Bernardi, P.; Rebaudengo,
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classification of single-event upsets in the configuration memory of SRAM-based
FPGAs"; Nuclear Science, IEEE Transactions on, Volume 50, Issue 6, Part 1, Dec.
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Gonzalez, V.; Gulmini, M.; Isocrate, R.; Mengoni, D.; Pullia, A.; Recchia, F.; Rosso,
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A. "Development of the control card for the digitizers of the second generation
electronics of AGATA" Real Time Conference (RT), 2012 18th IEEE-NPSS Pages: 1 -
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Barrientos, D.; Gonzalez, V.; Bellato, M.; Gadea, A.; Bazzacco, D.; Blasco, J.M.;
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Conference (RT), 2012 18th IEEE-NPSS, Pages: 1 - 4, Year: 2012 DOI:
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"A 12-channel 14/16-bit 100/125-MS/s digitizer with 24-Gb/s optical output for
AGATA/GALILEO", Nuclear Science Symposium and Medical Imaging Conference
(NSS/MIC), 2012 IEEE Pages: 819 - 823, Year: 2012,
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Violante, M.; Ceschia, M.; Sonza Reorda, M.; Paccagnella, A.; Bernardi, P.; "Analyzing SEU effects is SRAM-based FPGAsb", Rebaudengo, M.; Bortolato, D.; Bellato, M.; Zambolin, P.; Candelori, A.; On-Line Testing Symposium, 2003. IOLTS 2003. 9th IEEE, Page(s):119 - 123, 7-9 July 2003.

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Sara Maria Carturan

Born in 1969, Sara Maria Carturan receives the Degree in Chemistry in 1993 from Padova University and the Ph.D. degree in Chemistry from Trento University in 2004. From 1993 to 2003 she works as high school teacher in Chemistry and since 2003 she has a permanent position as graduated technician at the Department of Physics and Astronomy of Padova University, with the main task of providing technological support to projects and activities funded by the DPA and INFN (Laboratori Nazionali di Legnaro). Her research interests have been focused on polymers synthesis and modification of their optical, electrical and mechanical properties by chemical treatments and/or ion beams interaction. Her master thesis was focused on the production of conductive polyimide through physical modification of the surface by ion implantation, performed at the Laboratori Nazionali di Legnaro - INFN. In 1994-95 Sara Maria Carturan deepens and develops her research work in the context of polymeric materials such as arrays for implementing or optimizing the operation of ionizing particle detectors such as Microstrip Gas Chambers, in collaboration with Prof. G. Della Mea (LNL and UNITN) and Prof. F. Sauli (CERN) within the R&D project RD28. Then, she collaborates in designing systems for high vacuum synthesis of thin layers of pure or hybrid polyimide based materials with controlled composition and thickness. In 1997 she obtains a scholarship from the firm EG&G Ortec, under the tutorage of Dr V. Rigato, for the study of possible materials suitable to protect and passivate high purity Germanium detectors, produced by the same company. In this context, she widens her skills to the synthesis and chemical characterization of sol-gel derived glasses and liquid phase deposited (LPD) silica-based materials. From 1999 to 2000 she contributes to the experiment DESC (INFN, IIIrd commission) whose purpose is to produce scintillating polymeric films with high radiation hardness for phoswich detectors. Moreover, she collaborates to the HPDREP (INFN, Vth commission) research project for the production of a radiation detector working in the range UV-vis-IR; in this field of research, she exploits the sol-gel technique for the production of a silica-based material containing a luminescent molecule to absorb UV radiation and transfer it in the visible range (wavelength shifter). In 2000 she enters the doctorate school in Chemistry and Chemical Technology (XVI cycle) of the University of Trento, with a PhD program on the "Synthesis and characterization of hybrid materials polymer and ceramic-based containing dyes: study of the properties of photoluminescence and ion beam induced luminescence for the application in radiation detectors". From 2001 to 2003, she is involved in the experiment ASTHICO (INFN, Vth Commission), whose aim is to study new polymer matrices with high resistance to radiation and scintillation efficiency. In 2003 she wins the selection for a position as graduated technician at the University of Padova and in 2004 she receives the PhD title in Chemistry. From 2003 to 2006, she widens her research interests and skills to the synthesis and characterization of nanocomposite materials of fluoropolymers and works within the experiment DEGIMON (INFN, Vth Commission), regarding the production of materials for optical vapour sensors. Since 2006, Sara Maria Carturan is part of the research group on the production and characterization of carbide-based refractory materials to be used as targets in the production of Radioactive Ion Beams, for the project SPES (selective production of exotic species), and she is even now part of the team in Task 4 of the project (production of ISOL target). In 2008, Sara Maria Carturan is local responsible for the INFN experiment ORIONE (Vth Commission), which aims at synthesise new polymer based flexible scintillators for the detection of ionizing particles and neutrons. In this context, she acquires experience in the preparation of siloxane materials through several processes of polymerization and in the synthesis of element-organic compounds, focusing on boron and gadolinium, to be dissolved in the polymeric matrix as neutrons absorbers and sensitizers. Since 2009, Sara Maria Carturan is involved in several experiments (COHERENT, ICERAD, AXIAL, Vth Commission) focusing on the preparation of Germanium strips and membranes of optimal crystal quality for high energy charged particles channeling experiments, to be held at CERN (SPS accelerator), MAMI (Mainz), TIFPA (Trento). Since 2011, the expertise in the field of machining and etching of semiconductor crystals allowed S.M. Carturan to contribute to the experiment GAMMA (INFN, IIIrd commission) with particular reference to the processes of wet chemical etching and passivation of High Purity Germanium detectors for γ -rays. Recently, she has been involved in the development of new strategies to obtain semiconductor doping, using Spin-on-Doping techniques and non-conventional diffusion of dopants in Germanium in strict collaboration with the Semiconductors research group at the Department of Physics and Astronomy of the University of Padova (Prof. D. De Salvador, Prof. E. Napolitani). In the field of radiation sensors, Sara Maria Carturan is involved in the Project BIRD "Soil moisture measurements by detecting cosmic neutrons with organic scintillators" funded by the University of Padova (PI Dr L. Stevanato, 2017-2018), and the project THRILLING "THin cRystal fILms of Lithium Niobate for photo-Galvanics", funded by the University of Padova (PI Dr M. Bazzan, 2018-2019).

Sara Maria Carturan has co-authored more than 100 peer reviewed papers on international journals and is referee of several international Journals such as IEEE TNS on Nucl. Sci., Mater. Chem. and Phys., Mater. Lett., Polymer, and others.

° h-index: 16, total citations number: 868 (ISI web of science, June 2018)

° h-index: 20, total citations number: 1390 (Google Scholar, June 2018)

Padova, 25/07/2018

