



Application from	Greco, Virginia
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Job	Marie Curie IAPP : FTK ER10 (CERN) / FELL-FTK-2015-1
Document Type	Application Form
Application date	23/03/2015 13:52

Personal Details

Title	Ms.
Family Name	Greco
First Name(s)	Virginia
Maiden Name (if applicable)	
Gender	Female / Femme
Date of birth	10/03/1978
Nationality	Italian (IT)
Second Nationality (if applicable)	
Country of Birth	ITALY
Town of Birth	Copertino (Lecce)
Home Address (line 1 - max 32 chars)	Via Mariscoglio 8
Home Address (line 2 - max 32 chars)	
City	Pisa
Country	ITALY
Postal Code	56124
Landline Phone Number (with international prefix)	+39 050572334
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What is your mother tongue?	Italian
Please rate your level of English	C2
Please rate your level of French	B1
Please select any other languages you may speak	Spanish

Education

Country	SPAIN
Level of Education	SPAIN - Other
Title of Diploma/Qualification Note: Please give the full title in their original language (using Latin characters)	Curso de Capacitación de Supervisores de Instalaciones Radiactivas
Attended From	03/2013
Attended To (planned end date for current studies)	03/2013
School/University Name	Universidad Autónoma de Barcelona y UTPR

Country	ITALY
Level of Education	ITALY - Abilitazione professionale

Title of Diploma/Qualification Note: Please give the full title in their original language (using Latin characters)	Journalist License
Attended From	10/2008
Attended To (planned end date for current studies)	05/2011
School/University Name	Journalists National Association

Country	ITALY
Level of Education	ITALY - Dottorato di ricerca
Title of Diploma/Qualification Note: Please give the full title in their original language (using Latin characters)	Dottorato di ricerca in Fisica (Ph.D. in Physics)
Attended From	11/2007
Attended To (planned end date for current studies)	07/2012
School/University Name	University of Siena, Italy (and CERN)

Country	ITALY
Level of Education	ITALY - Abilitazione professionale
Title of Diploma/Qualification Note: Please give the full title in their original language (using Latin characters)	Electronic Engineer License (qualifying examination)
Attended From	11/2006
Attended To (planned end date for current studies)	01/2007
School/University Name	University of Pisa / Engineers National Association

Country	ITALY
Level of Education	ITALY - Laurea Specialistica
Title of Diploma/Qualification Note: Please give the full title in their original language (using Latin characters)	Laurea in Ingegneria Elettronica dei Microsistemi
Attended From	09/2004
Attended To (planned end date for current studies)	10/2006
School/University Name	University of Pisa

Country	ITALY
Level of Education	ITALY - Laurea Magistrale
Title of Diploma/Qualification Note: Please give the full title in their original language (using Latin characters)	Laurea in Ingegneria Elettronica (Degree in Electronic Engineering)
Attended From	10/1996
Attended To (planned end date for current studies)	12/2004
School/University Name	University of Pisa

Country	ITALY
Level of Education	ITALY - Maturità
Title of Diploma/Qualification Note: Please give the full title in their original language (using Latin characters)	Diploma di Liceo Scientifico
Attended From	09/1991

Attended To (planned end date for current studies)	06/1996
School/University Name	Liceo Scientifico "Cosimo De Giorgi"

Employment

Date from	03/2013
Date to	06/2015
Name of your Employer	Centro Nacional de Microelectrónica de Barcelona (IMB-CNM-CSIC)
Country	SPAIN
Title of your Position	Post-doc researcher
Job Description	<p>-> My present research activity is focused on the study, development, and characterization of silicon radiation detectors for particle and nuclear physics experiments, for medical imaging, and for dosimetry. I am involved in the design and simulation process, as well as in the phase of characterization and evaluation of the performances of the detectors after fabrication.</p> <p>-> Radiation effects on the detectors are also studied, by performing a number of measurements on the devices after irradiation with neutrons and protons (the irradiations are carried out in specific facilities abroad).</p> <p>-> My work on semiconductor radiation detectors at CNM is developed within the CERN RD50 Collaboration. It means that I keep pursuing a research career within an international, high level and competitive environment.</p> <p>In 2014, at the 24th RD50 Workshop held in Bucharest (Romania), the Collaboration Board appointed me as Coordinator of the RD50 working group developing detectors with intrinsic multiplication (LGAD Group).</p>

Date from	09/2011
Date to	12/2012
Name of your Employer	CERN FDP-KT-LifeSciences
Country	SWITZERLAND
Title of your Position	Technical Coordinator of the EU funded Marie Curie PARTNER Project (FP-7 PEOPLE)
Job Description	<p>The PARTNER project was focused on applications of physics and engineering to the medical field and involved 12 European Research Institution or Companies, 22 doctoral students and 3 post-doctoral researchers. In particular, the project aimed at the creation of the next generation of experts in oncologic hadron-therapy, which is a technique that uses the energy of charged particles (protons and some heavy ions) to destroy cancer cells. I was a member of the ENLIGHT network, under the umbrella of which the PARTNER project was developed.</p> <p>@ As a technical coordinator of the project, I had the opportunity to:</p> <ul style="list-style-type: none"> --> enhance my knowledge in the field of medical physics and radiobiology; --> acquire management expertise; --> enter in close contact with researchers working in different institutions and research centers, as well as in various scientific fields: medical and particle physics; radio-biology; accelerator and detector technologies; electronics and software engineering; <p>--> I was also involved in the dissemination and outreach activities of the Life Science KT group and of the ENLIGHT network;</p> <p>--> I gave lectures about medical physics and technology transfer to high school students and physics teachers (education programs of CERN);</p> <p>--> I was an active member of the Organizing Committee of the ICTR-PHE 2012 International Conference, held in Geneva, in February 2012.</p>

Date from	09/2007
Date to	08/2011
Name of your Employer	CERN & University of Siena (Italy)
Country	SWITZERLAND

Title of your Position	Ph.D. Student within the TOTEM experiment at LHC
Job Description	<p>-> I developed and tested some of the front-end electronic boards for of one of the sub-detectors of the TOTEM experiment (the T2 telescope);</p> <p>-> I took part to large campaigns of testing of the T2 telescope, where GEM (Gas Electron Multiplier) chambers were to be integrated with electronics for read-out and trigger.</p> <p>-> I was deputy coordinator of the installation and commissioning of the T2 sub-detector in the underground cavern at LHC: as a consequence, I was required to interact continuously with the management of my experiment, as well as with the management of the CMS experiment, because the two apparatus share the same underground facilities. While leading some phases of the installation, I managed the work of the technical staff giving support for the activities in the CMS cavern and the LHC tunnel.</p> <p>-> I took responsibilities for the design of part of the electronics and the development of the selecting algorithms for the trigger system of the whole experiment.</p> <p>-> I performed the evaluation of the performances of the trigger system of the T2 sub-detector. In order to measure the efficiency of the trigger and the selecting algorithms, I analyzed real data taken during the activity of the LHC.</p> <p>-> I performed tutoring activities by supervising the work of two 'summer students' (involved in the CERN summer research program for undergraduate students) and the thesis activities of a graduate student in Physics of the University of Siena.</p>

Specific Information (Fellows)

When would you like to start working at CERN?	09/2015
What is your motivation for applying for this job?	<p>I am applying for this position in the ATLAS-FTK group because I believe it is a perfect match for my skills and expertise, and would allow me to keep pursuing a career at the intersection of engineering and physics.</p> <p>I have a sound background in electronics and microelectronics, acquired during my university studies, and in experimental physics, due to my training as a doctoral student at CERN and my work within the CDF experiment. I have also gained a broad experience in the development and testing of electronic systems, instrumentation, and detectors for physics experiments.</p> <p>If selected as recipient of this fellowship, I would take shared responsibilities for the commissioning of the Fast Tracker for ATLAS, leveraging on my previous experience as co-leader of the installation and commissioning of the T2 sub-detector for the TOTEM experiment, as well as of the trigger system of the whole experiment. My knowledge of FPGA technology, design, simulation and implementation will represent a strong base for understanding the FTK system and rapidly become a key element of the project group. I would also build on my expertise in trigger and data taking in order to carry out the development, testing, and optimization activities required to commission the new FTK.</p> <p>I am willing to work in a top-level, dynamic, and international environment, as well as to take on responsibilities within a research collaboration, as demonstrated by the fact that I have been technical coordinator of a EU funded project and that I am currently coordinating a research group focused on the development of detectors with internal gain, within the CERN RD50 Collaboration.</p> <p>Finally, If selected for this job, I would embrace the new challenge with determination, enthusiasm, and result-oriented attitude.</p>
Have you ever worked at CERN before?	<p>Yes - as a Doctoral Student</p> <p>Yes - on another type of contract</p>
If you selected "Yes - as a Fellow", please indicate for how long have you been a Fellow (in months)?	

Do you wish to also be considered for a COFUND Fellowship?	Yes
Main field of study	Applied Physics / Physique Appliquée
Please indicate for which type of Fellowship you wish to be considered	
Secondary field of study	Experimental Physics / Physique Expérimentale
Tertiary field of study	Scientific Communication & Education / Education et Communication Scientifique
Applied physics	Particle detector physics
Describe the projects where you used the selected applied physics topics and/or any others that are not listed	<p>Since early 2013, I am part of the Radiation Detectors Group at the National Centre of Microelectronics of Barcelona (IMB-CNM, CSIC). In 2014, at the 24th RD50 Workshop held in Bucharest (Romania), the Collaboration Board appointed me as Coordinator of the RD50 working group developing detectors with intrinsic multiplication (LGAD Group).</p> <p>My present research activity is focused on the study, development, and characterization of silicon radiation detectors for particle and nuclear physics experiments, for medical imaging, and for dosimetry. I am involved in the design and simulation process, as well as in the phase of characterization and evaluation of the performances of the detectors after fabrication.</p> <p>During my PhD work (in the TOTEM Collaboration at CERN) I have also worked on a tracking telescope based on GEM chambers.</p> <p>Relevant projects on detectors I have worked for in the last two years:</p> <ul style="list-style-type: none"> -> PIXELATLAS: Spanish National Project - Ministerio de Economía y Competitividad; Head researcher: Sebastian Grinstein (IFAE/ICRA); 2014-2016. -> Present and Future Pixel Detectors for the ATLAS Experiment: Spanish National Project: FPA2013-48308-C2-2-P - Ministerio de Economía y Competitividad; Head researchers: David Flores Gual (CSIC), Giulio Pellegrini (CSIC); 2014-2015. -> CPAN - Centro Nacional de Física de Partículas, Astropartículas y Nuclear: Spanish National Project: MEC CSD00C-07-21117; Ministerio de Educación, Política Social y Deporte; Head researcher: Manuel Lozano Fantoba; 2008-2015. -> Fabrication of new-type pixel detectors with enhances multiplication effect in the n-type electrodes: Research, development, and transfer project; Funding institution: CERN; Head researcher: Manuel Lozano Fantoba; 2013-2014.
Architecture	
Describe the projects where you used the selected architecture topics and/or any others that are not listed	
Surveying	
Describe the projects where you used the selected surveying topics and/or any others that are not listed	
Chemistry	
Describe the projects where you used the selected chemistry topics and/or any others that are not listed	
Civil engineering	
Describe the projects where you used the selected civil engineering topics and/or any others that are not listed	
Programming Languages	
Describe the projects where you used the selected programming languages and/or any others that are not listed	
Databases	
Describe the projects where you used the selected databases and/or any others that are not listed	
Information Technologies	

Describe the projects where you used the selected information technologies and/or any others that are not listed	
Theory of electrical engineering	
Describe the projects where you used the selected theory of electrical engineering topics and/or any others that are not listed	
Networks and systems	
Describe the projects where you used the selected networks and systems and/or any others that are not listed	
Low and high frequency engineering	
Describe the projects where you used the selected low and high frequency engineering topics and/or any others that are not listed	
Experimental Physics	
Describe the projects where you used the selected experimental physics topics and/or any others that are not listed	
Materials and experimental techniques	
Describe the projects where you used the selected materials and experimental techniques and/or any others that are not listed	
Mathematics	
Describe the projects where you used the selected mathematics knowledge and/or any others that are not listed	
Mechanical engineering	
Describe the projects where you used the selected mechanical engineering topics and/or any others that are not listed	
Safety	
Describe the projects where you used the selected safety topics and/or any others that are not listed	

<p>List of (up to 5) most important publications in refereed scientific journals: reference, title. In each case summarize in 2 lines maximum your personal contribution.</p>	<p>1) The TOTEM Collaboration, "The TOTEM Experiment at the CERN Large Hadron Collider", Journal of Instrumentation 3 - 8, pp. S08007-i - S08007-107. IOP Publishing, 14/10/2008. My contribution: co-design and testing of some of the front-end electronic boards for the T2 sub-detector; installation and commissioning of the system.</p> <p>2) Virginia Greco et al., "Devices Optimised for Avalanche Multiplication", Proceedings of Science, SISSA, 2015. My contribution: Performance characterization of a new design of silicon detectors with internal gain (LGAD).</p> <p>3) Pellegrini, G. et al., "Technology Developments and First Measurements of Low Gain Avalanche Detectors (LGAD) for High Energy Physics applications", Nuclear Instruments and Methods in Physics Research, Section A. 765, pp. 12 - 16. ELSEVIER, 21/11/2014. My contribution: Electrical characterization and performance studies of novel silicon detectors with avalanche multiplication (LGAD).</p> <p>4) Antchev, G., et al., "Luminosity-independent measurement of the proton-proton total cross section at $\sqrt{s}=8$ TeV", Physical Review Letters. 111 - 1, pp. 012001-1 - 012001-6, American Physical Society, 03/07/2013. My contribution: Co-development of the electronic trigger system; study and implementation of trigger algorithms; evaluation of trigger efficiency.</p> <p>5) The TOTEM Collaboration, "Luminosity-independent measurements of total, elastic and inelastic cross-sections at $\sqrt{s} = 7$ TeV", EPL (Europhysics Letters), 101 - 2, pp. 21004-1 - 21004-5, IOP Publishing, 05/02/2013. My contribution: Co-development of the electronic trigger system; installation and commissioning; study and implementation of trigger algorithms.</p>
<p>Are you a PhD holder or PhD student?</p>	<p>Yes / Oui</p>
<p>Specify submission date, defence date, title of thesis and name of your supervisor; summarize your thesis in maximum 5 lines; give the most significant results obtained.</p>	<p>Submission: June 2012; Defence: 13 July 2012; Title: "The TOTEM Experiment at the LHC: the Trigger System"; Supervisor: Dr. Nicola Turini. CERN PhD Programme</p> <p>The thesis presents the TOTEM experiment at the LHC: physics purposes; apparatus; read-out and DAQ electronic systems; trigger system.</p> <p>The main objective of the thesis work is the conception, design, and implementation in FPGA chips of trigger algorithms for the whole TOTEM experiment. After tests and calibration, the trigger selection system was employed to take data during dedicated physics runs. The trigger performances were evaluated for T2 on sets of real data.</p> <p>By applying these trigger algorithms (and electronics) the TOTEM experiment could perform very relevant measurements, which are extensively described through several articles (see CV).</p>
<p>List up to 3 experiments that you have participated in. In each case summarize in 2 lines your main contribution (other than your PhD)</p>	
<p>Optionally: List of up to 5 public or internal notes to which you have contributed personally. Indicate the number of authors.</p>	
<p>List of (up to 5) presentations at international Conferences (specify talk or poster) or workshops: conference name, date, title of the talk</p>	
<p>Statement of Research Interest (max 15 lines)</p>	
<p>Additional comments</p>	<p>Before starting my PhD, I worked within the CDF Collaboration (at FERMILAB) on the trigger system of the experiment (Level1 and Level2 upgrades).</p>
<p>Y</p>	

Greco Virginia Curriculum vitae et studiorum

Last Name	Greco
First Name	Virginia
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Residence Address	Via Mariscoglio, 8; 56124 Pisa (Italy)
Telephone	+34 684 115 240
E-mail address	virginia.greco@imb-cnm.csic.es; virginia.greco@cern.ch

Education

Ph.D. (2012)	Physics , University of Siena, Italy & CERN, Switzerland Thesis title: "The TOTEM Experiment at the LHC: the Trigger System".
Master's Degree (2006)	Engineering of Microelectronic Systems and Technologies , University of Pisa, Italy Thesis title: "Characterization of an electrostatic micro-mirror for optical cross connect (OXC) switches".
Bachelor's Degree (2004)	Electronics Engineering , University of Pisa, Italy Thesis title: "Analysis and simulation of a torsional micro-mirror for optical cross connect (OXC) switches".

Professional Experiences

2013 – ongoing IMB-CNM-CSIC (Barcelona, Spain)	Post-Doc Researcher on Radiation Detectors My research activity within the Radiation Detectors Group of the Spanish National Centre of Microelectronics (in Barcelona) is focused on the study, development, and characterization of silicon radiation detectors for particle and nuclear physics experiments, for medical imaging, and for dosimetry. I am involved in the design and simulation process, as well as in the phase of characterization and evaluation of the performances of the detectors after fabrication. I also study the effects of radiation exposure on the detectors . I am a member of the CERN RD50 Collaboration, in the framework of which I am Coordinator of the working group developing detectors with intrinsic multiplication (LGAD Group). I am involved in a number of projects funded by the Spanish National Department of Research.
2011 – 2012 CERN (Geneva, Switzerland)	Technical Coordinator of the EU funded Marie Curie PARTNER Project The PARTNER Project aimed at the creation of experts in cancer treatment with hadron-therapy by offering research and education opportunities to 25 young physicists, engineers, biologists and physicians. As a coordinator of the project, my main duties were: following the training and work paths of the researchers; co-organizing (and attending) training courses and meetings between the partners of the project;

drawing up scientific and financial reports (to be submitted to the European Community Projects Evaluation Committee); managing the communication and dissemination activities.

I was an active member of the Organizing Committee of the ICTR-PHE 2012 International Conference, held in Geneva (Switzerland), 27th February-2nd March 2012.

2007 – 2012

CERN (Switzerland)
University of Siena (Italy)

Ph.D. Student: Front-end electronics of Telescope 2 (T2) and total Trigger System electronics, architecture and strategy for the TOTEM experiment (at CERN, Switzerland).

TOTEM is one of the experiments built up with LHC (Large Hadron Collider), and is made up of three sub-detectors: Roman Pots (elastic detectors, located in the tunnel), T1 and T2 (inelastic telescopes, hosted in the CMS cavern).

My work in Totem included development and testing of some of the front-end electronic boards (EDMS: EDA-01067-V2, EDA-01710-V1) for the T2 sub-detector, as well as installation and commissioning of the system, of which I was deputy coordinator. I was also involved in the development of the electronics for the trigger of the whole experiment, I commissioned it and participated in writing the firmware (in VHDL) for triggering relevant events.

I studied and implemented new algorithms for the trigger system, tested them during the LHC runs and performed a preliminary analysis of the first data taken, in order to evaluate the selection efficiency.

I performed tutoring activities by supervising the work of two 'summer students' (involved in the CERN summer research program for undergraduate students) and the thesis activities of a graduate student in Physics of the University of Siena.

2007 – 2008

Fermilab (Illinois, US),
INFN Pisa (Italy)

Upgrades of Level1 and Level2 trigger systems for the calorimeter detector of the CDF experiment (at Fermilab, USA).

As the Tevatron luminosity increased in the last years of its running time, a more sophisticated trigger strategy was required. To deal with this problem, CDF pushed the Level 3 calorimeter algorithm resolution up to Level 2 and to Level1, increasing the efficiency. Two related upgrades were necessary.

My work within these two upgrades included: developing firmware for FPGA devices; performing electronic tests on new dedicated hardware; commissioning.

Languages

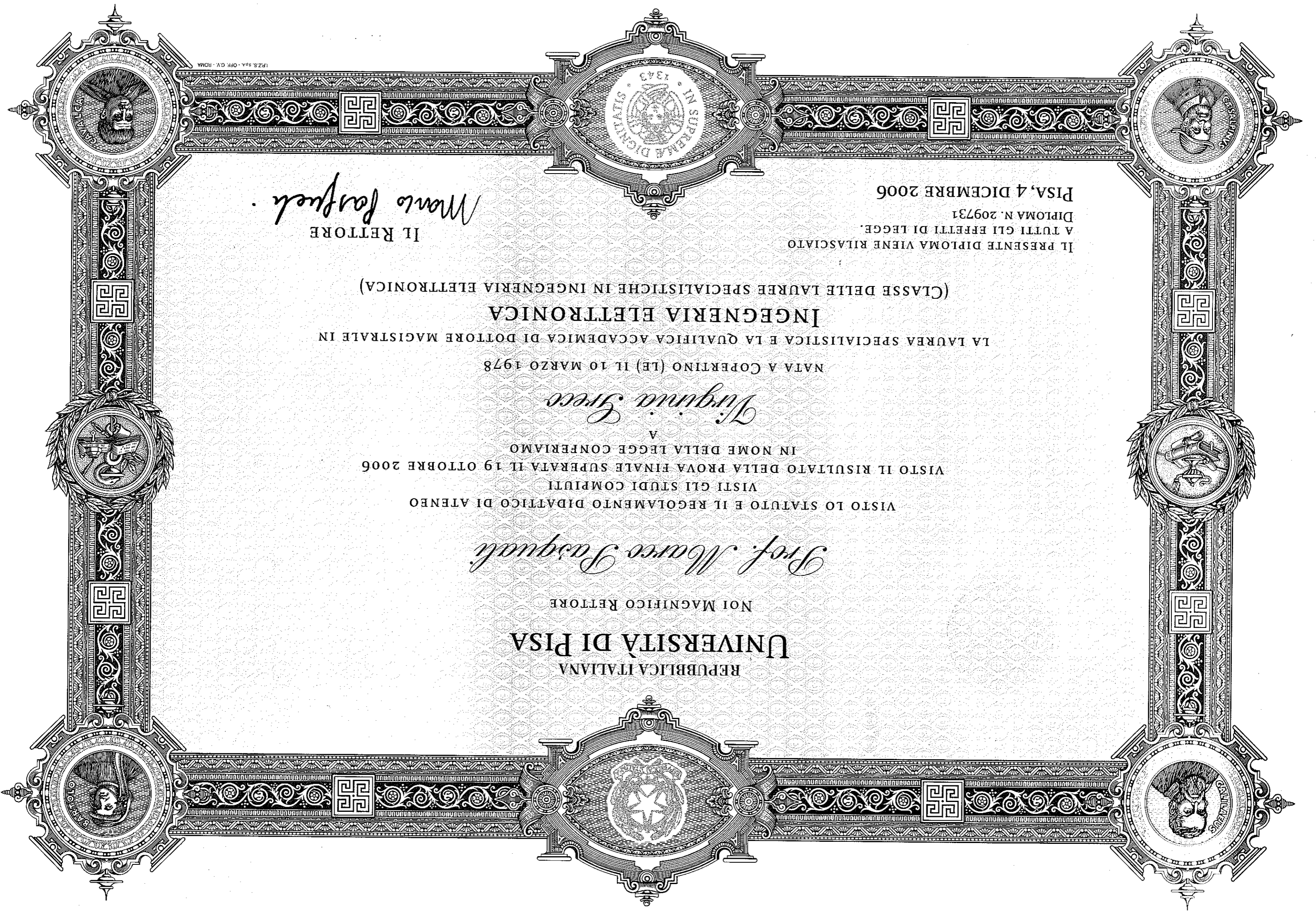
Italian: mother tongue; **English:** fluent (oral and written);

Spanish: fluent (oral and written); **French:** good (oral) - basic (written).

Publications

- Greco, V. et al., "Devices Optimised for Avalanche Multiplication", Proceedings of Science- SISSA, 2015, article in the press. Invited talk at the 23rd International Conference on Vertex detectors – Vertex 2014.
- Sadrozinski, H.F. et al., "Sensors for ultra-fast silicon detectors"; Nuclear Instruments and Methods in Physics Research, A. 765, pp. 7 - 11. Elsevier, 2014.
- Pellegrini, G. et al, "Developments and First Measurements of Low Gain Avalanche Detectors (LGAD) for High Energy Physics applications", Nuclear Instruments and Methods in Physics Research, Section A. 765, pp. 12 - 16. Elsevier, 2014.
- The CERN RD50 Collaboration, "Recent progress of the RD50 Collaboration- Development of radiation tolerant tracking detectors", 22nd International Workshop on Vertex Detector Record - PoS Vertex2013, Proceedings of Science - SISSA, 2014.
- Cartiglia, N. et al., "Timing Capabilities of Ultra-Fast Silicon Detectors", Acta Physica Polonica B, Proceedings Supplement. 7 - 4, pp. 657 – 664, Jagellonian University, 2014.
- The TOTEM Collaboration, "Double diffractive cross-section measurement in the forward region at the LHC", Physical Review Letters, American Physical Society, 2013.
- Antchev, G. et al., "Performance of the TOTEM Detectors at the LHC2, International Journal of Modern Physics A. 28 - 31, pp. 1 – 41, World Scientific Publishing Co., 2013.
- Baechler, J. et al., "Status of the TOTEM experiment at LHC", Nuclear Instruments and Methods in Physics Research, Section A, 718, pp. 21 - 25. ELSEVIER, 2013.
- Antchev, G. et al., "Luminosity-independent measurement of the proton-proton total cross section at $\sqrt{s}=8$ TeV", Physical Review Letters, 111 - 1, pp. 012001-1 - 012001-6, American Physical Society, 2013.
- The TOTEM Collaboration, "Luminosity-independent measurements of total, elastic and inelastic cross-sections at $\sqrt{s} = 7$ TeV", EPL (Europhysics Letters), 101 - 2, pp. 21004-1 - 21004-5, IOP Publishing, 2013.
- The TOTEM Collaboration, "Measurement of proton-proton elastic scattering and total cross-section at $\sqrt{s} = 7$ TeV", EPL (Europhysics Letters), 101 - 2, pp. 21002-1 – 21007, IOP Publishing, 2013.
- The TOTEM Collaboration, "Measurement of proton-proton inelastic scattering cross-section at $\sqrt{s}= 7$ TeV", EPL (Europhysics Letters), 101 - 2, pp. 21003-1 - 21003-7, IOP Publishing, 2013.
- Dosanjh, M. et al., "ENLIGHT: The european network for light ion hadron therapy", Health Physics, 103 - 5, pp. 674 – 680, US National Library of Medicine - National Institutes of Health, 2012.
- Berretti, M. et al., "Reconstruction Software for High Multiplicity Events in GEM Detectors", Astroparticle, Particle, Space Physics and Detectors for Physics Applications 7, pp. 935 - 941. World Scientific Publishing Co., 2012.
- Turini, N. et al., "The trigger system of the TOTEM experiment at LHC", Astroparticle, Particle, Space Physics and Detectors for Physics Applications 7, pp. 1056 – 1061, World Scientific Publishing Co., 2012.
- The TOTEM Collaboration, "Measurement of the forward charged-particle pseudorapidity density in pp collisions at $\sqrt{s} = 7$ TeV with the TOTEM Experiment, EPL (Europhysics Letters), 98 - 3, pp. 31002-1 - 31002-7, IOP Publishing, 2012.
- Csörgö, T. et al., "Elastic Scattering and Total Cross-Section in p+p Reactions, as Measured by the LHC Experiment TOTEM at $\sqrt{s} = 7$ TeV", Progress of Theoretical Physics Supplement 193, pp. 180 – 183, Oxford University Press, 2012.

- Baechler, J. et al., "The TOTEM Experiment at LHC", IEEE Nuclear Science Symposium Conference (NSS/MIC) Record, pp. 1417 – 1420, IEEE, 2012.
- Berretti, M. et al., "The TOTEM T2 detector at LHC: Track reconstruction Software for High Multiplicity Events in GEM Detectors. IEEE Nuclear Science Symposium Conference Record.", pp. 1421 – 1423, 2012.
- The TOTEM Collaboration, "First measurement of the total proton-proton cross-section at the LHC energy of $\sqrt{s} = 7$ TeV", EPL (Europhysics Letters), 96 - 2, pp. 21002-1 - 21002-7, IOP Publishing, 2011.
- The TOTEM Collaboration, "Proton-proton elastic scattering at the LHC energy of $\sqrt{s}=7$ TeV.", EPL (Europhysics Letters), 95 - 4, pp. 41001-1 - 41001-7, IOP Publishing, 2011.
- Quinto, M. et al., "The TOTEM GEM Telescope (T2) at the LHC", Nuclear Physics B - Proceedings Supplements 215 - 1, pp. 225 – 227, Elsevier, 2011.
- Bagliesi, M.G. et al., "The TOTEM T2 telescope based on triple-GEM chambers", Nuclear Instruments and Methods in Physics Research A, 617 - 1-3, pp. 134 – 137, Elsevier, 2010.
- Antchev, G. et al., "The TOTEM detector at LHC", Nuclear Instruments and Methods in Physics Research, Section A, 617 - 1-3, pp. 62 – 66, Elsevier, 2010.
- Bagliesi, M.G. et al., "The TOTEM modular trigger system", Nuclear Instruments and Methods in Physics Research, Section A, 617 - 1-3, pp. 313 – 315, ELSEVIER, 2010.
- Bhatti, A. et al., "The CDF level 2 calorimetric trigger upgrade", Nuclear Instruments and Methods in Physics Research, Section A, 598 - 1, pp. 331 – 333, Elsevier, 2009.
- Greco, V. et al., "Level-3 Calorimetric Resolution available for the Level-1 and Level-2 CDF Triggers", 28th Physics in Collisions, PIC 2008 - Proceedings of the International Symposium. pp. 386 – 390, SLAC -ECONF, 2009.
- The TOTEM Collaboration, "The TOTEM Experiment at the CERN Large Hadron Collider", Journal of Instrumentation 3 - 8, pp S08007-i - S08007-107, IOP Publishing, 2008.
- Canepa, A. et al., "Level-3 calorimeter resolution available for the Level-1 and Level-2 CDF triggers", IEEE Nuclear Science Symposium Conference (NSS) Record, pp. 2762 – 2764, IEEE, 2008.
- The TOTEM Collaboration "Readout and control electronics for the T2 detector of the TOTEM experiment, IEEE Nuclear Science Symposium Conference (NSS) Record, pp. 1391 – 1397, IEEE, 2008.
- Canepa, A. et al., "Level-3 Calorimetric Resolution available for the Level-1 and Level-2 CDF Triggers", Proceedings of the Topical Workshop on Electronics for Particle Physics, TWEPP 2008, pp. 561 – 565, CERN, 2008.
- Amerio, S. et al., "The GigaFitter for fast track fitting based on FPGA DSP arrays", Nuovo Cimento della Societa Italiana di Fisica B, 122 - 6-7, pp. 649 – 654, Italian Physical Society, 2008.
- Amerio, S. et al., "The GigaFitter for fast track fitting based on FPGA DSP arrays", IEEE Nuclear Science Symposium Conference (NSS) Record 3, pp. 2115 – 2117, IEEE, 2007.
- Bhatti, A. et al., "Level-2 Calorimeter Trigger Upgrade at CDF", IEEE 15th Real-Time Conference Record, pp. 1 – 4, IEEE, 2007.
- The TOTEM Collaboration, "The TOTEM electronics system", TWEPP-07 Topical Workshop on Electronics for Particle Physics Record, pp. 205 – 210, CERN, 2007.



IPZS. SPA. - OFF. CV. - ROMA



PISA, 4 DICEMBRE 2006

DIPLOMA N. 209731

A TUTTI GLI EFFETTI DI LEGGE.

IL PRESENTE DIPLOMA VIENE RILASCIATO

Mario Fasfueh
IL RETTORE

(CLASSE DELLE LAUREE SPECIALISTICHE IN INGEGNERIA ELETTRONICA)

INGEGNERIA ELETTRONICA

LA LAUREA SPECIALISTICA E LA QUALIFICA ACCADEMICA DI DOTTORE MAGISTRALE IN

NATA A COPERTINO (LE) IL 10 MARZO 1978

Virginia Greco

A

IN NOME DELLA LEGGE CONFERIAMO

VISTO IL RISULTATO DELLA PROVA FINALE SUPERATA IL 19 OTTOBRE 2006

VISTI GLI STUDI COMPIUTI

VISTO LO STATUTO E IL REGOLAMENTO DIDATTICO DI ATENE

Prof. Marco Fasquati

NOI MAGNIFICO RETTORE

UNIVERSITÀ DI PISA

REPUBBLICA ITALIANA





REPUBBLICA ITALIANA
UNIVERSITÀ DI PISA

NOI MAGNIFICO RETTORE

Prof. Marco Pasquali

VISTO LO STATUTO E IL REGOLAMENTO DIDATTICO DI ATENEIO
VISTI GLI STUDI COMPIUTI
VISTO IL RISULTATO DELLA PROVA FINALE SUPERATA IL 13 DICEMBRE 2004
IN NOME DELLA LEGGE CONFERIAMO

A

Virginia Greco

NATA A COPERTINO (LE) IL 10 MARZO 1978

LA LAUREA E LA QUALIFICA ACCADEMICA DI DOTTORE IN
INGEGNERIA ELETTRONICA
(CLASSE DELLE LAUREE IN INGEGNERIA DELL'INFORMAZIONE)

IL PRESENTE DIPLOMA VIENE RILASCIATO
A TUTTI GLI EFFETTI DI LEGGE.
DIPLOMA N. 152252

PISA, 25 FEBBRAIO 2006

IL RETTORE

Marco Pasquali

16 GIU. 2011

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Prof. n. 001263

DELIBERA DI ISCRIZIONE NELL'ELENCO DEI PUBBLICISTI

Il Consiglio dell'Ordine dei Giornalisti della Toscana, nella sua riunione del 14 giugno 2011,

vista la domanda presentata in data 29 aprile 2011 da Virginia Greco
nata a Copertino (LE) il 10.03.1978
residente a Pisa in Via Mariscoglio, 8

visti gli articoli 1 e 35 della Legge 3.2.1963 n.69 e dell'art. 34 del suo Regolamento di esecuzione (DPR n.115/1965, n.212/1972, n.649/1976, n.384/1993);

accertata l'esistenza dei requisiti di cui all'art. 31 della suddetta Legge;

vista la documentazione comprovante l'effettivo esercizio di attività giornalistica nell'ultimo biennio;

vista la dichiarazione del direttore responsabile dei periodici on-line "Terranauta.it" e "Il Cambiamento";

esaminati i servizi e riscontratone il carattere giornalistico;

vista la documentazione fiscale relativa ai compensi percepiti;

preso atto della partecipazione al corso di formazione per aspiranti pubblicisti tenutosi a Livorno nei giorni 7, 14 e 21 maggio 2011

DELIBERA

di iscrivere **VIRGINIA GRECO**

nell'albo dei Giornalisti – ELENCO PUBBLICISTI – di questo Ordine Regionale a decorrere dal **14 giugno 2011**.



IL PRESIDENTE
(Dott. Carlo Bartoli)

To whom it may concern

I am applying for this position in the ATLAS-FTK group because I believe it is a perfect match for my skills and expertise, and would allow me to keep pursuing a career at the intersection of electronic engineering and physics.

I have a sound background in electronics and microelectronics, acquired during my undergraduate and graduate studies, as well as in experimental physics, due to my training as a doctoral student at CERN and to my work within the CDF experiment (at Fermilab). I have also gained a broad experience in the development and testing of electronic systems, instrumentation, and detectors for physics experiments.

If selected as recipient of this Marie Curie fellowship, I would take shared responsibilities for the commissioning of the Fast Tracker for ATLAS, leveraging on my previous experience as co-leader of the installation and commissioning of the T2 sub-detector for the TOTEM experiment, as well as of the trigger system of the whole experiment.

My knowledge of FPGA technology, design, simulation and implementation will represent a strong base for understanding the FTK system and rapidly become a key element of the project group. I would also build on my expertise in trigger and data taking in order to carry out all the development, testing, and optimization activities required to commission and install the new FTK by the scheduled time.

I am willing to work in a top-level, dynamic, and international environment, as well as to take on responsibilities within a research collaboration, as demonstrated by the fact that I have been technical coordinator of a EU funded project (about hadron-therapy) and that I am currently coordinating the activities of a research group dedicated to the development of detectors with internal gain, within the CERN RD50 Collaboration.

Finally, I would really welcome the opportunity to join the ATLAS-FTK group and, if selected for this job, I would embrace the new challenge with determination, enthusiasm, and a result-oriented attitude.

Letter of motivation - Job Reference: PH-DI-2015-23-LD

I am applying for this position because I believe it is a perfect match for my skills and expertise, and would allow me to pursue a career at the intersection of physics and medical science.

My experience is fully compatible with the requirements of this post. I have Bachelor's and Master's degrees in Engineering, along with a Ph.D. in Experimental Physics. In 2011 I was offered the position of Technical Coordinator of an EU funded Marie-Curie project, within the KT Division of CERN. The project, called PARTNER, was focused on applications of physics and engineering to the medical field. In particular, it trained young researchers willing to become experts in oncologic hadron-therapy. Working in this project, I acquired knowledge of cutting-edge technologies applied in the field of medical imaging, diagnostic, and treatment of cancer, as well as of biomedical physics and radio-biology.

As a member of the ENLIGHT network, I was in contact with researchers working at many institutions and within different professional communities, so I had the opportunity to improve my ability to foster public relations in an interdisciplinary and international environment. I also participated to the conception and writing of project proposals, I gave lectures about medical physics, I was involved in dissemination activities and in the organization of the ICTR-PHE 2012 International Conference.

If selected for this position, I will take joint responsibilities to drive a research program in the field of physics application to the medical field, leveraging on my past experience as technical coordinator of the PARTNER project and my current appointment as coordinator of the activities of a research group dedicated to the development of detectors with internal gain, within the CERN RD50 Collaboration.

Finally, I would really welcome the opportunity to work both at CERN and at the University of Geneva as a scientist specialized in medical physics, and I would embrace the new challenge with determination, enthusiasm, and a result-oriented attitude.

Virginia Greco

Background

I have a sound background in **electronics and microelectronics**, acquired during my undergraduate and graduate studies, as well as in **experimental physics**, due to my training as a doctoral student at CERN. I have also gained a broad experience in the development and testing of electronic systems, instrumentation, and detectors for experiments of physics, because my career has been focused on these subjects since the very beginning.

I held a **Bachelor's degree in Electronic Engineering** and a **Master's degree in Microelectronic Systems and Technologies** from the University of Pisa (Italy). My Master thesis work was focused on MEMS, in particular on modeling, simulation, and characterization of electrostatic micro-mirrors for optical cross-connect switch. Immediately after graduation, I got the official **Qualification of Electronics Engineer** by the Italian Association of Engineers.

Early stage of my career: INFN, FERMILAB, CERN

As a fresh graduate, I entered **INFN (Italian National Institute of Nuclear Physics)** and started to work on the development of electronic systems for experiments of physics. I traveled regularly to **FERMILAB** (laboratory of high energy physics located near Chicago, US) and **CERN** (the European Center for Research in Nuclear Physics, close to Geneva, Switzerland), where I had the unique opportunity to apply my knowledge in electronics to different physics experiments (CDF and TOTEM), which are highly demanding in terms of performances, complexity, speed, and flexibility.

When working at **FERMILAB**, I entered the **CDF experiment**, connected to the Tevatron particle accelerator. As the Tevatron luminosity increased in the last years of its running time, a more sophisticated selection strategy was required, in order for CDF to be efficient in selecting rare events among a very huge background. To deal with this problem, CDF pushed the offline calorimeter algorithm reconstruction resolution up to the Level 2 and the Level 1 of the trigger (i.e. particle track selection) system, increasing the efficiency. Moreover, a new more efficient event-selection algorithm was implemented at Level 2. Two related

upgrades of the experimental apparatus were necessary. A new hardware path was assembled, which used general purpose VME electronic boards, equipped with Altera FPGA devices.

At the same time, a new generation track-fitter for the Silicon-Vertex-Trigger (SVT) at CDF was developed. The SVT is made of two pipelined processors: the associative-memory, finding low precision tracks; and the Track-Fitter, refining the track quality with high-precision fits. The new track fitter (GigaFitter), able to perform more than a fit per nanosecond, was based on FPGA technology.

- My responsibilities within these upgrades of CDF consisted in **the implementation of trigger algorithms** by using FPGA's (VHDL coding, simulation, programming, testing in the real system), performing **electronic tests on new dedicated hardware**, and commissioning it.

Ph.D. in Physics at CERN

Once already involved in research in this field, I enrolled in a **Ph.D. in Physics at the University of Siena (Italy)** and the following year I was selected to be **part of the prestigious "Ph.D. Program" of CERN**. It implied training in physics and electronics, and development of a doctoral thesis within one of the LHC experiment (TOTEM).

TOTEM is one of the experiments built up with **LHC (Large Hadron Collider)**, and is made up of three sub-detectors: Roman Pots (elastic detectors, located in the tunnel), T1 and T2 (inelastic telescopes, hosted in the CMS cavern).

Along the years as a member of the TOTEM Collaboration, I had the opportunity to work on different topics within the experiment. I can roughly distinguish three phase in my Ph.D. work:

First Phase

- My activity was focused on: the **development and testing of** some of the **front-end electronic boards** for the T2 sub-detector of the TOTEM experiment; the installation and the commissioning of the system. In

particular, I was responsible for the design and testing of the Horseshoe board, the 11th Card and the CCUM Carrier board.

- I also took part to **large campaigns of testing of one of the sub-detectors** of the T2 telescope, where GEM (Gas Electron Multiplier) chambers – used to detect the passing particles – were to be integrated with electronics for read-out and trigger. Each GEM chamber is mounted on one Horseshoe card that carries readout chips; the signal coming out from a group of 10 GEM chambers are collected by the 11th Card, which provides the interface to the outside world. The system is quite complex because of the huge amount of channels and data to be processed and delivered, as well as for the extreme working conditions (exposure to high levels of radiations; high rate of events; mechanical constraints; difficult access to the apparatus).
- I was **deputy coordinator** of the installation and commissioning of the T2 sub-detector in the underground cavern at LHC: as a consequence, I was required to interact continuously with the management of my experiment, as well as with the management of the CMS experiment, because the two apparatus share the same underground facilities. While leading some phases of the installation, I managed the work of the technical staff giving support for the activities in the CMS cavern and the LHC tunnel.
- I performed **tutoring activities** by supervising the work of two ‘summer students’ (involved in the CERN summer research program for undergraduate students) and the thesis activities of a graduate student in Physics of the University of Siena.

Second phase

- I took responsibilities for the **design of part of the electronics and the development of the selecting algorithms for the trigger system of the whole experiment**. It implied both conceiving the selection strategy and implementing it in the FPGA devices of the trigger system. Testing and commissioning was also required.

Third phase

- I focused on **evaluating the performances of the trigger system** of the T2 sub-detector. In order to measure the efficiency of the trigger system and the selecting algorithms, I analyzed real data taken during the activity of the LHC.
- Thanks to the trigger system that I developed, it was possible to **select and store essential data**, the analysis of which allowed **very important physics measurements** performed with unprecedented precision and range extension, such as the proton-proton total, elastic, and inelastic cross-sections.

A full description of the electronic and trigger systems of TOTEM, as well as of the trigger algorithms, their implementation, and a primary evaluation of their efficiency (on the base of real data) can be found in my Ph.D. thesis and in the article “The TOTEM trigger System”, which at the moment is going through publication process. The very relevant results of the measurements performed by applying such trigger algorithms (and electronics) are extensively explained through several articles (see my CV). I am coauthor of these articles because of the essential role played by the trigger in selecting the analyzed event; moreover, the trigger efficiency values are used to estimate the precision of the results.

During these years of work in research, besides publishing many **articles in peer-reviewed journals**, I had the opportunity to attend various conferences, and present my work in **international conventions, workshops, and collaboration meetings**.

Technical Coordinator of the EU funded project called PARTNER (at CERN)

In September 2011, while writing my thesis report, I was **offered the position of Technical Coordinator of an EU funded Marie-Curie project**, within the **Knowledge Transfer Division of CERN**.

The project, called PARTNER, was focused on applications of physics and engineering to the medical field and involved **12 European Research Institution or**

Companies, 22 doctoral students and 3 post-doctoral researchers. In particular, the project aimed at the creation of the next generation of experts in oncologic hadron-therapy, which is a technique that uses the energy of charged particles (protons and some heavy ions) to destroy cancer cells. The article 12 of my CV, of which I am coauthor, explains this treatment technique and introduces the ENLIGHT network, under the umbrella of which the PARTNER project was developed.

- As a technical coordinator of the project, I had the opportunity to:
 - extend my knowledge towards the field of medical physics;
 - acquire management expertise;
 - enter in close contact with researchers working in different institutions and research centers, as well as in various scientific fields: medical and particle physics; radio-biology; accelerator and detector technologies; electronics and software engineering;
- I was also involved in the **dissemination and outreach** activities of the group;
- I gave **lectures** about medical physics and technology transfer to high school students and physics teachers (education programs of CERN);
- I was an **active member of the Organizing Committee of the ICTR-PHE 2012 International Conference**, held in Geneva, in February 2012.

Present work at the National Centre of Microelectronics (IMB-CNM, CSIC)

Since early 2013, I am part of the **Radiation Detectors Group at the National Centre of Microelectronics of Barcelona** (IMB-CNM, CSIC). Here I am pursuing a career at the intersection between electronics engineering and physics, by applying my knowledge in electronics and micro-electronics, as well as the expertise in experimental physics and detector technology acquired during my years of work at CERN, INFN and FERMILAB.

- My present research activity is focused on the study, development, and characterization of **silicon radiation detectors for particle and nuclear physics experiments, for medical imaging, and for dosimetry**. I am involved in the design and simulation process, as well as in the phase of characterization and evaluation of the performances of the detectors after fabrication.
- **Radiation effects** on the detectors are also studied, by performing a number of measurements on the devices after irradiation with neutrons and protons (the irradiations are carried out in specific facilities abroad).
- I am also involved in the **development of electronic systems** for reading out signals produced in the detectors, and evaluate their performances.

After less than two years within the Radiation Detector Group at CNM, I am fully integrated in the research work of the team, I am involved in various projects, and I have the responsibility of a number of tasks and activities.

I have acquired a good knowledge of the different technologies used to fabricate silicon radiation detectors, of their strength and critical aspects, of their applications, as well as about different methods of testing, characterization, and integration with electronics.

I have also had the opportunity to participate **in international workshops and meetings** in the field of radiation detectors, and 5 **publications** (of which I am co-author) have been published or submitted to peer-reviewed journals.

- My work on semiconductor radiation detectors at CNM is developed within the **CERN RD50 Collaboration**. It means that I keep pursuing a research career within an international, high level and competitive environment. In 2014, at the 24th RD50 Workshop held in Bucharest (Romania), the Collaboration Board appointed me as **Coordinator of the RD50 working group developing detectors with intrinsic multiplication (LGAD Group)**.
- In order to work with radiations and in a potentially radio-active environment, I was extensively formed in the field of radiation protection. In March 2013, I got the official **License of “Supervisor of Radiation Installations”** from the Technical Unity of Radiation Protection (UTPR) at

the Autonomous University of Barcelona, Spain. I have also followed a refresh course on Radioprotection (organized by UTPR) in April 2014.

Communication and Outreach Activities

I held an official **License of Journalism** from the Italian National Association of Journalists and I have a wide experience in **science communication and outreach activities**. Since the moment I joined the TOTEM experiment at CERN, I brought to the attention of the collaboration members the need for a communication working group and an outreach strategy, in alignment with the other experiments of LHC at CERN. My proposal was discussed by the management and I was given the task of disseminate the activities of TOTEM throughout the community of researchers, as well as the larger general public.

The most important accomplishments I reached in this activity are:

- development (and update) of a **website for the general public and the journalists**, where: the physics goals and the technologies applied by the experiment are explained, a large photo-gallery is available; some educational material is accessible;
- publication of **articles** in the CERN Courier and the CERN Bulletin (official CERN publications);
- realization of a brochure of the experiment;
- set-up of a stable exposition in the Microcosm, a **science museum** located inside CERN;
- co-organization of public events, such as the **Open Days** and the **Researchers' Nights**.

Most important achievements

In my opinion, the **most important achievements** of my carrier up to now are the following:

1. I got a **Ph.D. in Physics at CERN** by pursuing a research work at the crossing point between particle detector physics and electronic engineering. Being **selected to take part to the prestigious CERN Ph.D. program** represents an added merit. For my thesis I developed fundamental hardware parts and algorithms (firmware code) of the electronic and trigger systems of the TOTEM experiment, which allowed performing very important physics measurements with unprecedented precision. I also collaborated to important upgrades of the **CDF experiment at FermiLab** (Chicago, US), where very quickly I became an active member of the trigger team and I was asked to take responsibilities for the future developments of the trigger system (offer that I had to refuse because incompatible with the Ph.D. work at CERN). Both experiences set my work in an **international and extremely intercultural environment**.
2. I was offered the position of **Technical Coordinator of the EU founded project PARTNER**, role which I took up to the end of the project. This job gave me the opportunity to develop management and communication skills, as well as to extend my knowledge in other research fields.
3. After less than two years of work in the **radiation detector group at CNM-CSIC**, I am fully integrated in all the activities of the group: I am involved in various projects, I took the responsibility of several tasks, and I coauthored a number of articles. I am also an active member of the **CERN RD50 Collaboration**, whose Collaboration Board appointed me as **Coordinator of the RD50 working group developing detectors with intrinsic multiplication (LGAD Group)**.
4. I was designated **coordinator of the communication and outreach activities of the TOTEM experiment**, thanks to my skills and experience in

dissemination and scientific communication. This position allowed me to work side by side to the CERN press office members, as well as the outreach coordinators of the other experiments.

5. In 2012 I was awarded the **title of “Successful Woman in Science”** from the European Commission's Directorate General for Research and Innovation. As a consequence, I am involved in EU campaigns aiming at engaging young women in science and research.

Outline of thesis work of Virginia Greco

The TOTEM experiment is made up of 3 tracking detectors: Edgeless Silicon detectors housed in Roman Pots close to the beams, Cathode Strip Chambers (Telescope1 or T1) and GEM detectors (Telescope2 or T2). Each detector covers a different pseudo-rapidity region in both forward directions at the interaction point 5 of LHC.

To generate a high-efficient trigger on elastic, diffractive and minimum bias events, the particle detectors provide fast low resolution tracking outputs using on-detector coincidence hardware. These signals are transmitted to the counting room and received by Host boards (HOST) with Opto-Receiver mezzanines (OPTORX)), containing few Field Programmable Gate Arrays (FPGAs). The FPGAs are programmable devices, which can perform algorithms on those incoming signals and then forward the result to a merger board, also equipped with an FPGA. This merger board will then combine the information from all sub-detectors to form the final trigger signal.

I am currently participating in the design of these boards. For my thesis, I would work on the trigger implementation and tests under the supervision of the TOTEM trigger project leader, Nicola Turini, my advisor at Siena University, and of the TOTEM electronics coordinator Walter Snoeys, my CERN supervisor.

At the beginning, TOTEM will run with a subset of its final detector with simple trigger algorithms. After complete installation the trigger algorithms used will evolve with time depending on the machine luminosity and the more refined physics topics. At the beginning, my work will contain the implementation of a minimal trigger algorithm defined by TOTEM for its early runs. This will require the firmware development for a subset of hardware, with simplified algorithms. We are now going to define the coding and the structure of the trigger dataflow as well as the internal combinatorial configuration of the algorithms in the FPGA.

During my thesis and also in a later stage, I will participate in the commissioning of the full trigger system, giving inputs on the compatibility of the hardware with certain trigger algorithms, searching for solutions for their implementation and developing the required firmware.

Throughout this work, continuous tests to verify the correctness of the firmware and to determine the trigger efficiencies (highly important for the total cross-section measurements) have to be performed.



Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Département fédéral des affaires étrangères DFAE



Nom:
GRECO
Prénom:
Virginia
Titre / Fonction:
**Personnel scientifique du CERN à
Genève**
Nationalité:
Italie

10.03.1978
Date de naissance

Carte de légitimation

Valable du 10.05.2012 au 31.08.2012

Le titulaire de cette carte jouit de l'immunité de juridiction dans l'exercice de ses fonctions.

Der Inhaber dieser Karte genießt Immunität von der Gerichtsbarkeit für dienstliche Tätigkeiten.

P
0513984

Virginia Greco

Signature

Geneva, 27.3.2012

To whom it may concern

Dr. (in spe) Virginia Greco has worked for several years in TOTEM participating in the design and commissioning of the front-end electronics for the T2 detector and she was also partially involved in the general trigger system. These important contributions are subject of her thesis that has now been presented.

Hence, Virginia has a sound scientific and technical background, but she also had, in parallel, from the beginning of her involvement in TOTEM a great interest in outreach activities. Communicating the complex physics goals and results to a wider public is not an easy task and needs both an understanding of the physics and a simplified way of presentation. She managed both excellently.

Virginia made TOTEM well known inside and outside of CERN due to the participation in many initiatives, like the CERN Open Days and the Researchers' Night as well as expositions in the GLOBE and in the Microcosm. To strengthen the public awareness she also organized an excellent TOTEM photo-gallery.

With her knowledge in physics and technology and her ability to communicate to the public, taking various initiatives on her own, Virginia Greco is the ideal person for your advertised Staff Position as a science communicator. Without any hesitations, I can highly recommend her.

Karsten Eggert

(Professor of Physics and former TOTEM spokesperson)

TO WHOM IT MAY CONCERN

Please find below my recommendation for Virginia Greco towards her application for the position of Communication Officer in the EU Project Office.

Virginia joined my KT-Life Sciences Section in summer 2011 to take over the technical coordination of the PARTNER, which is a Marie Curie-ITN. I was impressed at how quickly she was able to take over the new responsibilities of the project and integrate with the other members of the section. The PARTNER third annual meeting was held on the 2-4 September 2011, in Marburg together with the ULICE Mid Term Review and the ENLIGHT annual conference; this involved the whole life sciences team and Virginia had not only to work with the team but at the same time to get to know the ENLIGHT community and become familiar with the process for organising the MTR review for an Infrastructure project.

Virginia is a professional, serious and hard working scientist and at the same time she is able to present her ideas in clear and precise way both orally and in writing. She has amply demonstrated she has the necessary skills for her position in life sciences and was quickly able to start coordinating the PARTNER project and carry out all necessary tasks such the updating the website, writing the end of the year report and organising the PARTNER training courses.

Coming from both the physics and engineering background, Virginia has a sound scientific and technical experience and is familiar with working in the research and collaborative environment. In addition, her communication activities from TOTEM and the knowledge she has gained in the last year managing and coordinating the PARTNER project as well seeing first hand how to manage and prepare new EC project, she has all the qualifications and skills necessary for the position open in the EU Office. .

I highly recommend Virginia for this job position, being confident that she will be fully capable of quickly understanding and delivering with enthusiasm, creativity and commitment with what is necessary.

Manjit Dosanjh, KT-LS



Support Letter

Barcelona 23rd March, 2015

Position reference:

Full Name: Virginia Greco (133543)

Job Reference: FELL-FTK-2015-1

CERN

To Whom It May Concern at CERN

I am the supervisor of Dr. Virginia Greco during her post-doc stay at the Microelectronics Institute (IMB-CNM) of the Spanish Research Council (CSIC) since March 2013. IMB-CNM has a Radiation Detector group with large experience in design, simulation, fabrication, and characterization of radiation detectors in silicon where Dr. Greco is working. Since her arrival, she has integrated very well in the group.

After finishing her PhD. at CERN in a topic mostly related with electronic engineering, she has shown an extremely high interest in learning other different aspects of radiation detectors developed inside our group and which were not addressed during her thesis. She has been learning detector characterization, both electrically (CV and IV curves, wafer mapping) and physically with radioactive sources (Charge Collection Efficiency), detector simulation (with Sentaurus software), and also microelectronic fabrication.

Two years is not time enough to become expert in all these fields, but she has learnt fast, and she has now a broad experience in all the aspects of radiation detectors, from physical behavior to readout electronics. She became member of RD50 Collaboration and has attended several meetings during these years.

Her research during these years is focused in a new type of radiation detectors with intrinsic gain and very high radiation hardness named LGAD (Low Gain Avalanche Detectors). In the framework of this project she has prepared and presented a talk at the VERTEX conference, a paper and is preparing a new contribution for the 13th Pisa Meeting on Advanced Detectors.

She has very good abilities in communication in science and technology. Her presentations are very clear and graphically attractive, transmitting very well the information. She has also collaborated with the group in science dissemination by means social webs.



MINISTERIO
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Y COMPETITIVIDAD



Personally, she has a nice character; she has easiness to integrate in existing working groups, and is very collaborative with her colleagues. I am convinced that she is a good scientist, she works very hard. For me it has been a pleasure to work with her during this almost two years. I would recommend her for a Post-Doctoral Fellowship in the framework of Marie Skłodowska-Curie actions at CERN in the confidence she will develop satisfactorily her work.

Prof. Manuel Lozano
Head of the Radiation Detector Group IMB-CNM
Physics Science and Technology Area Coordinator
Spanish Council for Scientific Research (CSIC)

Dott. Virginia Greco

I have been her supervisor for her PhD thesis. She worked on the Totem experiment trigger. She developed the firmware of the global trigger, putting together all the information coming from three different detectors, the trigger pattern, to flag the events to our DAQ and the pattern to allow the common data tacking with CMS.

Moreover she started her experience in Totem helping me in the development of the front-end electronics of the T2 GEM detector. She designed all the boards and commissioned them in the experiment.

She showed good skills as an engineer but also she took a relevant part in developing algorithms for the experiment allowing her to get a PhD in experimental physics at the university of Siena.

After the PhD she moved first on science management field but soon she needed to be involved in real experimental physics so she joined a group developing silicon detectors.

I highly recommend her for this job for her skills but also because her scientific and professional history gives her the necessary knowledge to take an active role in this field.

Nicola Turini

University of Siena



CERN
European Organization
For Nuclear Research



Dr. Simone Giani, Ph.D.
Spokesperson TOTEM Experiment
PH Department
CERN - CH 1211
Geneva 23
Switzerland

Geneva, 20.3.2014

To whom it may concern

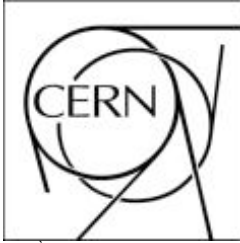
Dr. Virginia Greco has worked for several years in TOTEM while carrying out her Ph.D. in experimental physics. She participated in the design and commissioning of the front-end electronics for the T2 sub-detector and she was also involved in the development, test and commissioning of the general trigger system. These important contributions were the subject of her doctoral thesis.

Besides showing a thorough background both in engineering and physics, Virginia was able to take on responsibilities during the crucial phases of installation and commissioning of the experiment apparatus and of its trigger system.

She proved being able of dealing with different tasks and of quickly acquiring new knowledge and skills. She also demonstrated to be inclined to work in a team and to be able to report thoroughly and efficiently the progresses of her work.

With her competencies and expertise, along with her ability to take on responsibilities, Virginia Greco is an ideal person to have in a modern HEP collaboration and I can highly recommend her for this position.

S.Giani.



GENÈVE, SUISSE
GENEVA, SWITZERLAND

ORGANISATION EUROPÉENNE POUR LA RECHERCHE NUCLÉAIRE EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH

Laboratoire Européen pour la Physique des Particules
European Laboratory for Particle Physics

Ref: PH-DI-2015-23-LD

To whom it may concern

I am writing to support Virginia Greco's application for the position of a "*Scientist in the field of medical applications*".

I have known Virginia since 2011, when she came to work in my group as a technical coordinator for the EC funded Marie Curie PARTNER project. She was interested in the position as it offered her the possibility to work in multidisciplinary collaborations within a wide network of institutions and become familiar with medical applications from particle physics and learn about EC.

She very quickly integrated into the group and was able to not only to take over the coordination of the EC project, but took over responsibility of many other tasks in the life sciences section. She was responsible for all aspects of the PARTNER projects from taking care of the web-sites, internal and external communications, progress report of the project and for writing the end of the project report as well as reviewing deliverables and written scientific reports from the young researchers involved in the project.

As Life Sciences is a small group and everybody works very closely she also became familiar with Cooperation and Infrastructure funding schemes as well as writing proposals. She was a key player in ICTR-PHE 2012 Conference and therefore has experience in organizing large multidisciplinary events.

She has the ability to interact and work side-by-side with experts in different fields, and is very effective in communication and dissemination of physics and applications of physics. It was interesting to see that only could she work well in the team but was also able to work independently. She is someone who is passionate, focussed and takes her responsibility seriously and is fully committed to her work.

Virginia is an excellent physicist and her familiarity with medical applications and EC funding would make her a perfect candidate for this opening. Therefore, I strongly recommend her for this position.

Yours sincerely

Manjit Dosanjh



CERN Student Programmes

Report on Candidate

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For internal use only

Candidate:

ID: i i 49047

Virginia Greco
Universit  degli Studi di Siena

Is training compulsory part of studies ? i i Yes

Referee:

Full Professor - Director of the Dpt of Physics Angelo **SCRIBANO**
MEMORIA

Department: Physics
Institution: Universit  degli Studi di Siena
E-Mail Address: scribano@pi.infn.it

Dipartimento di Fisica
Universit  degli Studi
Via Roma, 56
58100 SIENA - Italy

Appraisal of Candidate Table:

I have known the student for 4 years, in my capacity as Totem Italian Coordinator and I would rate him/her as follows in relation to other students in comparable stages of their studies:

	Exceptional	Very Good	Good	Average	Below Average
Academic Ability	–	X	–	–	–
Practical Ability	X	–	–	–	–
Commitment to Field of Study	–	X	–	–	–
Creativity	X	–	–	–	–
Initiative	X	–	–	–	–
Maturity	–	X	–	–	–
Adaptability	X	–	–	–	–
Critical Faculty and Judgement	X	–	–	–	–

Appraisal of Candidate Report:

The candidate has followed two of my courses at University and I have tested her academic ability. The rates of the above characteristics come out from the daily observation and interaction, in particular during the development of the Totem front-end electronics cards. As an example the Horse-Shoe and the 11th cards have been very cleverly designated thanks to the candidate practical ability mixed with her creativity and initiative. The candidate is inclined to the particle experimental physics and all his technological work is always view coupled to the related physics: first the understanding of the physics and then the development of the needed hardware.



CERN Student Programmes

Report on Candidate

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Candidate:

ID: 49047

Virginia Greco
Pisa/Sienna University

Is training compulsory part of studies ? No:

Referee:

Professor Dr. Karsten Eggert	Department: Physics	CERN/PH/TOT
	Institution: Penn State University	
	E-Mail Address: karsten.eggert@cern.ch	

Appraisal of Candidate Table:

I have known the student for 1.5 years, in my capacity as TOTEM spokesperson and I would rate him/her as follows in relation to other students in comparable stages of their studies:

	Exceptional	Very Good	Good	Average	Below Average
Academic Ability	–	X	–	–	–
Practical Ability	X	–	–	–	–
Commitment to Field of Study	–	X	–	–	–
Creativity	–	X	–	–	–
Initiative	–	X	–	–	–
Maturity	–	X	–	–	–
Adaptability	–	–	X	–	–
Critical Faculty and Judgement	–	X	–	–	–

Appraisal of Candidate Report:

Virginia Greco is an outstanding engineer who despite her young age is already a key-person in TOTEM's electronic developments. She works very efficiently in our electronic group, being responsible for the design of sophisticated electronic trigger circuits, including the firmware. But she also follows the integration of these circuits into our experiment and just get them 'running'. She now wants to do her thesis work with the integration, progressive development and monitoring of our 1. level trigger based on the direct information of the three TOTEM particle detectors. The 1. level trigger and its continuous upgrade to cope with the increasing LHC luminosity is one of the most demanding challenges in TOTEM. All of us in TOTEM would be more than happy if Virginia makes the 1.level trigger her thesis subject. I want to stress that this work has to start immediately to follow the aggressive LHC schedule.

I highly recommend Virginia Greco as a CERN technical thesis student and really hope that she can start soon.
