

CURRICULUM VITAE

PERSONAL INFORMATION

Name **GAIA MARIA BERRUTI**
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Nationality ITALIAN
Date of birth 27-10-1982
Gender FEMALE

WORK EXPERIENCE

- Dates (from – to) January 2021- Today
- Name and address of employer University of Sannio
- Occupation or position held Contratto di Lavoro Autonomo di Diritto Privato
- Main activities and responsibilities Development of innovative technologies for realization and validation of fiber optic-based devices for high-payload loco-regional drug release

- Dates (from – to) December 2020- January 2021
- Name and address of employer CeRICT (Centro Regionale Information Communication Technology srl)
- Occupation or position held Contratto di Collaborazione Coordinata e Continuativa
- Main activities and responsibilities Development of innovative technologies for identification, monitoring, remediation of natural and anthropogenic contamination sources within the research project named MARINE HAZARD

- Dates (from – to) January 2019- June 2020
- Name and address of employer CeRICT (Centro Regionale Information Communication Technology srl)
- Occupation or position held Contratto di Collaborazione Coordinata e Continuativa
- Main activities and responsibilities Development and characterization of high payload fiber optic devices for drug-delivery in human body within the research project named NANOCAN- Nanofotonic per la lotta al cancro.

- Dates (from – to) January 2016- December 2018
- Name and address of employer CERN-European Organization for Nuclear Research (Geneva)
- Occupation or position held Fellow Researcher in the Experimental Physics Department-Detector Technology group at CERN
- Main activities and responsibilities Development and characterization of optical fiber sensors based on Long Period technology for relative humidity measurements in high energy physics detectors.

- Dates (from – to) July 2015 –December 2015
- Name and address of employer University of Naples Federico II (Naples) in collaboration with CERN-European Organization for Nuclear Research (Geneva)
- Occupation or position held Project Associate in the Physics Department-Detector Technology group at CERN
- Main activities and responsibilities Development and testing of optical fiber-based sensors for dosimetry applications

- Dates (from – to) July 2012- July 2015
- Name and address of employer Optoelectronic Group - Engineering Department of University of Sannio (Benevento) and CERN-European Organization for Nuclear Research (Geneva)
- Occupation or position held PhD student Associate in the Physics Department-Detector Technology group at CERN
- Main activities and responsibilities Development and testing of optical fiber sensors for relative humidity measurements in high energy physics experiments

- Dates (from – to) June 2012- July 2012

- Name and address of employer
OPTOSMART Optoelectronic and Smart Systems (Naples) in collaboration with CERN-European Organization for Nuclear Research (Geneva)
- Occupation or position held
Project Associate in the Physics Department-Detector Technology group at CERN
- Main activities and responsibilities
Testing optical fiber-based sensors and optoelectronic systems at CERN
- Dates (from – to)
September 2011- March 2012
- Name and address of employer
Optoelectronic Group - Engineering Department of University of Sannio (Benevento) in collaboration with CERN-European Organization for Nuclear Research (Geneva)
- Occupation or position held
Project Associate in the Physics Department-Detector Technology group at CERN
- Main activities and responsibilities
Development and testing of humidity sensors based on Fiber Bragg Gratings Technology for high energy physics applications
- Dates (from – to)
January 2011- June 2011
- Name and address of employer
Optoelectronic Group - Engineering Department of University of Sannio (Benevento) in collaboration with CERN-European Organization for Nuclear Research (Geneva)
- Occupation or position held
Stagiaire in the Physics Department-Detector Technology group at CERN
- Main activities and responsibilities
Development and testing of humidity sensors based on Fiber Bragg Gratings Technology for high radiations experiments running at CERN
- Dates (from – to)
January 2009-March 2009
- Name and address of employer
Engineering Department of University of Sannio (Benevento)
- Occupation or position held
Part-time Associate in the Engineering Department of University of Sannio (Benevento)
- Main activities and responsibilities
Implementation and application of the concept of Quality inside the Departments of University of Sannio in respect of UNI-EN-ISO standards
- Dates (from – to)
September 2008-December 2008
- Name and address of employer
Optoelectronic Group - Engineering Department of University of Sannio (Benevento)
- Occupation or position held
Project Associate in the Optoelectronic Group - Engineering Department of University of Sannio
- Main activities and responsibilities
Testing of chemical sensors based on Fiber Bragg Gratings Technology for environmental monitoring

EDUCATION AND TRAINING

- Dates (from – to)
July 2012- July 2015
- Name and address of employer
Optoelectronic Group - Engineering Department of University of Sannio (Benevento) in collaboration with CERN-European Organization for Nuclear Research (Geneva)
- Type of business or sector
Experimental Research
- Occupation or position held
PhD student
Title of the thesis: "Optical fiber sensors for relative humidity measurement in HEP detectors"
- Dates (from – to)
2006-2011
- Name and type of organization providing education and training
University of Sannio- School of Automation Engineering (Benevento)
- Principal subjects/occupational skills covered
Design, development, implementation, management of automation systems for manufacturing plants, industrial processes, distribution networks, and environmental systems
- Title of qualification awarded
Master's Degree in Automation Engineering
Title of the thesis: Fiber optic humidity sensors with radiation hardness capability for high energy physics application at CERN
- Dates (from – to)
January 2008- August 2008
- Name and type of organization providing education and training
KTH, Royal Institute of Technology (Stockholm)
- Principal subjects/occupational skills covered
Introduction to methodology for analysis and modelling of systems and methods for design and synthesis of feedback controllers; understanding of the main results in optimal control
- Title of qualification awarded
Erasmus student
- Dates (from – to)
2001-2006

- Name and type of organization providing education and training University of Sannio- School of Computer Science Engineering (Benevento)
- Principal subjects/occupational skills covered Introduction to programming languages, hardware architecture and construction; network design and engineering; software engineering; software tools and packages
- Title of qualification awarded Bachelor's Degree in Computer Science Engineering
Title of the thesis: Optical SnO₂-coated sensors for environmental monitoring applications

SUPPLEMENTARY EDUCATION AND TRAINING

- Dates (from – to) June 2013, 2 weeks
- Name and type of organization providing education and training CERN-European Organization for Nuclear Research (Geneva)
- Principal subjects/occupational skills covered Talent Summer School 2013 – Training for career development in high radiation Environment technologies
Topics: Development of very radiation hard precision pixel sensors; radiation-hard high-density electronics and interconnection with sensors; new mechanical integration methods; detector performance and system integration; Business training; complementary skills training.
- Dates (from – to) June 2013, 1 week
- Name and type of organization providing education and training CERN-European Organization for Nuclear Research (Geneva)
- Principal subjects/occupational skills covered 3rd EIRO forum School on Instrumentation
Topics: Principles of radiation detection and detector technologies; introduction to detector electronics and data acquisition; detector systems and techniques for high energy physics, experimental setups, optics and detectors for neutrons and synchrotron radiation applications
- Dates (from – to) October 2012, December 2012
- Name and type of organization providing education and training CERN-European Organization for Nuclear Research (Geneva)
- Principal subjects/occupational skills covered General and Professional French course (60 hours)
- Dates (from – to) April 2006
- Name and type of organization providing education and training European Computer Driving License
- Principal subjects/occupational skills covered

PUBLICATIONS FOR JOURNALS

- “Radiation hard humidity sensors for high energy physics applications using polyimide-coated fiber Bragg gratings sensors”
G. Berruti, M. Consales, M. Giordano, L. Sansone, P. Petagna, S. Buontempo, G. Breglio, A. Cusano
In **Sensors and Actuators B: Chemical**, Volume 177, February 2013, Pages 94-102, ISSN 0925-4005.
- “Radiation hard polyimide-coated FBG optical Sensors for relative humidity monitoring in the CMS experiment at CERN”
A. Makovec, G. Berruti, M. Consales, M. Giordano, P. Petagna, S. Buontempo, G. Breglio, Z. Szillasi, N. Beni, A. Cusano
In **Journal of Instrumentations**, 9, C03040 (2014).
- “Nanoscale TiO₂-coated LPGs as radiation-tolerant humidity sensors for high-energy physics applications”
M. Consales, G. Berruti, A. Borriello, M. Giordano, S. Buontempo, G. Breglio, A. Makovec, P. Petagna and A. Cusano
In **Optics Letters**, 39, 14 (2014)
- “A Comparative Study of Radiation Tolerant Fiber Optic Sensors for Relative Humidity Monitoring In High Radiation environments at CERN”
G. Berruti, M. Consales, A. Borriello, M. Giordano, S. Buontempo, A. Makovec, G. Breglio P. Petagna, and A. Cusano
In **IEEE Photonics Journal**, 6.6:1-15 (2014)
- “One year of FBG-based thermo-hygrometers in operation in the CMS experiment at CERN”
G. Berruti, P. Petagna, S. Buontempo, A. Makovec, Z. Szillasi, N. Beni, M. Consales and A. Cusano
In **Journal of Instrumentation** 11.03, P03007 (2016)
- “Analysis of uncoated LPGs written in B-Ge doped fiber under proton irradiation for sensing applications at CERN”
G. Berruti, T. F. P. Das Neves, M. Consales, A. Boniello, P. Vaiano, G. Quero, P. Petagna, and A. Cusano
In **Scientific reports** 10, 1, (2020)

CONFERENCES AND WORKSHOPS

- “Radiation hard humidity sensors for high energy physics applications using polyimide-coated Fiber Bragg Gratings sensors”
In **IEEE 2011 Conference**
Oral presentation
- “Radiation hard polyimide-coated Fiber Bragg Grating sensors for humidity monitoring in high energy physics applications”
In **XVII Annual Conference of the Italian Association for Sensors and Microsystems AISEM 2013**
Oral presentation
- “Radiation hard humidity sensors based on polyimide-coated fiber Bragg gratings”
In **Fifth European Workshop on Optical Fiber Sensors 2013**
Oral presentation
- “Multifunctional Fiber Optic Sensors for High Energy Physics Experiments at CERN”
In **Frontiers in Optics- OSA’s 97th Annual meeting, Session FiO5: Optical Fiber Sensing 2013**
Invited oral presentation
- “High-sensitivity metal oxides-coated long-period fiber grating sensors for humidity monitoring in high-energy physics applications”
In **SPIE Photonics Europe 2014**
Oral presentation
- “Radiation tolerant FBG thermo-hygrometers for relative humidity detection in the CMS experiment at CERN”
In **Third Mediterranean Photonics Conference 2014**
Oral presentation
- “Radiation tolerant humidity sensors based on nano-scale TiO₂-coated LPGs for high-energy physics applications”
In **Third Mediterranean Photonics Conference 2014**
Oral presentation
- “Radiation hard fiber optic thermo-hygrometers for relative humidity detection in the CMS experiment at CERN”
In **OFS2014 23rd International Conference on Optical Fiber Sensors**
Poster
- “High-sensitivity humidity sensors based on TiO₂-coated long period fiber grating for high-energy physics applications”
In **OFS2014 23rd International Conference on Optical Fiber Sensors**
Oral presentation

- “Fiber optic sensors for relative humidity monitoring in High Energy Physics applications”
In **Fotonica AEIT Italian Conference 2014**
Oral presentation
 - “Radiation tolerant fiber optic thermo-hygrometers for aerospace applications”
In **Metrology for Aerospace (MetroAeroSpace) 2014**
Oral presentation
 - “Radiation Tolerant Fiber Optic Humidity Sensors for High Energy Physics Applications”
In **EWSHM-7th European Workshop on Structural Health Monitoring 2014**
Oral presentation
 - “Radiation tolerant fiber optic sensors for long-term relative humidity monitoring in the CMS experiment”
In **Forum on Tracking Detector Mechanics 2015**
Oral presentation
 - “Fiber optic-based sensors for relative humidity monitoring in the experiments running at CERN”
In **Forum on Tracking Detector Mechanics 2017**
Oral presentation
- “Radiation Sensitivity of Long Period Gratings written in B-Ge doped fiber under proton irradiation at CERN”
In **OFS2014 26th International Conference on Optical Fiber Sensors**
Poster

**PERSONAL SKILLS
AND COMPETENCES.**

MOTHER TONGUE
OTHER LANGUAGES
Self-assessment

ITALIAN

European level (*)

English

French

Understanding		Speaking				Writing	
<i>Listening</i>		<i>Reading</i>		<i>Spoken interaction</i>		<i>Spoken production</i>	
(C1)	Proficient user	(C1)	Proficient user	(C1)	Proficient user	(C1)	Proficient user
(A2)	Basic user	(A2)	Basic user	(A2)	Basic user	(A2)	Basic user

(*) [Common European Framework of Reference for Languages](#)

**TECHNICAL SKILLS
AND COMPETENCES**

Operating Systems: Microsoft Windows, Mac OS X
Microsoft Office and Internet
Additional Programs: Matlab, Origin Pro, Latex, Adobe Acrobat
Programming Languages: C, Java

ORGANIZATIONAL SKILLS

Well-organized and methodical person with problem-solving attitude and strong sense of responsibility. Ability to establish and maintain good relations/friendship with people of different national and cultural backgrounds at work as well as in everyday life; inclination to work in team and ability of quickly adaptation to new situations. Optimistic and positive person in everyday life.

DRIVING LICENCE(S)

Driving licence B

PRIVACY

1. Autorizzo il trattamento dei miei dati personali presenti nel cv ai sensi del Decreto Legislativo 30 giugno 2003, n. 196 "Codice in materia di protezione dei dati personali" e s.m.i., e del GDPR (Regolamento UE 2016/679).
2. Autorizzo il trattamento dei miei dati personali ai sensi del D.lgs. 196 del 30 giugno 2003 e del GDPR (Regolamento UE 2016/679) ai fini della ricerca e selezione del personale.
3. Autorizzo alla pubblicazione integrale del curriculum e di tutti i miei dati personali inclusi ai sensi del D.lgs. 196 del 30 giugno 2003 e del GDPR (Regolamento UE 2016/679) ai fini della pubblicità legale (Albo) e della Trasparenza Amministrativa (D.lgs. 33/2013 e successive modifiche e integrazioni).

DICHIARAZIONE SOSTITUTIVA DI CERTIFICAZIONE (art. 46 e 47 D.P.R. 445/2000)

La sottoscritta, consapevole che le dichiarazioni false comportano l'applicazione delle sanzioni penali previste dall'art. 76 del D.P.R. 445/2000, dichiara che le informazioni riportate nel seguente curriculum vitae, redatto in formato europeo, corrispondono a verità.