

PERSONAL INFORMATION

Guido Chiaretti

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JOB APPLIED FOR

New R&D Project Proposal

WORK EXPERIENCE

Jan.1st 2019 – present Collaboration with Copernico srl to develop and implement mass production processes to deliver Pfas sensors based on Micromachining Silicon technologies and Plastic Optical Fibers.

Nov 1st 2018 – present Consultant of CNIT (Pisa) on Advanced Integrated Photonics and Optical fields (technology development, manufacturing processes, device design, assembly, characterization, applications)

Aug 1st 2000 – Oct. 31st 2018

Director of New Technologies at STMicroelectronics, Milan (Italy)

Guido Chiaretti was Director of New Technologies inside the R&D of the "Digital and Mixed processes ASIC" (DMA) Division, which is part of the Microcontrollers and Digital IC's Group (MDG) of STM, in Milan. His main research activities (from 2004 to 2018) were in the field of Silicon Photonics technology (New Si Photonics Tech. Platform design, 3D assembly of EIC on PIC with TSV and of Si Photonic Chip on wafer) applied to Optical Interconnections and Communications (High Speed 3-D Optical Transceivers, Networking and Switching), Data Center, HPC, 5G Networks, automotive and sensors as well as to the design of optical devices for several MEMS applications (Optical Sensors, Pico-projector and Lidar, both based on micro-optics and integrated optics, QRNG, Optical Quantum Simulator...)

In 2016-2017 he was member of High Level Steering Committee, a European expert group, defining the rules and preparing the new Flagship on Quantum Technologies (1 billion euro for 10 years R&D program 2018-2027).

Around 2000-2005 with his group he developed and produced the 70.000 special lasers and transceivers for the optical link of CMS, ATLAS and ALICE detectors of LHC experiment at CERN, Geneve.

In 2000 he joined STMicroelectronics to develop the Planar Lighthwave Circuits (PLC) technology on Silicon for optical switching: 32x32 optical switch Matrix based on the bubble switch effect for a US company (2000-2004).

He acted as WP Leader in several EU R&D projects coordinating the activities of several foundries (ST Crolles, Leti, Imec, Itri, Etri) and international research groups:

- *HOT (Hybrid Optomechanical Technologies), H2020 2017-2020*
- *TERABOARD (High density scalable optically interconnected Tb/s Board) H2020 2015-2018*
- *STREAMS (Silicon Photonics Transceiver and Routing technologies for High-End Multi-Socket Server Blades with Tb/s Throughput interconnect & interfaces) H2020, 2016-2019*
- *COSMICC (CMOS Solutions for Mid-board Integrated transceivers with breakthrough Connectivity at ultra-low Cost) H2020, 2015-2018*

Past EU Projects (among others) :

- *IRIS (Integrated Reconfigurable silicon photonic based optical Switch) FP7-ICT-2014-2017*
- *Plat4m (Photonic Libraries And Technology for Manufacturing) FP7-2013-2017*
- *Lab4MEMS (LAB FAB for smart sensors and actuators MEMS) FP7-2012-2016*

1 Jun 1981–1 Aug 2000

Head of Photonic Unit in Central R&D at Italtel spa, Milan (Italy)

In the early 90' he led the development of Planar Lighthwave Circuit Technology (PLC) together with Bell Labs groups at Murray Hill, NY, and Breiningsville, PA, for advanced integrated optical bi-directional 1310/1550 nm transmission modules for PON networks. Just after the successful demonstration of this device, He was in charge to manage an investment of more then 20 Billion Liras to build a technological facility (1000 m² of clean room, class 100) in Cornaredo, Milan. In the same years, working with a Russian IRE-Polus research group, he brought in Italtel the optical fiber technology to develop and produce High Power, low cost, Optical Fiber Amplifiers. This technology was the base of a start up, now IPG Photonics Corp.

In 1981 he joined Italtel Central R&D where, as head of Photonic Unit of Central R&D, developed and designed several optical active Tx and Rx (STM1-4-16) modules and passive devices for several telecommunication applications, both in transmission, switching and networking of optical fiber and free space links.

1 Jul 1977–1 Jun 1981

Researcher at CSELT, Turin (Italy)

From 1977 he was researcher of CSELT (the R&D center of the Italian telecom operator, SIP) dealing with design of the first Italian Leds and Lasers sources, based on AlGaAs/GaAs, then on InGaAsP/InP materials, and with their material and device characterization.

EDUCATION AND TRAINING

1970–1975 **Graduated in Physics** EQF level 8

at University of Milan, Milan (Italy) with an Experimental thesis on Optical Characterization of DNA structure.

PERSONAL SKILLS

Mother tongue(s) Italian

Other language(s)	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken interaction	Spoken production	
English	B2	C1	B2	B2	C1

Levels: A1 and A2: Basic user - B1 and B2: Independent user - C1 and C2: Proficient user
Common European Framework of Reference for Languages

Communication skills

The R&D activities and complex projects management with European, US, Russian and Japan teams helped me to gain good communication skills also in different cultural environments.

Organisational / managerial skills

He led, as work package leader, several european R&D teams within EU and International (in US, Japan, Asia, Russia) projects;
 Good organization skills to deal with the complexity of the R&D programs and to comply with the time, resources and cost constraints.

Job-related skills

Currently acting as Expert of EU Commission under the Expert contract number - **CTEX2015D234295-101**

Coordinator of the WG6 of CORIFI, the Italian Platform matching the structure of the European Technology Platform Photonics21

Digital competence	SELF-ASSESSMENT				
	Information processing	Communication	Content creation	Safety	Problem solving
	Independent user	Independent user	Independent user	Independent user	Independent user

Digital competences - Self-assessment grid

ADDITIONAL INFORMATION

Publications He has over 50 publications and holds more than twenty patents.

Memberships He is Senior Member of IEEE