

SELECTION OF ONE ASSOCIATE PROFESSORS FOR THE ACADEMIC RECRUITMENT FIELD 09/F2 "TELECOMMUNICATIONS" AT THE ACADEMIC CLASS OF EXPERIMENTAL AND APPLIED SCIENCES - TECIP INSTITUTE, PURSUANT TO ART. 24, SUBSECTION 5, OF ITALIAN LAW 240/2010, ISSUED BY RECTOR DECREE NO. 145 DATED 13/03/2024.

The Committee for the evaluation of Dr. Nicola Sambo, tenure-track – probationary, assistant professor, in the third year of his temporary contract pursuant to Italian Law no. 240/2010, art. 24 paragraph 3 letter B, in order to promote her to Associate Professor in the Academic Recruitment Field 09/F2 "Telecommunications" at the Academic Class of Experimental and Applied Sciences and TeCIP Institute, nominated by the Rector by decree No. 232 dated 30/04/024, consists of:

- Prof. Alberto Bononi, Full Professor in the Academic Recruitment Field 09/F2 "Telecommunications" - Academic Discipline ING-INF/03 "Telecommunications" at the University of Parma;
- Prof. Gabriella Bosco, Full Professor in the Academic Recruitment Field 09/F2 "Telecommunications" - Academic Discipline ING-INF/03 "Telecommunications" at the Politecnico of Turin;
- Prof. Nicola Calabretta, Full Professor at the Technical University of Eindhoven (NL);
- Prof. Paolo Monti, Professor at the Chalmers University of Technology (Sweden);
- Prof. Massimo Tornatore, Full Professor in the Academic Recruitment Field 09/F2 "Telecommunications" - Academic Discipline ING-INF/03 "Telecommunications" at the Politecnico of Milan, as designated expert member by TeCIP Institute.

The Committee convened via teleconference, as authorized by the Rector, on June 11th, 2024, at 14:00, from the following locations:

Prof. Bononi located in Parma, connected via Teams,

Prof. Bosco located in Turin, connected via Teams,

Prof. Calabretta located in Eindhoven, connected via Teams,

Prof. Monti located in Gothenburg, connected via Teams,

Prof. Tornatore located in Milan, connected via Teams.

Pursuant to art. 5 paragraph 2 of Legislative Decree no. 1172/1948, each member declared that they have no kinship or affinity up to the fourth grade with any of the other members and the candidate, that there are no reasons for abstention in relation to art. 51 of c.p.c. and that he is not in any situation, actual or potential, of conflict of interests with the candidates (as per art. 6 bis of

the Legislative Decree No 241/1990).

Prof. Tornatore was nominated as President and Prof. Bononi as Secretary.

The Committee then reviewed the Call and especially his article 4 and agreed that the candidate shall be assessed according to the parameters established by Ministerial Decree 344/2011, in relation to the compliance of the scientific profile with the "general criteria of qualification for teaching and research required for access to professorial positions at the School" established by the School's Commission for Recruitment and set out in article 1 of the Call.

The members of the Committee stated that the Personnel Office of the School has provided them with an electronic copy of the documentation submitted by the candidate containing: application, curriculum, publications with a declaration in lieu of an affidavit certifying compliance with the original, and a list of all the documents accompanying the application and that they have examined it and made their individual assessments, which are reported in Annex 1 of these minutes.

The Committee then collectively examined the publications, curriculum and teaching activities of the candidate, confronted their individual assessments and reviewed the collegiate assessment annex sub 2 attached to the minutes of which it is an integral part. Then after a full discussion, on the basis of a unanimous vote, the Committee declared that Dr. Sambo is qualified to be appointed as associate professor.

Given the conclusion of the selection procedure for one position of Associate Professor in the Academic Recruitment 09/F2 "Telecommunications" at the Academic Class of Experimental and Applied Sciences and TeCIP Institute pursuant to art. 24, subsection 5 of Italian law 240/2010, the President declared the work closed.

These minutes, and the attached declarations of the Committee's members connected via teleconference will be given to the Personnel Office in order for these proceedings to be verified, with a decree by the Rector.

The session closed at 14.45.

Read, approved and signed,

f.to: Gabriella Bosco

The Committee



**Politecnico
di Torino**

ATTACH 1

INDIVIDUAL ASSESSMENTS

Assessment by Prof. Alberto Bononi

Research and Publication Activity skills:

Dr. Sambo has a solid background in networking, and specifically optical networking. His research activities have been carried out in a stimulating environment at the TeCIP institute, often in collaboration with researchers more focused on the physical layer design. The outcome is an outstanding series of publications which study propagation of optical signals in a networking environment when considering the physical limitations of the optical channel.

Dr. Sambo worked intensively on elastic optical networks and published significant contributions on sliceable transponders. For one publication in this area, he was among the recipients of the Charles Kao Award.

Dr. Sambo also worked in the area of machine-learning aided failure management and optimization for optical networks.

Finally, more recently Dr. Sambo addressed his research towards the study of higher-capacity multi-band optical networks on traditional single-mode fibers, and of single-band optical networks on multi-mode/multi-core optical fibers.

During his research contract at S. Anna school, Dr. Sambo has published 13 papers on international peer-reviewed journals (5 of which as first author, 1 invited. Most of them are in Top journals in his sector) and 25 conference papers (some of which are top scored). He gave 10 invited talks at the leading conferences in his sector, which is remarkable. Dr. Sambo has also one patent application. His publications have had a significant impact, as proved by his SCOPUS indices: h-index=28, citations=3195. This places him in the first best quartile for number of products published in the top 25% of SJR in the last three years among Associate Professors in their disciplinary sector. The minimum requirement of the S. Anna school for promotion to Associate professor was of being placed at least in the second-best quartile.

Teaching Activity skills:

Dr. Sambo delivered overall 90 hours of teaching to PhD students of the S. Anna school, with fully positive evaluations from the (admittedly few) students who attended his courses. The minimum requirement of the S. Anna school was 45 teaching hours. Dr. Sambo also is supervising 3 PhD students and 1 research fellow, even here exceeding the required 2 PhD supervisions by the school's requirements.

Participation in research projects:

During his research contract, Dr Sambo participated in numerous EU- and Italian government-funded competitive research projects. Most recently he became the scientific responsible of 2 new projects (a HORIZON-MSCA-2022-DN-01 project and a HORIZON-JU-SNS-2022-STREAM-A project) for a funding of around 310k€. He also submitted a proposal for a European HORIZON project as

coordinator. All of the above attests to his great managerial maturity and ability to attract external funds to the school.

Professional activity:

Dr. Sambo had a quite good editorial activity. He served as TPC member in several important conferences in his field, and he serves as an Associate Editor of the IEEE Networking Letters. He also was guest editor of the special issue on multi-band optical networks for the IEEE/Optica JLT.

Summary

To wrap up, Dr Sambo has made significant scientific contributions that earned him an outstanding level of recognition in his sector of optical networking. It is my opinion that Dr. Sambo fully deserves a promotion to the Associate Professor level.

Assessment by Prof. Gabriella Bosco

1) Teaching

Since 2012, Dr. Nicola Sambo has been actively involved in teaching activities focused on fiber optic communications and networks at both the MSc and PhD levels. Specifically, Over the past five years, he has been fully responsible for teaching a 30-hour course titled "Advanced Optical Networking" within the PhD program on Emerging Digital Technologies and the Photonic Integrated Circuits, Sensors, and Networks (PIXNET) Erasmus Mundus Joint Master's Degree. This totals 90 hours of instruction, since the academic year 2021-2022. His didactic skills appear to be excellent, as evidenced by positive feedback from student questionnaires conducted over the past three years.

In addition, he has supervised the work of 3 MSc students, and he is currently supervising 3 PhD students, which demonstrates his full capability in directing doctoral research.

Furthermore, owing to his exceptional international reputation, Dr. Sambo has been invited as an independent expert to participate in several international committees tasked with examining PhD students and appointing early-stage researchers.

2) Scientific research and publications

Dr. Sambo is directing a research team at Scuola Superiore Sant'Anna, composed of 3 PhD students and 1 junior researcher, working on the control of next generation networks.

He has been involved in several research projects, demonstrating excellent fundraising skills from both private and public agencies. He currently serves as the contact point and scientific lead for Scuola Superiore Sant'Anna in the EU HORIZON-MSCA-2022-DN-01 NESTOR ("Next generation high-speed optical networks for metro access") project, as well as in the EU SEASON project and the EU H2020 Marie Skłodowska-Curie Action within the Innovative Training Networks (ITN) titled "Machine Learning in Optical NeTWORKs" (MENTOR). These projects collectively represent over 400KEUR in funding for Scuola Superiore Sant'Anna.

Dr. Sambo has authored or coauthored a significant number of journal and conference papers in the most prestigious journals and conferences in the field of optical communications. The number of

publications, citations received, and his h-index significantly exceed the national standard values for both Associate Professors and Full Professors. Since August 2021, he has published more than 10 journal papers and over 20 conference papers, including 7 invited talks at international conferences.

Additionally, he has been serving as an Associate Editor of IEEE Networking Letters since 2019 and has acted as a guest editor, alongside well-known international top-researchers, for two special issues published in the Journal of Lightwave Technology in 2018 and 2022.

3) Third mission

The candidate has been involved in various third mission activities. Currently, he serves as a Member of the Executive Committee of the Internet Festival in Pisa, an annual cultural festival focused on activities, events, debates, and entertainment related to the themes of the Internet and digital innovation. Furthermore, he has coordinated a project funded by the Italian Ministry of Economic Development aimed at valorizing a patent of which he is one of the co-authors. Additionally, he has contributed to more than ten international patents in the field of optical networking and switching.

In my opinion, Dr. Sambo has effectively and successfully met all the goals defined by the "Istituto TeCIP". Overall, I find his performance to be of exceptionally high quality, and I strongly endorse his promotion to the position of Associate Professor in the Academic Recruitment Field 09/F2 "Telecommunication".

Assessment by Prof. Nicola Calabretta

This performance assessment of Dr. Nicola Sambo mainly focusses on the last three years period since 2021 and concerns the research and teaching activity skills, participation in research project and publishing activity as well as third mission activities. As an overall conclusion based on the gained international recognition and the outstanding performance of Dr. Nicola Sambo in terms of scientific contributions, there is, in my opinion, no doubts about his promotion as associate professor.

Research Activity skills, Publishing activity, and Research projects

Dr. Nicola Sambo has performed excellent research in emerging multiband transmission systems, energy efficient optical networks also exploiting machine learning techniques for failure management and network optimization. The high quality and quantity of the produced research is confirmed by more than 13 international peer-reviewed journals and more than 25 conference papers, including several invited talks at international conferences. Several of those papers have been evaluated as TOP scored papers at international conferences as OFC and ECOC, and top-quality international journals such as JLT and JOCN.

The high quality of the research carried out by Dr. Nicola Sambo is also confirmed by the outstanding bibliometric indicators. Based on such results, he has been qualified by the Italian ASN committee as National Scientific Qualification to Full Professor (Abilitazione Scientifica Nazionale a Professore di prima fascia nel settore concorsuale 09/F2 Telecomunicazioni) since 10/01/2020 valid until 10/01/2031.

Dr. Nicola Sambo got several awards, a very relevant one is the Charles Kao Award For Best Optical Communications & Networking paper by the Communications Society for the paper. Dr. Nicola Sambo has been listed within the TOP 2% scientists 2023 and 2022, drawn up by Stanford University.

Dr. Nicola Sambo has demonstrated the ability in acquiring research projects funded by international (H2020, Horizon Europe) and national/regional (PRIN, FIRB FIS, FISA, PNRR) funding agencies. Dr. Nicola Sambo is scientific responsible and contact point for 3 European projects and 2 Italian projects. He is managing and supervising 3 PhD students, actively working on the research activities related to the research projects.

It is clear the Dr. Nicola Sambo's effort and activities in acquiring research projects funded by by the EU commission and the Italian government since 2021. Dr. Nicola Sambo's has built a large network with relevant international and national industrial and academics partners which will be functional for the realization of future bilateral collaborations as well as the acquisition of international and national research projects.

Dr. Nicola Sambo has been also very active in international scientific activities being technical committee member in several international conferences such as IEEE International Conference on Communications, Optical Networks and Systems (ONS) Symposium, IEEE Photonics Conference, European Conference on Integrated Optics, as well as Associate Editor of IEEE Networking Letters and Guest Editor of the special issue on multi-band optical networks for the IEEE/Optica Journal of Lightwave Technology.

Teaching Activity skills

Dr. Nicola Sambo is teaching the course on "Advanced Optical Networking" since 2021. This course is a post-graduate course, particularly dedicated to PhD. Overall, Dr. Nicola Sambo delivered 90 hours of teaching, which is the double with respect to the required targeted objective of 45 hours. The course has been evaluated very positive from the students with a score of 100/100 for the year 2021/2022. This very positive evaluation clearly indicates the high quality teaching skills of Dr. Nicola Sambo.

Dr. Nicola Sambo is also supervising 3 PhD students, actively working on the research activities related to the research projects. Moreover, Dr. Nicola Sambo has been acting as tutor of bachelor students at Scuola Superiore Sant'Anna as well as supervisor of several master students in the context of the Erasmus Mundus PIXNET and visiting student within a collaboration with Orange and IMT Atlantique. This clearly demonstrates his full capability to direct doctoral research work. Moreover, to further confirm the Dr. Nicola Sambo's international recognition as an independent expert, he has been invited to take part in several international committees for the examination of PhD students.

Third Mission Activities

With respect to patent and technology transfer, Dr. Nicola Sambo has been the coordinator of the Italian MISE ZEROTOUCH project which objective was the valorization of his patent WO2018060887 - METHOD FOR MANAGING A TELECOMMUNICATION NETWORK.

Moreover, several dissemination and public engagement activities have been performed by Dr. Nicola Sambo, the most notable are the organization of the Internet Festival, BRIGHT 2022, Pisa:

talk entitled Energy efficiency in telecommunications networks, Interview at RAI News TV channel on Internet energy consumption.

Assessment by Prof. Paolo Monti

Research activity skills:

Nicola Sambo has demonstrated exceptional qualifications in the field of optical networks. His extensive scholarly work, comprising over 200 publications, including journal articles, conference papers, and patents, reflects his outstanding contributions to the field. His research has been published in prestigious journals such as the Journal of Lightwave Technology and IEEE/OSA Journal of Optical Communications and Networking, to mention a few. He has gathered significant recognition in the scientific community, evidenced by his high citation indices and the prestigious Charles Kao Award for best paper.

Nicola Sambo's research focuses on multi-band (MB) optical networks, energy efficiency, application of machine learning methods, and space division multiplexing (SDM) networks. In MB optical networks, he addressed wideband transmission impairments and studied network architectures and control plane design solutions. Dr. Sambo investigated ways to improve energy efficiency in optical networks through solutions leveraging pluggable transceivers and point-to-multipoint (P2MP) communication based on digital subcarrier multiplexing. In machine learning applied to optical networks, he worked on failure management and network optimization, addressing issues like imbalanced training datasets and using reinforcement learning for resource allocation in MB networks. He also focused on control plane solutions for next-generation optical networks and worked on non-terrestrial networks to counteract signal fading in free space optics networks. In SDM networks, he studied methods to enhance network flexibility and capacity through Mode-Group Division Multiplexing (MGDM) and conducted field trials to demonstrate the benefits of the SDM concept.

Dr. Sambo's international reputation is further highlighted by his extensive collaborations with industrial and academic partners across Europe and the United States, including Nokia Bell Labs, Infinera, and several other prestigious universities and research centers. His role as a work package leader in multiple high-profile projects and his numerous invited talks at leading conferences like OFC and ECOC emphasize his recognition in the global research network. Additionally, his involvement in technical program committees and journal editorial boards speaks to the regard in which his research community values his input.

In summary, Nicola Sambo's extensive publication record, high citation indices, and active engagement in significant research projects demonstrate his outstanding ranking in the field of telecommunications, particularly in optical networks. His ability to lead and collaborate on an international scale, along with his consistent contributions to high-impact journals, fulfills the research activity requirements for the position of Associate Professor, placing him among the top researchers in the optical networks field.

Teaching activity skills:

As a Tenure Track Assistant Professor at the TeCIP Institute, Scuola Superiore Sant'Anna, he has been responsible for delivering advanced courses and supervising numerous theses. He delivered 90 hours of teaching with excellent evaluations from the students.

Specifically, Dr. Sambo has been teaching the course "Advanced Optical Networking" (30 hours) for three years now at Scuola Superiore Sant'Anna, which is part of the PhD program in Emerging Digital Technologies and the Photonic Integrated Circuits, Sensors and Networks - PIXNET Erasmus Mundus Joint Master Degree.

Nicola Sambo supervises three PhD students and one junior researcher, demonstrating his ability to mentor graduate and post-graduate researchers. His past supervision includes several master's theses within the PIXNET program and the Laurea Magistrale in Computer Science and Networking. Dr. Sambo's invitation as a PhD opponent for a PhD degree at Tallinn University of Technology underscores his international reputation. Overall, Nicola Sambo's teaching and supervisory activities fulfill the teaching activity requirements for the Associate Professor position.

Participation in research projects:

Nicola Sambo has an impressive track record of involvement in high-impact research projects funded through competitive calls at the European and national levels. His accomplishments highlight his ability to secure funding and lead collaborative research initiatives.

Nicola Sambo has contributed to several key European and international projects and initiatives. For example, he served as the Work Package (WP) leader for the control plane in the ORCHESTRA project, focusing on exploiting monitoring information for network optimization and reliability. In the ITN MENTOR project, Dr. Sambo trains Early Stage Researchers on machine learning applications in optical networks. His involvement in the Metro-Haul and 5G-TRANSFORMER projects included collaboration with industry partners like Ericsson, focusing on controlling vendor-neutral networks and orchestrating resources in multi-domain environments. Furthermore, in the EU SEASON project, Dr. Sambo is responsible for researching multi-band optical networks and reducing the network power consumption.

Nicola Sambo has also made significant contributions at the national level. In the Italian PRIN FIRST project, he led the design and implementation of control planes for space division multiplexing optical networks. Additionally, via the MISE ZEROTOUCH project, he had the chance to improve the technology readiness level of some of its inventions.

In addition to research, Dr. Sambo actively participated in public engagement activities. He served on the Executive Committee of the Internet Festival in Pisa, a major event focused on digitalization and Internet technologies, contributing to the sociocultural development and dissemination of scientific knowledge.

Overall, Nicola Sambo's extensive involvement in research projects, combined with his successful fundraising and public engagement efforts, fulfills the participation in research project requirements for the position of Associate Professor.

Publishing activity:

Nicola Sambo currently serves as an Associate Editor for IEEE Networking Letters. In addition, Dr. Sambo has served as a Guest Editor for a special issue on multi-band optical networks in the IEEE/Optica Journal of Lightwave Technology, one of the leading journals in optical communications. This role involved coordinating with authors, reviewers, and the editorial team to compile a comprehensive collection of papers on the cutting-edge topic of multi-band optical networks, showcasing his expertise and leadership in this area.

His service to the community extends to technical program committees (TPC) for several high-profile conferences. He has been a TPC member for the International Conference on Communications (ICC)

ONS symposium (2022-2024), IEEE MeditCom 2021, IEEE Photonics Conference (IPC) 2023, and the European Conference on Integrated Optics (ECIO) 2024.

He also regularly presents at major conferences in the optical network field, where he also delivered ten invited talks. His *h*-index and citation statistics are impressive, putting him well beyond the qualification for Associate Professor.

Nicola Sambo's editorial and organizational leadership and his conference participation activities highlight his significant contributions to disseminating scientific knowledge and advancing research in his field. This involvement fulfills the publishing activity requirements for the position of Associate Professor.

Assessment by Prof. Massimo Tornatore

Research Activity skills:

Dr. Nicola Sambo's research activities are interdisciplinary, with a focus on bridging optical-layer transmission and networking protocols/algorithms/control. Traditionally, there has been a gap between these two domains of optical communications and networking, often treated as separate areas. Dr. Sambo in his work covered a large set of fundamental topics at the intersection of the above areas.

He worked intensively on the emerging concept of flexible grid and elastic optical networks, contributing with highly-cited contributions on the impact of sliceable transponders, i.e. transponders handling optical flows that can aggregated independent flows directed towards different routes. A paper in this area received the prestigious Charles Kao Award, assigned to the best paper of the IEEE/Optica Journal of Optical Communication and Networking.

Dr. Sambo has also contributed significantly providing novel machine learning (ML) solutions for failure management and network optimization. ML applications in optical networks, especially for failure management, are crucial. Dr. Sambo investigated, among the first researcher in the area, the use of network kriging for failure localization. More recently, as real-world data collection poses challenges due to uneven distribution of failure types, Dr. Sambo has investigated data augmentation techniques that achieve both higher accuracy and complexity reduction.

In the timely area of multi-band optical networks, Dr. Sambo has published several pioneering works in terms of defining novel network architectures, of investigating migration strategies to upgrade the network from C-band to - and S-band, and of developing required protocol extension to be adopted in the control plane, e.g., to incorporate transmission impairments arising specifically in multiband scenarios.

Currently, his research also explores methods to augment network capacity through multi-band or spatial division multiplexing (SDM), while considering associated transmission challenges, and developing corresponding network control mechanisms.

As a recognition of the excellent positioning of Dr. Sambo in the optical networking research community, he is listed within the TOP 2% scientists ranking by Stanford University for 2022 and 2023.

Teaching Activity skills:

Dr. Nicola Sambo was the teaching instructor of a 30-hours course on "Advanced Optical Networking", for each of the three years of his researcher contract, leading to an aggregate teaching achievement well above the targeted objective of 45 hours. The course was dedicated to PhD students and received top scoring based on student evaluation (10 out of 10). This outstanding evaluation offers solid evidence of Dr. Sambo's skills in effectively communicating and engaging with students.

In addition, Dr. Sambo is supervising three PhD students and has supervised two master's students, two bachelor students, and one visiting student, which demonstrates the achievement of proficiency in overseeing doctoral research. Finally, Dr. Sambo has been invited as PhD opponent for PhD degree at Tallinn University of Technology (a clear indication of international reputation in the field and recognition of his acquired maturity in PhD supervision), and he has been invited to take part in several committees for the appointment of early-stage researchers.

Participation in research projects:

During his research contract, the candidate has maintained a constant and very intense participation in research projects funded by the EU commission and the Italian government, and even has, more recently, laid the basis to continue such activities in the years to come.

On the EU side, Dr. Sambo was contact point and scientific responsible for Scuola Superiore Sant'Anna of: (i) the Marie Curie Action MENTOR ("Machine LEarning in Optical NeTWORKs") project within the Innovative Training Networks (ITN), (ii) the Doctoral network NESTOR ("Next generation high-speed optical networks for metro access"), and (iii) of the EU Horizon Europe SEASON project, as a third-party partner.

On the Italian side, Dr Sambo participates to the RESTART program (Partnership on "Telecommunications of the Future"), he was contact point and scientific responsible for Scuola Superiore Sant'Anna of the Italian PRIN FIRST (where he was also WP leader), and was scientific responsible for the Italian MISE ZEROTOUCH project and industrial third party project on Time Sensitive Networks.

Overall, the level of engagement in research projects is outstanding.

Publishing activity:

In the reporting period, Dr. Nicola Sambo has published 13 papers on international peer-reviewed journals (5 as first author, 1 as invited paper) and 25 conference papers, some of which are top-scored at top conferences as ECOC and OFC). He gave many presentations at international conferences, including 10 invited talks at the leading conference on optical communications (as, e.g., a presentation in an OFC symposium). His journal papers have mostly been published in top venues as the IEEE/Optica Journal of Lightwave Technology (JLT), IEEE/Optica Journal of Optical Communication and Networking, and IEEE Transactions on Network and Service Management. Dr. Sambo has also a patent application.

Overall, the bibliometric indicators of Dr. Sambo are outstanding for an early stage researcher and fully qualify him for both an associate professor and a full professor position in Italy, as confirmed by his qualification by the relevant Italian ASN committee.

Moreover, Dr Sambo had a good engagement in terms of editorial service as he served as TPC member for the Optical Networks and Systems (ONS) Symposium of ICC, for the IEEE Photonics Conference (IPC) 2023, and European Conference on Integrated Optics (ECIO) 2024; he serves as Associate Editor of IEEE Networking Letters, and he was guest editor of the special issue on multi-band optical networks for the IEEE/Optica JLT.

Summary

In summary, Dr. Sambo's scientific contributions have achieved global recognition, positioning him as a widely-acknowledged emerging talent in the field of optical networking. Dr. Sambo fully deserves promotion to associate professor.

ATTACH 2

COLLEGIATE ASSESSMENTS

Research Activity Skills

Dr. Nicola Sambo has demonstrated exceptional research capabilities in the field of optical networks, focusing on areas such as multi-band optical networks, energy efficiency, and machine learning applications for failure management and network optimization. His work on elastic optical networks and sliceable transponders has earned him significant recognition, including the prestigious Charles Kao Award. His research is characterized by high-impact publications, with over 200 contributions, including journal articles, conference papers, and patents. His bibliometric indices are outstanding, placing him among the top researchers in his field and earning him the National Scientific Qualification to Full Professor in Italy. His research has been published in leading journals, and he has been invited to speak at major conferences, reflecting his high standing in the international research community.

Teaching Activity Skills

Dr. Sambo has excelled in teaching, delivering 90 hours of lectures on "Advanced Optical Networking" at the PhD level, receiving excellent evaluations from students. He supervises three PhD students and has overseen numerous master's and bachelor's theses, demonstrating his ability to mentor and guide graduate-level research. His teaching has consistently received positive feedback from students. He has also been invited to serve on international committees for PhD evaluations, further highlighting his teaching and supervisory expertise.

Participation in Research Projects

Dr. Sambo has been highly active in securing and participating in research projects funded by the EU and the Italian government. He has been the scientific lead for multiple projects, including MSCA Nestor and Mentor, and EU Season projects. His ability to lead and manage complex research initiatives is demonstrated by his role as a work package leader in several high-profile projects and his extensive network of industrial and academic collaborators. His participation in these projects highlights his ability to attract external funding and his commitment to advancing research in the field.

Publishing Activity

Dr. Sambo has a prolific publishing record with 13 peer-reviewed journal papers (5 as first author) and 25 conference papers over the last three years, including several top-scored and invited talks at major conferences. His work has been recognized with high citation indices and numerous awards. He serves as an Associate Editor for the IEEE Networking Letters and has been a guest editor for special issues in leading journals. His editorial roles and participation in technical

program committees of major conferences reflect his significant contributions to the dissemination of scientific knowledge in optical networking.

Conclusion

Based on the above, the Committee unanimously recommends the promotion of Dr. Nicola Sambo to the role of Associate Professor in the Academic Recruitment Field 09/F2 "Telecommunication" at the Institute of Communication, Information and Perception Technologies (TECIP) of the Scuola Superiore Sant'Anna, Pisa.

