

Europass Curriculum Vitae



Personal information

First name(s) / Surname(s) **Giovan Battista Preve**

Address(es) [Redacted]

Telephone(s) [Redacted] [Redacted]

E-mails [Redacted]

Nationality Italian

Date of birth 17 December 1962

Gender Male

Work experience

Dates **September 2013 – present days**

Occupation or position held
 Photonic Packaging Manager at CNIT Pisa (part time 75%)
 Photonic Packaging Area Manager at NTC Valencia (part time 25%)
 Technical Italian Reference at IEC (international Electrotechnical Commission) for SC 86C WG4 on PIC packaging standardisation.
 Affiliate researcher to TECIP of Scuola Superiore Sant'Anna in Pisa

Main activities and responsibilities at CNIT
 Start up and management of the INPHOTEC Silicon Photonics Packaging Lab including the infrastructure and the set up of a semi-automatic complete assembly prototype line for photonic component as well the study, design and implementation of advanced technologies for automated coupling and pluggable solution. Cooperation and commercial activities on packaging developments with ST Microelectronics, Huawei, Ericsson and others were signed. Small-scale productions were realized. Participation to European projects TERABOARD and ROAM as packaging partner.

Main activities and responsibilities at NTC
 Area manager of the photonic Packaging Lab that I started up in the previous years (see below details).

Activities as Affiliate researcher to TECIP
 Lecturer of the 30-hour course "Photonic Integrated Circuits Packaging" inside the MAPNET program (Master on Photonic Network Engineering) with TUB Berlin (Germany), Osaka University (Japan) and Aston University (UK). Consulting activities.

Name and address of employer
 CNIT – National Laboratory of Photonic Networks – Via Giuseppe Moruzzi, 1 – 56124 Pisa, Italy
 NTC- Valencia Nanophotonics Technology Center – University Polytechnic of Valencia – Camino de Vera s/h – 46022 Valencia, Spain
 TECIP – Institute of Communication, Information and Perception Technologies – Via Giuseppe Moruzzi, 1 – 56124 Pisa, Italy

Type of business or sector Photonic packaging technology, R&D, automation, teaching

Dates **June 2008 to August 2013**

Occupation or position held Packaging Area Manager

Main activities and responsibilities Start up and Management of the NTC Packaging Technology Laboratories, including area infrastructure design and set up, equipment selection, purchase and installation, process development.
 Main developed process areas are: photonic components alignment and integration, multiple flip chip. Participating to several European Project on development of packaging related issues: GALACTICO, BIOTYPE, MERMIG, GAIA, NANOCAP and most recently IRIS inside FP7 and EDA (European Defense Agency) framework
 I managed different orders and contracts coming from the photonics sector industries like ST Microelectronics and Caliope, and by different important public Institution like CERN Genève, University of Southampton UK, University of Milan and others.
 In particular for ST Microelectronics, in relation to their new activity on Silicon Photonics of the MPD division, my group designed the package for their test vehicles and we developed all the relative technologies: pigtailling, die attachment, wire bonding and final assembly, including basic process testing. The prototype line is currently operative at NTC.
 I'm also co-coordinator of the Packaging Centre of Expertise "EPIXPACK" that includes Fraunhofer IZM and HHI Berlin and TUB Berlin.

Name and address of employer NTC- Valencia Nanophotonics Technology Center – University Polytechnic of Valencia – Camino de Vera s/n – 46022 Valencia, Spain

Type of business or sector Photonic packaging technology, R&D

Dates **February 2008 to May 2008**

Occupation or position held Consultant

Main activities and responsibilities Packaging process specialist, sales support on high tech package equipments and materials. I worked as support and consultancy for Packaging technologies, in particular following the main customers requests on specific equipments and packaging related issues.

Name and address of employer Electron MEC

Type of business or sector Packaging Equipment Sales and Process

Dates **March 2001 to January 2008**

Occupation or position held Optoelectronic Back End Area Supervisor

Main activities and responsibilities Start up of the packaging lab within the Pirelli Labs of the Optoelectronic Division, following the construction of the Area and the equipment installation phase.
 I was responsible for the purchasing of all the equipment and I supervised the installation work. I selected, hired and managed the people for my group (5 persons).
 Activities included: package design (thermo mechanical and optical models), technology development and first level reliability tests.
 We developed in particular all the necessary hybridization techniques, using flip-chip equipment and realizing passive alignment between receivers and waveguide and reaching a good compromise for passive alignment of Fabry-Perot laser diodes in front of tapered waveguides.
 We also installed and developed low cost polishing techniques for the silica on silicon waveguides.
 During this period my group developed a triplexer component for FTTH applications (digital and analog) and a thermal optical dispersion compensator as well as the packaging prototyping of a complete TOSA component up to 10Gbit/sec.

Name and address of employer Pirelli - Viale Piero e Alberto Pirelli, 25 - 20126 Milano, Italy

Type of business or sector Optoelectronics, Photonics Packaging

Dates **October 1998 to February 2001**

Occupation or position held Supervisor

Main activities and responsibilities In those years, I again started from the beginning the design and set up of the Packaging Lab with the purpose to realize a complete line for the study, development and the full production of a MEMS

	pressure sensor based on a silicon piezoresistive component. I had to strictly co-operate with outside services and suppliers (especially in Germany) as well as to identify proper materials and proper sub-parts. A commercial product was qualified for the Italian / European market, followed by a further development for a sensor and the stainless steel packaging for high and low pressures in harsh environment. The main technologies adopted were: wire bonding, laser welding, automatic die attachment, soldering, hermetic sealing.
Name and address of employer	Gefran Sensors - Via Sebina, 74 25050 Provaglio d'Iseo (BS), Italy
Type of business or sector	Sensors, MEMS packaging
Dates	October 1994 to September 1998
Occupation or position held	Back End Supervisor
Main activities and responsibilities	During that period, I completed the technology transfer from AT&T (see below), buying and installing the lab equipment. I was in charge of a team of 15 people, working in particular on dicing, polishing, wire bonding, laser attachment, optical alignment and pigtailling, final optical package and sealing, using high level manufacturing equipment like DISCO, K&S, NEWPORT, MICOS among others. I was liaising with suppliers and other international labs. My group developed a complete package for laser transmission and reception up to 2.4 Gbit/sec, and we implemented prototypes for passive splitters with waveguide in glass on silicon technology.
Name and address of employer	Italtel SpA - Via Reiss Romoli - Località Castelletto 20019 Settimo Milanese (Mi) – Italy
Type of business or sector	Telecom
Dates	September 1992 to September 1994
Occupation or position held	Senior Packaging Process Engineer
Main activities and responsibilities	Within a general agreement between Italtel SpA and AT&T for a Technology Transfer from USA to Italy, I spent a 2-years period at Bell Labs, Murray Hill, NJ (USA) , with the Optoelectronics Packaging Division, directed by Dr Phil Anthony and under the direct supervision of Dr. John Gates. I followed the development of the integration and hybridization processes for laser diodes, pin diodes, TIA and waveguide based on glass on silicon technology with different refractive index. I was involved with the development of packaging and pigtailling and alignment technologies of these structures. I participated to the development of a couple of products at Bell Labs: the "laser-pac" and the "pin-pac", the production being subsequently transferred to Breiningsville, PA. I also participated to the installation of the alignment benches and their adaptation to the different needs, following also the detailing of the mechanical fixtures. I also studied the properties materials such as Cu-W, Kovar, Invar, Al ₂ O ₃ , AlN and relative metallization aspects. I was also involved with reliability tests and studies. At the end of my contract I followed up with the Packaging Technology Transfer to Italtel in Italy.
Name and address of employer	Italtel SpA - Via Reiss Romoli - Località Castelletto 20019 Settimo Milanese (Mi) – Italy
Type of business or sector	Telecom
Dates	October 1992 to August 1994
Occupation or position held	Packaging process Engineer
Main activities and responsibilities	I begun my professional career within the R&D Packaging Lab of radio-link component division. The main activities were related to the study and the development of chip&wire technologies, die-attachment of microwaves components (up to 23 GHz), thermal study and design for microwaves and opto packages.
Name and address of employer	Alcatel Telettra - Via Trento, 30 – 20059 Vimercate (MB), Italy
Type of business or sector	Telecom

Education and training

Dates	1982- 1986
Title of qualification awarded	Degree in Physics
Principal subjects/occupational skills covered	Solid State Physics
Name and type of organisation providing education and training	University of Milan

Personal skills and competences

Mother tongue(s) **Italian**

Other language(s)

Self-assessment

European level(*)

English

Spanish

Understanding		Speaking		Writing	
Listening	Reading	Spoken interaction	Spoken production		
C2	C2	C2	C2	C2	
C2	C2	C2	C2	C1	

(*) Common European Framework of Reference for Languages

Published Book Chapter

- "Silicon photonics packaging automation: problems, challenges and considerations", **G.B. Preve**, book "Silicon Photonics II", Chapter 8, Springer Editor, 2016

Published Papers and Articles

- "A stable high coupling efficiency single mode laser package", MacDonald W., **Preve G.B.**, Scotti R., Doneda S., et more, AT&T review, 1994
- "Optical waveguide Variable Attenuator in Glass on Silicon technology" - Lenzi M., **Preve G.B.**, Cibirnetto L., Brunazzi S., Proceedings ECIO 1997, 8th European Conference Integrated Optics
- "Low Cost Hybrid Integration of Laser Diode on Silicon PLC for Optoelectronic Applications" - Maggi L., **Preve G.B.**, Caccioli D., Canali A., Lorenzotti S., EMPC Conference 2007
- "Advanced Smart Packaging Solution for Silicon Photonics", Lars Zimmermann, **GB Preve**, H Schroder, Tolga Tekin, Eindhoven 2008
- "Packaging of silicon photonic devices: grating structures for high efficiency coupling and a solution for standard integration", A. Hakansson, J. Marli, **GB Preve**, et others, Helios FP7 2009
- "Packaging and assembly for integrated photonics - a review of the ePIXpack photonics packaging platform", **GB Preve**, Lars Zimmermann, T. Tekin, T. Roslin, K. Landes, IEEE JSTQE 2010
- "Low profile silicon photonics packaging approach featuring configurable multiple electrical and optical connectivity", J Galan, **GB Preve**, M. Llopis, T. Tekin, Group 4 Conference 2011
- "The European Galactico project: Coherent Terabit Ethernet systems using 4 μ m rib waveguide silicon-on-insulator technology and GaAs electro-optic modulators", S. Clemens, D. Roccatto, **GB Preve** et others, IEEE Photonic Society Topical meeting 2011
- "Colorless ONU With Discolored Source and Hybrid SOI Integrated Wavelength Converter", I. Lazarou, B. Schrenk, **GB Preve** et others, IEEE Photonics Technology Letters, 2011
- "High-precision flip-chip technology for alloptical wavelength conversion using SOI photonic circuit", **GB Preve**, Lars Zimmermann, G Winzer et others, Group IV photonics, IEEE International Conference
- "Challenges for Silicon photonics Packaging", **GB Preve**, G. Chiarelli, M. Lenzi – Invited Workshop OFC/NFOEC 2012, Los Angeles, CA
- "Migrating Legacy PON Equipment towards Colorless ONU through Hybrid Integrated SOI All-Optical λ-Converter", L. Zimmermann, **GB Preve**, I. Lazarou, et others, OFC/NFOEC 2012, Los Angeles, CA

- "A Hybrid Photonic Integrated Wavelength Converter on a Silicon-on-Insulator Substrate", C. Stamatiadis, L. Stampoulidis, **GB Preve**, L. Zimmermann et others, OFC/NFOEC 2012, Los Angeles, CA
- "Fabrication and experimental demonstration of the first 160 Gb/s hybrid silicon-on-insulator integrated all optical wavelength converter", L. Zimmermann, **GB Preve**, K. Voigt, J. Kreissl et others, Optics Express 2012
- "Automation Processes for Silicon Photonics: a real case and some consideration on advanced coupling technologies", **GB Preve**, Workshop "Automated Packaging of micro-optical Modules and Lasers", Achim, 2015
- "High-precision 3D printing: fabrication of micro-optics and integrated optical packages", R. Houbertz, **GB Preve**, M. Shaw, M. Esslinger, S. Steenhusen, Photonic West 2016, San Francisco.
- "Advanced silicon photonics packaging: challenges, trends, automation and the role of the Inphotec Photonics Technology Center", **GB Preve**, invited "PIC International Conference", Bruxelles, 2016
- "Advanced silicon photonics packaging", **GB Preve**, invited 4th Huawei Innovation Day, Shenzhen, China, 2016
- "Design and Implementation of an Integrated Reconfigurable Silicon Photonics SwitchMatrix in IRIS Project", F. Testa, Lorenzo Pavesi, Claudio Oton, **GB Preve**, et others, IEEE JSTQE VOL. 22, NO. 6, 2016

PATENTS

Inventor: ISENI GIOSUE (IT); **PREVE GIOVANBATTISTA** (IT); DONEDA SERGIO (IT); (+1)
 Applicant: GEFRAN S P A (IT)
 EC: G01L1/18; G01L1/20; (+1)
 IPC: G01L9/04; G01L9/06; G01L1/18 (+13)
 Publication info: DE60031066T
 Date: 1999

Inventor: **PREVE GIOVAN BATTISTA** (IT); JOSE VICENTE GALAN (ES); TEKINTOLGA (DE), (+5)
 Applicant: UNIVERSITAT POLITECNICA VALENCIA
 Title: DISPOSITIVO PARA EL ENCAPSULADO EFICIENTE DE BAJO PERFIL DE CIRCUITOS INTEGRADOS FOTONICOS CON ACOPLO A FIBRA VERTICAL
 EC: P201031898
 Date: 2010

Social skills and competences All the skills expected from a person of my age / multicultural experience / professional background.

Organisational skills and competences See above

Technical skills and competences See above

Computer skills and competences Good knowledge / skills of most common Operating Systems / Application Packages relevant to my professional background.

Other skills and competences Singing opera/classical, acting on stage, running marathons and half marathons

Driving licence B (Italian driving licence)