Prof. Vittorio Curri was born in Ivrea (TO), Italy, in 1970. He earned his *Laurea* degree *cum laude* in electronics engineering in 1995 and his *Scientific Doctoral degree* (PhD) with honors in optical communications in 1999, both from Politecnico di Torino (PoliTo), Italy, both under the supervision of Prof. Sergio Benedetto.

Main assignments and career progress

Between 1999 and 2004, Prof. Curri conducted research as a postdoc at PoliTo and subsequently assumed the role of assistant professor in 2004. Currently, he holds the position of Full Professor at the Department of Electronics and Telecommunications (DET), PoliTo.

In the AY 1997-1998 he has also served as a Visiting Researcher at Stanford University with Prof. Leonid Kazovsky's group and at UC Santa Barbara with Prof. Daniel Blumenthal's group.

From 1998 to 2002, Prof. Curri served as the lead scientific advisor responsible for transferring the technology behind the optical simulator SW OptSim to Artis Software Corporation. This software had been originally developed during Prof. Curri's master's thesis and activities as a PhD student.

In 2002, RSoft Inc. acquired the OptSim software. Subsequently, in 2003, Prof. Curri, thanks to the award assigned from the city of Torino “Concorso Galileo Ferraris” for “Progetti di impresa ad elevato contenuto di conoscenza tecnologica” (ideas and business plan for high-tech company) co-founded Alps Telecommunications Software srl (ATS), a spinoff company of PoliTo. The primary goal of this spinoff was to further develop OptSim in collaboration with PoliTo and RSoft, and market the RSoft products in Europe. Prof. Curri served as the CEO and board member of ATS until 2010.

Additionally, Prof. Curri was a member of the Board of Governors of PoliTo from 2007 to 2013 and also served as a member of the board of the School of Specializing Masters at PoliTo from 2013 to 2019.

Prof. Curri is a founding member of the optical communications group (OptCom) and the PhotonLab, an optical communication and networking laboratory, at PoliTo. For both, the main promoter has been Prof. Sergio Benedetto.

In 2015, Prof. Curri established an independent research team called the Physical Layer Aware Networks (PLANET) team (planet.polito.it) within the OptCom ecosystem.

In 2017, Prof. Curri started a collaboration with the Industrial consortium Telecom Infraproject (TIP) with the role of Scientific Chair of the open source project GNPy.

Scientific activities

Prof. Curri's scientific endeavors throughout his career can be succinctly described as the development of mathematical models and simulation tools for abstracting data transport in optical networks. The primary goal has been to optimize and control the physical layer within these networks. Initially, his focus was on modeling and optimizing the transmission layer, independent of the network architecture. However, his work progressed to incorporate physical layer awareness in network control, enabling open and disaggregated network architectures.

Additionally, Prof. Curri played a pioneering role in advocating for the multi-band utilization of fiber transmission beyond the conventional C-band. This advancement may allow for a significant capacity enhancement (up to x10) in the existing fiber cable infrastructure.

Throughout his career, he has dedicated substantial efforts to technological transfer, particularly through the commercial tool OptSim. More recently, he has provided scientific guidance to the open-source project GNPy, within the TIP industrial consortium.

Prof. Curri's remarkable proficiency in the analysis and modeling of Stimulated Raman Scattering is noteworthy, as demonstrated throughout his entire career. His expertise extends to its application in the analysis, design and control of Raman amplifiers, as well as its influence on the multi-band scenario where it is the crucial inter-band effect.

In the following the main research activities are summarized by topics including further details.

- Optical transport simulation.

Until 2013, the main focus was on developing and using the OptSim simulator. Prof. Curri created OptSim as part of his master's thesis and played a key role in its evolution. He advised the company that acquired OptSim and later led a spin-off called ATS. Since 2012, he has managed the MSA between PoliTo and Synopsys that acquired th esw in 2012, providing funding and free licenses for OptSim. OptSim served as a research repository and analysis tool, enabling significant achievements like GN models whose related papers count thousands of citations. In 2019, Synopsys granted PoliTo 150 free licenses for the Photonic Suite under the Prof. Curri responsibility, promoting integration of silicon photonics, optics, and networking. These efforts successfully combined Synopsys tools with machine learning for designing and control multi-band optical switches. Activities supported by the Artis, ATS and Synopsys.

- Transmission modeling.
  Until 2008, perturbative models were used to address topics related to fiber propagation in terms of intensity modulation (parametric gain, XPM, SPM), PMD stochastic effect, and Raman amplification for pulse shaping and dispersion map optimization. Later, Prof. Curri played a key role in the development of OptSim add-on for simulation, demonstrating the impact of fiber propagation as an AWGN channel on dual polarization (DP) coherent transmission technologies. Prof. Curri also contributed to the renewed GN models, particularly in extending them to include Raman amplification. From 2015 onwards, Prof. Curri led the adaptation of the GN-model for multi-band scenarios using a disaggregated approach within the PLANET team. Since 2017, the modeling efforts have been focused on the GNPy open source project, which accurately computes Quality of Transmission (QoT) by approximating transparent lightpaths as AWGN channels. This project enables the vendor agnostic design, planning, and control of open and disaggregated networks by incorporating the GN-model for fiber propagation, amplifier and ROADM models, and stochastic models for PMD, PDL, and filtering penalties. It also supports multi-band scenarios using flex-grid flex-rate technologies. Activities funded by Cisco, TIP, NTT/NEC and EU project WON. Moreover, within a project funded by Links/SMOptics, modeling of mixed legacy 10G and DP coherent techologies was developed and within the EU funded TiFOON project the coexistence of data channels and T/F distribution was investigated. The transmission modeling topic includes a remarkable number of experimental activities resulting in extensively cited publications.
- Physical layer aware open and disaggregated multi-band networking.
  In 2015, Prof. Curri embarked on the establishment of the PLANET team, aiming to investigate the performance of fully transparent and elastic optical networks enabled by DP coherent transmission technologies. Initially, he introduced a novel Monte Carlo method called Statistical Network Assessment Process (SNAP) to assess network performance metrics by employing the abstraction of the physical layer. Subsequently, he oversaw various activities supported by Cisco to test, compare, and evaluate the networking advantages offered by different physical layer solutions, such as fiber types, hybrid Raman amplification, and diverse transceivers. In 2017, Prof. Curri commenced an analysis of the merits and drawbacks of multi-band solutions, comparing band-division (BDM) multiplexing with space-division multiplexing using fiber bundles or multi-core fibers. This topic formed the focal point of the investigations conducted within the EU-funded WON doctoral network, which started in 2019 and resulted in a notable collection of results published in conferences and journals that continue to be referenced by the community. Furthermore, these endeavors encompassed experiments carried out on the permanent open optical network lab test-bed, which Prof. Curri has been gradually establishing at PhotonLab, including the optical control based on GNPy used as PHY digital twin. As part of the EU funded projects ALLEGRO and RESTART, which commenced on January 1st, 2023, the open networking setup will serve as one of the locations to test the project outcomes from the project's partners.
- AI-assisted optical network control in partially disaggregated optical networks.

In addition to the transmission modeling and networking analyses, Prof. Curri directed the efforts of the PLANET team towards optimizing Software defined Networking (SDN) operations on the optical layer. This involved the development of the light-path computation engine (L-PCE), which determines the appropriate modulation format for a transparent lightpath, and the optical line controller (OLC), which establishes the operational parameters of the amplifiers. Both the operations can be performed by using GNPy as PHY digital twin, for which the mostly delicate side is in reliable parameters describing the network elements. These activities received funding from Cisco and underwent extensive testing on experimental setups. To enhance the accuracy of the L-PCE and optimize the effectiveness of the OLC, data-driven machine learning techniques were developed. These techniques involved modeling individual EDFA amplifiers or EDFA cascades in a line and conducting experimental tests in synergy with GNPY. Additionally, a cognitive approach utilizing probing procedures, telemetry data, and evolutionary methods was experimentally demonstrated to effectively control amplifiers for both the EDFAs on the C-band and Raman amplifiers on the C+L band. These topics will be the main focus of the task led by Prof. Curri in the EU-funded ALLEGRO project, which commenced on January 1st, 2023. Furthermore, they will also be explored within the EU-funded NESTOR doctoral network scheduled to start in 2024. Furthermore, Synopsys-funded activities involved testing the employment of machine learning for controlling photonic integrated multi-band switches.

Team leading and management capabilities

Over his entire career, Prof. Curri has shown a remarkable attitude in team leadership. As a post-doc, he already coordinated the activities in the technological transfer of the simulator OptSim. In the first decade of the 2000s, he demonstrated remarkable management capability by first promoting the establishment of the spinoff company ATS, and then managing the company as CEO. Simultaneously, Prof. Curri coordinated the simulation activities within the OptCom group, which led to outstanding publications and enabled highly innovative research results related to the GN-models. Additionally, he served as a co-tutor for 2 PhD students. In 2015, Prof. Curri began establishing the PLANET team under his unique management, and his ability as a team leader is evidenced by the numbers. Since 2015, Prof. Curri has tutored or is currently tutoring 23 PhD students, including 8 co-tutoring cases, several postdocs, and one assistant professor. Most of the Prof. Curri's PhD students has been or still are part of the PoiTo OPTICA student chapter, including government roles and organizing events, so Prof Curri has been and still is the main academic promoter of such student chapter. Furthermore, as the scientific chair of the GNPy project, Prof. Curri coordinates the activities of several industrial partners within the PSE-OOPT working group of the TIP. He has also had the honor of coordinating exceptional and groundbreaking experimental activities that validate the accuracy of GNPy, as evidenced by highly cited publications related to the project.

Fund raising

Over his entire career Prof. Curri has shown an outstanding capability in financing the academic research activities. As a postdoc, by leading the technological transfer of the simulator OptSim he granted to PoliTo 12.5% on the OptSim revenues as compensation of SW sold. In 2003-2010 the spinoff company ATS granted to PoliTo with 75 free OptSim licenses extensively used for teaching and research. Starting in 2012, Prof. Curri is the scientific responsible of the PoliTo-Synopsys MSA and related annual SOW funding research activities and 150 free OptSim licenses extended to the entire photonics suite since 2019. Since 2016, Prof. Curri is the Principal investigator of annual research contracts funded by Cisco, as well as, three party SMOptics-Links-PoliTo research contracts. Since 2018, Prof. Curri is the scientific responsible of the PoliTo-TIP MSA and related annual SOW funding research activities related to GNPy. Since 2021, Prof. Curri is the PI of a research contract jointly funded by NTT and NEC for joint experiments. Starting in June 2023, Prof Curri will be the PI of a 4-party research contract including OpenFiber, INGV, SMOptics and Polito funded by OpenFiber. In 2014-2017, prof Curri has been the PI of the PoliTo Unit of the cluster project MIE funded by the Italian research ministry. In 2019-2023, prof Curri has been the PI of the PoliTo Unit, WP leader and tutor

of three PhD students within the H2020 ITN-ETN WON, Wideband Optical Networks, GA:814276. In 2019-2022, prof Curri has been the PI of the PoliTo Unit of the H2020 EMPIR PROJECT, GA:18SIB06 TIFOON Advanced time/frequency comparison and dissemination optical telecommunication networks. In 2023-2025, Prof Curri is the PI of the PoliTo Unit and task leader of the HORIZON-CL4-2022-DIGITAL-EMERGING-01, Agile uLtra Low EnerGy secuRe netwOrks – ALLEGRO – GA: 101092766. In 2023-2026, Prof Curri is the scientific responsible of the optical communications and network activities within the NextGenerationEU partnership on "Telecommunications of the Future" (PE00000001 - program "RESTART"). Starting in 2024, Prof. Curri will be the PI of the PoliTo unit, WP leader and tutor of 2 PhD students within the HORIZON-TMA-MSCA-DN, Next generation high-speed optical networks for metro access (NESTOR). The total amount of funding raised as PI exceeds 4.5 MEU (including the projects just started) plus free software licenses whose commercial value exceeds 2 MEU. Prof. Curri has also been the recipient of hardware network elements donated or discounted corresponding to a substantial value.

Publications, reputation and professional activities for the scientific community

Throughout his entire career, Prof. Curri has authored over 400 scientific publications, more than 100 of which were published in journals. Since 2015, he has co-authored around 270 publications with colleagues from over 50 different academic and industrial institutions. In these publications, he is consistently listed as the last author, which testifies to his outstanding reputation and the substantial contributions he has made to the scientific world and industry. Prof. Curri bibliometrics is: gScholar: citations: 9200, h-i: 45; Scopus: citations: 7100, h-i: 39. Prof. Curri is part of the 2% top scientists for both the entire career and year 2022 according to Stanford ranking based on Scopus data. Starting from late 1990s, Prof Curri has continuously attended the main international conferences of the field (OFC, ECOC, ICTON, ONDM, APC, ACP, IPC, NetSoft, and others) including more than 60 oral presentations of the peer reviewed accepted contributions. He received several invitations in the mostly relevant conferences, including tutorial speeches (ICTON, ECOC, ONDM, IPC) and keynote speeches (ICTON 2020, International Conference of Electrical and Electronic Technologies for Automotive 2019, HONET 2015). Prof. Curri is part of the TPC of IEEE ICTON as track chair on multiband open optical networks, OPTICA APC-Netwoks, IEEE/OPTICA ACP as track co-chair on optical networks, IEEE NetSoft, IEEE ANTS. Prof. Curri has been guest editor of the Special Issues: "Multi-Band Optical Networks," IEEE/OPTICA Journal of Lightwave Technologies, 2022; "Open Optical Networks" IEEE/OPTICA Journal of Optical Communications and Networking, 2020; "Ultra Wideband WDM Systems," IEEE/OPTICA Journal of Lightwave Technologies, 2020. Prof. Curri is co-author of of two IEEE/OPTICA JLT best paper awards. Prof. Curri is IEEE senior member. Prof. Curri has served as Distinguish Lecturer at the Institute for Broadband Research and Innovation (IBRI), Soochow University, China, "Software-defined WDM data transport in multiband optical networks," 2020. Prof. Curri has been invited speaker at the Academic Speaker Series, Synopsys, "Abstracting PICs in a SDN context with the synergistic use of AI and Synopsys tools," 2021.

Educator and Teaching activities

Over his 24-year career (including postdoc), Prof. Curri has been the Main Lecturer or Assistant Lecturer in 66 courses (bachelor's and master's degrees), serving as the main lecturer for 43 of them. Additionally, he has served as the main lecturer for 7 courses at the PoliTo school for PhD students. Since 2019, Prof. Curri has introduced two courses at PoliTo: "Open and Virtualized Networks" for bachelor's students and "Open Optical Networks" for master's students. These courses employ a hands-on teaching method using Python and GitHub. Furthermore, Prof. Curri co-teaches the class "Internet and Social Media" to bachelor's students alongside sociologist Prof. Sara Monaci. Since 2020, he has also taught the class "Optical Transport Networks" for the school of PhD students at PoliTo. Prof. Curri has been the tutor of more than 60 master's theses. Several students mentored by Prof. Curri have achieved outstanding results in their careers, including Dr. Antonio Napoli, who is currently with Infinera, Dr. Mattia Cantono, now at Google, and Dr. Alessio Ferrari, currently working at Microsoft. Furthermore, Dr. Alessio Ferrari received the award for best PoliTo PhD student and the IEEE Photonics award for best PhD student in the EU. Additionally, Andrea D'Amico recently received the award for best PoliTo PhD student.

Prof. Curri Scientific responsibility of PoliTo research unit in projects awarded through peer-review process

1. 2014-2017: Cluster project MIE (Mobilità Intelligente Ecosostenibile), funded by the Italian research ministry
2. 2019-06/2023: HORIZON 2020 MARIE SKLODOWSKA-CURIE ACTIONS INNOVATIVE TRAINING NETWORK (ITN), EUROPEAN TRAINING NETWORK(ETN) WON, Wideband Optical Networks, GRANT AGREEMENT – 814276. Prof. Curri is:
    a. Leader of WP2.
    b. Member of the supervisory board governing the project.
    c. Member of the Training and Research Committee of the project.
3. 06/2019-2022: H2020 EMPIR PROJECT 18SIB06 TIFOON Advanced time/frequency comparison and dissemination optical telecommunication networks
4. 2023-06/2026: NextGenerationEU partnership on "Telecommunications of the Future" (PE00000001 - program "RESTART")

   The RESTART project funds all the telecommunications fields supporting 12 academic institutions and some companies for a total amount of 150 MEU and organized in subprojects. The optical subprojects is EngIneeRInG photOnic devices and systems towards a green opticaL nETwork infrasTructure fOr 6G (RIGOLETTO). Prof. Curri is the scientific responsible coordinating all the RIGOLETTO activities at PoliTo. Moreover, he is the WP leader of "WP4 – Physical-layer-aware open and green optical networks" coordinating also the included activities from other institutions, and the task leader in "WP6 – Demonstrators and prototypes of the future green sustainable optical devices, systems and networks" for "Task 6.4 - Open and disaggregated optical transport network demonstrator".

5. 2023-2025: HORIZON-CL4-2022-DIGITAL-EMERGING-01, Agile uLtra Low EnerGy secuRe netwOrks – ALLEGRO – GA: 101092766. Prof. Curri is:
    a. Scientific responsible for all the PoliTo activities in the project
    b. Task leader of "T3.4 DSP, Modelling and optical performance monitoring" in "WP3, Power-efficient end-to-end optical transport
    c. infrastructure"
6. 2024-2027: HORIZON-MSCA-2022-DN-01, NESTOR, Next generation high-speed optical networks for metro access. Prof. Curri is:
    a. Leader of WP2: Digital-twin and real-time control of physical layer
    b. Member of the supervisory board governing the project.

Prof. Curri Scientific responsibility of research projects, ruled through partnership agreements with companies and/or public private bodies

1. 2012-in progress (ref. Enrico Ghillino): PoliTo-Synopsys Master Service Agreement and annual statement of works (SOW) defining and funding research projects, first related to optical transmission only, then extended to photonics integrated circuits and ML techniques.
2. 2020-in progress: memorandum of understanding (MoU) with CesNet (CZ) to perform joint experiments (ref. Jan Kundrat)
3. 2021-in progress: Agreement with GARR (IT) for joint research activities: Balloon – Build and Automate Long Lasting Open Optical Networking (ref. Paolo Bolletta)
4. 2016-in progress: three party research activities including SMOptics-Links Foiundation-PoliTo. SMOPtics (ref: Dr. Rosanna Pastorelli) has continuously funded research projects of their interest through annual research contracts. Topics are QoT evaluation in mixed 10G/coherent optical

network segments, QoT penalties, bidirectional transmission on single fiber, inter-channel SRS effect, network architecture optimization, sensing from fiber optics infrastructure

5. 2016-in progress research projects funded by Cisco Photonics (ref: Gabriele Galimberti)
    a. 2016/2017: Next Generation Optical Networks (NGON)
    Activities focused on the use of the statistical network assessment process to explore the potentialities of the physical layer in next generation optical network
    b. 2017/2018: Physical Layer Aware Networking for Elastic Transport (PLANET)
    Development of a tool for off-line physical layer aware network assessment (OPLA) that operates on the rout space QoT statistics for different deign purposes (e.g., amplifier placent and Raman upgrade)
    c. 2018/2019: AnaLystics for PhotonIc Networks vIa Streaming Telemetry (ALPINIST)
    Research activities on machine learning techniques used to predict the optical signal to noise ratio before the lightpath deployment over an amplified line.
    d. 2020: Softwarized and Autonomous Multiband Raman Amplification Impairments-optimized (SAMURAI)
    Research activities on the development of autonomous Raman amplifier module to be used in C+L WDM optical line system: probing and pump setting
    e. 2021: SAMURAI2
    Prosecution of the SAMURAI project activities to finalize the technological transfer
    f. 2021-2022: Amplifiers Models in Optical Networking (AMION)
    Accurate EDFA modeling for design, planning and control
    g. 2022-2023: Statistical Analysis of Transmission Optical Reach Impairments (SATORI)
    Analysis of stochastic processes in optical transmission and their impact on QoT (e.g., PDL, gain ripple, lumped losses)
6. 2018-in progress (ref. Gert Grameml): PoliTo-Telecom Infraproject Master Service Agreement
    a. 18/19: SOW on GNPy extension to Raman effects
    b. 2020: SOW on GNPy testing activities
    c. 2021: SOW on GNPy flex-grid flex-rate
    d. 2022-2024: SOW on GNPy extension to multiband, modeling of PDL and filtering penalty, advanced model of transceivers, statistics of GSNR, and other topics
7. 2021-202323 NTT/NEC (ref. Hideki Nishikawa) Joint experiments testing transmission modeling for network automation.
8. 2021-2022 Technological survey for a governmental agency
9. 06/2023-6/2025: OpenFiber (ref Francesco Carpentieri) Fiber as a Sensor (FaaS)
    This project is funded by Open Fiber and includes SMOptics and INGV together with PoliTo to develop technologies for earthquake surveillance from optical network telemetry.

List of patents

1. G. Bosco, M. Visintin, P. Poggiolini, F. Forghieri, A. Carena, V. Curri, Adaptive equalization in coherent receivers using a Stokes space update algorithm, Patent US9515745B2, 2014
2. C. Fludger, T. Kupfer, F. Forghieri, P. Poggiolini, G. Bosco, A. Carena, V. Curri, Optimization of optical transmission capacity, Patent US20160142179A1, 2014
3. P. Poggiolini, A. Carena, V. Curri, F. Forghieri, Decision directed carrier phase estimation with a limiter for coherent dense wavelength divison multiplexing systems, Patent US8311417B1, 2012

Offices in the Governing bodies of national and international scientific societies

1. Member of the board of CORIFI (Coordinamento Ricerca Innovazione Fotonica Italia, AEIT) with the role of working group coordinator (WG1-ICT)

2. Member of the Scientific Board (Consiglio Scientifico) as representative of Politecnico di Torino unit of CNIT (Consorzio Nazionale Interuniversitario per le Telecomunicazioni,)

Prof. Curri awards

1. 1997: Award "Ercole De Castro" scholarship of the AEI for research activities abroad
2. 2002: Award "Progetti di impresa ad elevato contenuto di conoscenza tecnologica" (ideas and business plan for high-tech company). Thanks to this, the ATS srl spinoff was started
3. 2014: JLT Best Paper Award: G. Bosco, V. Curri, A. Carena, P. Poggiolini, F. Forghieri. On the Performance of Nyquist-WDM Terabit Superchannels Based on PM-BPSK, PM-QPSK, PM-8QAM or PM-16QAM Subcarriers. JLT, vol. 29, p. 53-61, 2011

   This is a milestone paper for the field, showing for the first time the algorithmic behavior of Gaussian additive NLI versus the system parameters. These results have been obtained thanks to three years of work activities in software development within OptSim, coordinated by Prof. Curri and implemented with the valuable help of Prof. Carena. Moreover, Prof. Curri coordinated the activities to obtain the published results and took care of most of the paper writing.
4. 2015: JLT Best Paper Award: A. Carena, V. Curri, G. Bosco, P. Poggiolini, F. Forghieri. Modeling of the Impact of Nonlinear Propagation Effects in Uncompensated Optical Coherent Transmission Links. JLT, vol. 30, p. 1524-1539, 2012
5. 2017: FFABR, research funding awarded by the Italian Research Ministry according to the prof. Curri's outstanding bibliometric ranking
6. 2020, 2021, 2023: TOP50 Faculty of PoliTo in self-funding research activities

Prof. Curri participation in international conferences, as a distinguished invited speaker

1. Invited speaker: more than 30 invited speeches at the major conferences of the field including IEEE/OPTICA OFC, IEEE/OPTICA ECOC, OPTICA APC-networks, IEEE ICTON, IEEE/OPTICA ACP, IEEE-SUM, NGON
2. Tutorial speaker
   a. 2023, IEEE Photonics Conference (Nov 2023), "Synergistic use of AI and physics models in planning and controlling multi-band optical networks"
   b. 2023, IEEE ONDM (May 2023), Digital-Twin of physical-layer as enabler for open and disaggregated optical networks
   c. 2021, IEEE/OPTICA ECOC, "GNPy model for design of open and disaggregated optical networks"
   d. 2019, IEEE ICTON, "Synergistic use of analytical models and machine-learning for data transport abstraction in open optical networks"
3. Keynote speaker
   a. 2020, IEEE ICTON, "Software-Defined WDM Optical Transport in Disaggregated Open Optical Networks"
   b. 2019, IEEE International Conference of Electrical and Electronic Technologies for Automotive, plenary session, Turin (IT), "Photonic technologies for interconnected smart vehicles"
   c. 2015: IEEE HONET, plenary session, Islamabad (PK), "Optical Communications: from the Smoke Signals to Gigabit Internet".
4. Distinguish lecturer

a. 2020, Institute for Broadband Research and Innovation (IBRI), Soochow University, China, “Software-defined WDM data transport in multiband optical networks”

Prof. Curri bibliometrics

Prof. Curri shows an outstanding bibliometric data referred to the optical communications and networks community over the entire career and specifically starting from 2018, 3 years after the establishment of the PLANET team. Here are the data from Scopus and gScholar

- Scopus: Entire career. Cit.: 7100, h-I: 39, i-10: 105; Since 2018: Cit.: 3550
- gScholar: Entire career. Cit.: 9200, h-I: 45, i-10: 136; Since 2018: Cit.: 4700, h-I: 31, i-10: 90

Moreover, Prof. Curri is in general an outstanding scientist as testified by being part of the top 2% scientists worldwide according to the prestigious ranking from the Stanford University based on Scopus data on all scientific fields. Prof. Curri is part of top 2% in both the entire career ranking and last year ranking.

Prof. Curri publications

Prof. Curri has authored over 400 scientific publications, more than 100 in journals. Since 2015, he has co-authored around 270 publications. In the following, the mostly significant publications related to *Multi-band physical layer aware open and disaggregated optical networks*.

[1]. Vittorio Curri, "GNPy model of the physical layer for open and disaggregated optical networking [Invited tutorial]," J. Opt. Commun. Netw. 14, C92-C104 (2022).

[2]. R. Sadeghi, B. Correia, A. Souza, N. Costa, J. Pedro, A. Napoli, and V. Curri, "Transparent vs Translucent Multi-Band Optical Networking: Capacity and Energy Analyses," J. Lightwave Technol. 40, 3486-3498 (2022),

[3]. A. D’Amico, B. Correia, E. London, E. Virgillito, G. Borraccini, A. Napoli, and V. Curri, "Scalable and Disaggregated GGN Approximation Applied to a C+L+S Optical Network," J. Lightwave Technol. 40, 3499-3511 (2022),

[4]. T. Hoshida, V. Curri, L. Galdino, DT Neilson, W. Forysiak, JK Fischer, T.Kato, P. Poggiolini, "Ultrawideband Systems and Networks: Beyond C + L-Band," INVITED in *Proceedings of the IEEE*, vol. 110, no. 11, pp. 1725-1741, (2022)

[5]. N. Sambo, B. Correia, A. Napoli, J. Pedro, L. Kiani, P. Castoldi, and V. Curri, "Network upgrade exploiting multi band: S- or E-band?," J. Opt. Commun. Netw. 14, 749-756 (2022)

[6]. I. Khan, L. Tunesi, MU Masood, E. Ghillino, P. Bardella, A. Carena, and V. Curri, "Optimized management of ultra-wideband photonics switching systems assisted by machine learning," Opt. Express 30, 3989-4004 (2022)

[7]. A. D’Amico, E. London, B. Le Guyader, F. Frank, E. Le Rouzic, E. Pincemin, N. Brochier, and V. Curri, "Experimental validation of GNPy in a multi-vendor flex-grid flex-rate WDM optical transport scenario," J. Opt. Commun. Netw. 14, 79-88 (2022)

[8]. G. Borraccini, S. Straullu, A. D’Amico, A. Nespola, S. Piciaccia, A. Tanzi, G. Galimberti, and V. Curri, "Autonomous Raman amplifiers in multi-band software-defined optical transport networks," J. Opt. Commun. Netw. 13, E53-E62 (2021),

[9]. B. Correia, R. Sadeghi, E. Virgillito, A. Napoli, N. Costa, J. Pedro, and V. Curri “Power control strategies and network performance assessment for C+L+S multiband optical transport, “J. Opt. Commun. Netw., Vol 13, n. 7, pp. 147-157, (2021)

[10]. G. Borraccini, A. D'Amico, S. Straullu, A. Nespola, S. Piciaccia, A. Tanzi, G. Galimberti, A. Bottacchi, S. Swail, and V. Curri "Cognitive and autonomous QoT-driven optical line controller," J. Opt. Commun. Netw., Vol 13, n 10, pp. E23-E31. (2021)

[11]. A. Ferrari, M. Filer, K. Balasubramanian, Y. Yin, E. Le Rouzic, J. Kundrat, G. Grammel, G. Galimberti , and V. Curri " GNPy: An open source application for physical layer aware open optical networks," J. Opt. Commun. Netw., Vol 12, n. 6, pp. C31-C40, (2020)

[12]. A. D'Amico, S. Straullu, G. Borraccini, E. London, S. Bottacchi, S. Piciaccia, A. Tanzi, A. Nespola, G. Galimberti, S. Swail, V. Curri., "Enhancing Lightpath QoT Computation With Machine Learning in Partially Disaggregated Optical Networks," in IEEE Open Journal of the Communications Society, vol. 2, pp. 564-574, (2021)

[13]. A. Ferrari, E. Virgillito, and V. Curri "Band-Division vs. Space-Division Multiplexing: A Network Performance Statistical Assessment," J. Lightwave Technol., Vol 38, n 5, pp. 1041-1049. (2020)

[14]. A. D'Amico, S. Straullu, A. Nespola, I. Khan, E. London, E.,Virgillito, S. Piciaccia, A. Tanzi, G. Galimberti, and V. Curri "Using machine learning in an open optical line system controller, " J. Opt. Commun. Netw., Vol 12, n 6, pp. C1-C11. (2020)

[15]. N. Sambo, A. Ferrari, A. Napoli, N. Costa, J. Pedro, B. Sommerkorn-Krombholz, P. Castoldi, and V. Curri, "Provisioning in Multi-Band Optical Networks," J. Lightwave Technol. 38, 2598-2605 (2020)

[16]. A. Ferrari, A. Napoli, JK Fischer, N. Costa, A. D'Amico, J. Pedro, W. Forysiak, E. Pincemin, A. Lord, A. Stavdas, J.P. F-P Gimenez, G. Roelkens, Ni. Calabretta, S. Abrate, B. Sommerkorn-Krombholz, and V. Curri, "Assessment on the Achievable Throughput of Multi-Band ITU-T G.652.D Fiber Transmission Systems," J. Lightwave Technol, vol. 38, no. 16, pp. 4279-4291, (2020)

[17]. M. Cantono, A. Ferrari, D. Pilori, E. Virgillito, J. L. Augé, and V. Curri, "Physical Layer Performance of Multi-Band Optical Line Systems Using Raman Amplification," J. Opt. Commun. Netw. 11, A103-A110 (2019)

[18]. M. Filer, M. Cantono, A. Ferrari, G. Grammel, G. Galimberti, and V. Curri (2018), "Multi-vendor Experimental Validation of an Open Source QoT Estimator for Optical Networks," INVITED, J. Lightwave Technol. (2018),

[19]. M. Cantono, D. Pilori, A. Ferrari, C. Catanese, JL Auge, and V. Curri, "On the Interplay of Nonlinear Interference Generation with Stimulated Raman Scattering for QoT Estimation," J. Lightwave Technol., vol 36, nr 15. (2018)

[20]. V. Curri, M. Cantono, R. Gaudino "Elastic All-Optical Networks: A New Paradigm Enabled by the Physical Layer. How to Optimize Network Performances?" INVITED, J. Lightwave Technol., vol. 35 n. 6, pp. 1211-1221, (2017)

[21]. V. Curri, A. Carena, "Merit of Raman Pumping in Uniform and Uncompensated Links Supporting NyWDM Transmission?" INVITED, J. Lightwave Technol, vol. 34, no. 2, pp. 554-565, (2016)

[22]. V. Curri, A. Carena, A. Arduino, G. Bosco, P. Poggiolini, A. Nespola, F. Forghieri "Design strategies and merit of system parameters for uniform uncompensated links supporting Nyquist-WDM transmission," J. Lightwave Technol., vol. 33 n. 18, pp. 3921-3932. (2015)