Annex nr. 1 – Award Application

1. Candidate

Name: Stanciu

Surname: Stefan G.

Doctor since (a copy of the PhD diploma is required): 2011 (Ministry order: 4387/6.06.2011)

Position: Scientific Researcher / Research Project Director

Institution: National University for Science and Technology Politehnica Bucharest

Mobile phone:

E-mail address:

2. Edition of "Gala Cercetării Românești": 2024
3. Award and category for which the application is submitted (individual or research team): Physics – "Șerban Țițeica" Award (individual candidate)
4. Team Leader: Yes
5. Research team componence, if required by the award category: -

6. Most important scientific achievements of the last five years (10.02.2019-9.02.2024)

Development of optical nanoscopy systems, techniques and tools

► Non-linear optical microscopies are acknowledged as powerful tools for the optical characterization of biological species and advanced materials (DOI: 10.1038/nbt899; 10.1038/ncomms15714). Among these, Two-Photon Excited Fluorescence (TPEF) and Second-Harmonic Generation (SHG) microscopies stay at the core of numerous, high-impact, label-free, in-vitro, ex-vivo and in-vivo tissue imaging applications. In the Horizon 2020 Attract: HARMOPLUS project, coordinated by the candidate, he implemented in partnership with Confocal.nl (The Netherlands), a multimodal prototype system for Re-Scan SHG and Re-scan TPEF, yielding significant resolution and sensitivity improvements compared to conventional SHG/TPEF systems. This prototype has been presented in the leading journal **PNAS (IF 11.1)**, DOI: 10.1073/pnas.2214662119. A key application of this novel technology is collagen imaging at sub-diffraction resolution, which has deep ramifications for medicine as the collagen architecture of mammalian tissues modifies specifically with the progression of different pathologies (e.g. cancers, fibrosis, diabetes, etc.). SHG imaging at higher resolution can facilitate the better understanding of disease specific collagen changes, and more efficient diagnostic methods. Based on this development, the candidate has been invited to contribute to the photonics community roadmap on label-free optical nanoscopy published last year in **Laser & Photonics Reviews (IF 11)**, DOI: 10.1002/lpor.202200029 .

► Inspired from a previous architecture that the candidate presented back in 2017 in *Biomedical Optics Express* (10.1364/BOE.8.005374), awarded at the EURONANOFORUM 2015, and SPAOM Meeting 2016, he endeavored in the MEDYCONAI project (RO-NO-2019-0601, 2021- 2024, 1.6 mil. EUR), that he coordinates, to develop an unprecedented prototype system for correlative far-field near-field nanoscopy, harboring a wide variety of imaging techniques based on complementary contrast mechanisms, Fig. 1. One of the objectives of this system is to unravel still poorly understood aspects of cell life and fate, which are unavailable to conventional microscopy techniques commonly used by cellular and molecular biologists. In a quest to achieve this objective he has partnered in the MEDYCONAI project with Prof. Harald Stenmark (Oslo University Hospital), a leading figure in molecular biology. This prototype system will be finalized in 2024, and among the planned applications, the candidate has submitted as coordinator on 30.01.2024 a funding application in the ERA4Health Joint Transnational Call "Nano and advanced technologies for disease prevention, diagnostic and therapy", which is aimed at employing this system to elucidate relevant interactions of diagnostic and theranostic nanoprobes with cancer cells. Seven partners from Romania, Italy, Spain, Norway, Turkey and China take part in this, including two ERC Grantees. Furthermore, the candidate is in the process of organizing the IPR premises for a spin-off company with UNI involvement, in order to apply in the Horizon Europe EIC Accelerator calls of 2025 for the funding required to to scale this technology in terms of TRL, and to potentially transform it into a commercial product.

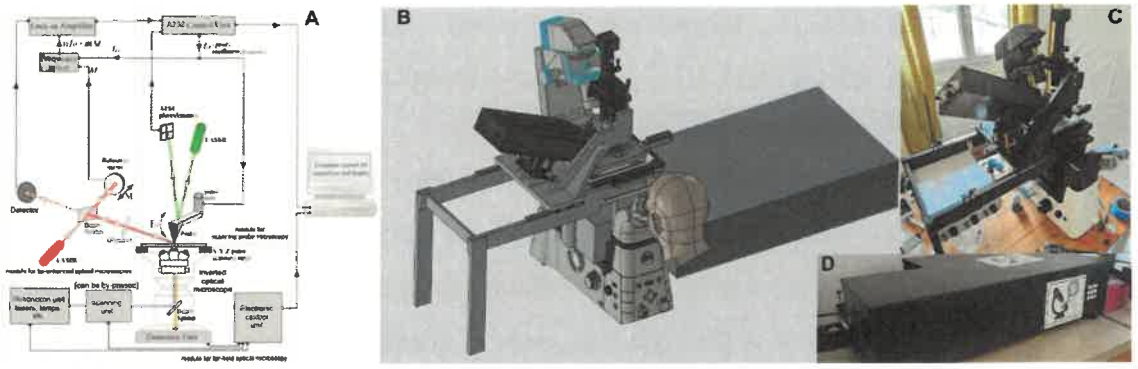

Fig. 1. Schematic diagram (A) and 3D model (B) of the prototype system under development in RO-NO-2019-0601, for correlative far-field/near-field nanoscopy. By placing the sample on the stage of an inverted microscope, it can be probed by multimodal modules for near-field and far-field nanoscopy, from the top, and bottom, respectively. Photos of the modules for C) near-field and D) far-field nanoscopy. Available contrast mechanisms for correlative nanoscale imaging: fluorescence (image scanning & tip-enhanced fluorescence), Raman (tip enhanced Raman spectroscopy, image scanning Coherent Anti-Stokes Raman Scattering Microscopy), SHG (image scanning & tip-enhanced SHG), dielectric & chemical contrast (scattering-type scanning near-field optical microscopy), topographic & mechanical contrast (atomic force microscopy).

► In the Horizon 2020 Attract: TEFPLASNOM project (2019-2020), coordinated by the candidate, he explored together with partners at University of Perugia how the plasmon resonance energy transfer phenomena can augment optical nanoscopy techniques building on tip-enhanced effects such as tip-enhanced fluorescence, tip-enhanced Raman, tip-enhanced photoluminescence, or scattering-type scanning near-field optical microscopy. Based on this initial work, the candidate has later developed with research partners at Jerusalem College of Technology and Bar Ilan University, the first ever framework for the fabrication and modelling of scanning probe tips with known optical properties. Its significance for the field of tip-enhanced nanoscopies is discussed in extent in an article published as co-lead author in **Advanced Photonics Nexus** (10.1117/1.APN.2.2.026002), the recently launched sister journal of the highly reputed Advanced Photonics-IF 17. He applied in the EIC Pathfinder Open Call 2023 for a Grant to scale up this technology, together with Bar-Ilan University (Prof. Zeev Zalevsky), and 6 other partners but despite good scores, it was not funded, and now plans to re-apply in the Pathfinder Open 2024, following recommended revisions. This research track complements other efforts of the candidate in the area of near-field nanoscopy, where he participated alongside a leading group in the field (Prof. Mengkun Liu, Stony Brook University), in the development of novel near-field optical data simulation methods [10.1364/OE.452949, 10.1364/OE.440821], and novel artificial intelligence methods for near-field spectroscopy [10.1021/acsphotonics.1c00915]. Other relevant efforts of the candidate in the area of near-field nanoscopy in the past 5 years, refer to the characterization of the dielectric function of advanced materials [10.1021/acsanm.9b02019], nanomaterial identification

[10.1016/j.apsusc.2020.145347], sub-surface nanoscopy [10.1021/acsomega.2c00410], nano-litography [10.1016/j.apsusc.2023.157014], or reference samples [10.1016/j.rinp.2023.107318]

Characterization and development of advanced materials

► Together with collaborators at the GIST institute in Korea (Prof. Young Min Song), the candidate was involved in joint research focused on the characterization of an emerging class of materials: ultrathin optical coatings with tunable color properties, exhibiting structural colors that can be changed with variations in the thickness and/or in the refractive index of coating materials. In a paper published in **Advanced Science (IF 15.1)**, 10.1002/advs.202000978, they showed that spin-coating an ultra-thin M-13 phage layer on a metallic, highly lossy resonant promoter, thin film, results in an instance that exhibits a sensitive colorimetric behavior with strong resonance changes, enabling rapid dynamic responses. Later, in a paper published in **Advanced Materials (IF 29.3)**, 10.1002/adma.202110003, featured on the front cover, it was shown that a metallic thin film designed as a Gires-Turnois resonator, can detect with ultra-high precision SARS-COV-2 virions presence and load. An additional manuscript discussing how this technology can be merged with artificial intelligence for the detection of zoonotic viruses, was later published in **Nano Today (IF 17.4)**, 10.1016/j.nantod.2023.101968. Currently, together with Prof. Young Min Song (GIST) and Prof. Harald Stenmark (Oslo Hospital), the candidate has implemented as lead author an experiment demonstrating the Gires-turnois thin film as a substrate that significantly augments s-SNOM phase imaging of ultra-thin (<100 nm) cell sections (manuscript in preparation).

► Together with collaborators at the Ningbo Institute of Materials Technology & Engineering (Prof. Aiguo Wu), of the Chinese Academy of Sciences, the candidate was engaged in research addressing the development, understanding and functionalization of novel nanomaterials in the form of nanoparticles. Among the important results of this research refer to the design and use of $Zn_xFe_{3-x}O_4$ nanoparticles (NPs) with different Zn doping concentrations and different dimensions. Various diagnostic and therapeutic applications of these materials have been developed, and presented, with the candidate's participation, in prestigious journals. In **Chemistry of Materials (IF 8.6)** 10.1021/acs.chemmater.9b01582 it was shown that $Zn_xFe_{3-x}O_4$ NPs are highly efficient as Magnetic Resonance Imaging contrast agents. In **Nano Today (IF 17.3)**, j.nantod.2020.100967 it was shown that cell internalized $Zn_xFe_{3-x}O_4$ NPs can be actuated with an external rotating magnetic field to inflict cell membrane damage, and subsequent cell death. Such strategies are especially useful for fighting drug-resistant cancer cells. Later in **Small (IF: 13.3)**, 10.1002/smll.202201669, the candidate and his collaborators showed that by tunning the Zn doping of the $Zn_xFe_{3-x}O_4$ nanoparticles, different phototherapeutic pathways can be enabled (e.g. photothermal therapy, photocatalytic therapy, etc.). In **Biomaterials (IF 14)**, 10.1016/j.biomaterials.2022.121868, they showed that magneto-mechanical and phototherapeutic routes enabled by $Zn_xFe_{3-x}O_4$ nanoparticles, can be synergistically merged. This work was demonstrated on triple negative breast cancer cells. Further on, in **Acta Biomaterialia (IF 9.7)**, 10.1016/j.actbio.2023.02.033, it was shown that the

morphological configuration of the $Zn_xFe_{3-x}O_4$ NPs results in different cell death pathways. In the just submitted proposal to the ERA4Health Transnational Call (proposal Id. ERA4HEALTHNANO-249), the candidate proposes, as coordinator, to combine $Zn_xFe_{3-x}O_4$ nanoparticles with SHG nanoprobes to result in an unprecedented theranostics tool, capable of MRI and SHG contrast, alongside therapeutic roles. He also prepares as coordinator an application for the Pathfinder Open Call, addressing an endoscope coating harboring $Zn_xFe_{3-x}O_4$ NPs functionalized to detach from the endoscope body upon sensing volatile signatures of gastric cancer tumors, and to attach to them for subsequent theranostics.

Microscopy data analysis with machine and deep learning:

► Together with research collaborators at the Tampere University in Finland and the Carol Davila University of Pharmacy and Medicine in Bucharest, the candidate has reported as corresponding author a methodology to classify TPEF and SHG images collected on unlabeled epithelial tissues. The added value of this study (among the first 5 studies worldwide to address Deep Learning augmented TPEF/SHG) relates to the difficulty by which dysplastic tissues are typically assessed with conventional diagnostic modalities. The utility of the demonstrated methodology is manifold, and can be operated with either on excised tissues, or potentially, in-vivo, with multiphoton tomographs. This work was published in **Biomedical Optics Express** (10.1364/BOE.11.000186). In a more recent study, published in *IEEE* **Journal of Selected Topics in Quantum Electronics (IF 4.9)**, 10.1109/JSTQE.2023.3258687, the candidate has further explored the use of Deep Learning in non-linear optical microscopies, referring to the problem of AI-assisted corneal edema detection in SHG images. A key finding of this work was that merging the results of distinct classifiers by majority voting schemes results in improved classification performance. This efforts complement others works reported in the past 5 years by the candidate on automated analysis of multiphoton microscopy images: 10.1109/ACCESS.2019.2937360; 10.1038/s41597-022-01477-1; 10.1364/BOE.428701; 10.1002/jbio.202000262; 10.1364/AO.393721; 10.1016/j.patter.2020.100040

Characterization and understanding of biological samples:

► In collaboration with a group at the Roma Tre University (Prof. Paolo Visca), the candidate showed, a 2-fold utility of the KK114 fluorophore: (a) it can be used as a contrast agent for labeling prokaryotic cells, to enable super-resolved fluorescence imaging of subtle bacteria structures with sizes unavailable to diffraction limited techniques, and (b) it can be used with fluorometric approaches to distinguish between viable and dead bacteria. Results from this body of efforts have been published, with the PIs involvement as co-main author, in: **Journal of Biophotonics** (highlighted on the journal cover), 10.1002/jbio.202000097, and **IEEE Journal of Selected Topics in Quantum Electronics (IF 4.9)**, 10.1109/JSTQE.2020.3048476. A connected effort of the candidate focused on label-free optical nanoscopy of bacteria, which resulted in the first ever curated dataset of scattering-type scanning near-field optical microscopy images, **GigaScience (IF 9.2)**, 10.1093/gigascience/giaa129.

7. **Narrative curriculum vitae, with emphasis on the research results of the past 5 years, according to the qualitative indicators in Annex 2, and the criteria of qualitative evaluation from Annex 3 of the competition rules.**

Dr. Stefan G. Stanciu (41 y.o.), is conducting his research activities as a Scientific Researcher / Research Project Leader at the Center for Microscopy-Microanalysis and Information Processing of the National University of Science and Technology Politehnica Bucharest (CMMIP-NUSTPB), and is engaged in discussions with the leadership of NUSTPB for potentially starting an independent research group for computational micro & nanophotonics in one of UPBs research institutes, as a senior scientific researcher. His research agenda so far mainly focused on

(i) optical characterization of biological species and advanced materials using scanning laser and scanning probe microscopies,
(ii) hardware (opto-mechatronics and electronics) developments and image processing techniques for high-resolution imaging at micro- and nanoscales
(iii) development of automated microscopy/nanoscopy data analysis methods based on machine and deep learning.

Besides his research activities, Stefan was also involved in teaching activities, being responsible for a MSc discipline, at the Faculty of Electronics, Telecommunications and Information Processing of University Politehnica of Bucharest, entitled: "Optoelectronic Techniques for Investigation of Materials".

Concerning his education, as high-school studies, Stefan graduated in 2002 the Spiru Haret National College in Bucharest, where his domain of specialization was Informatics, gaining along with his baccalaureate the Assistant Analyst Programmer degree, issued by the same institution. Between 2002 and 2007 he followed the courses of the Faculty of Electronics, Telecommunications, and Information Engineering of University Politehnica Bucharest, where his domain of specialization was Information Engineering. His bachelor thesis dealt with a software application for the processing of microscopy images, developed under the supervision of Prof. Vasile Lazarescu. Following his bachelor studies, he enrolled for PhD studies in Applied Electronics, conducted between 2007-2011 at the same University Politehnica of Bucharest, under the supervisorhip of Prof. Marin Dragulinescu. He successfully defended his thesis, entitled "Image Processing and Computer Vision Techniques for Confocal Laser Scanning Microscopy" in April 2011, in front of an international committee (Prof. Alberto Diaspro, Italian Institute of Technology, Prof. Genaro Saavedra, University of Valencia, Prof. Paul Schiopu, University Politehnica of Bucharest). During his PhD studies he acted as a Doctoral Research Assistant at the Center for Microscopy-Microanalysis and Information Processing of University Politehnica of Bucharest, working mainly on (i) microscopy data acquisition and processing, (ii) development and testing of computer vision methods for microscopy, and (iii) experiment design. Later on, in early 2012 he switched to a fixed term Scientific Researcher position (3rd grade Scientific Researcher, the research track equivalent of 'Lecturer'), conducting related research activities within the same group. In 2013 he served as SCIEX Postdoctoral Researcher at the Light Microscopy and Screening Center (LMSC) of ETH Zurich, where he implemented a competition-based awarded grant, entitled "Registration and Fusion of High Resolution Imaging Data", under the supervisorship of Dr. Gabor Csucs, Head of the LMSC. After his return to Romania, complementary to his Scientific Researcher position, he acted as a Postdoctoral Researcher in the Program POSDRU/159/1.5/S/137390. At the end of this program, in 2015 he obtained three awards: (i) Award for exceeding required number

of journal publications, (ii) Award for exceeding required number of conference publications; (iii) Excellence Award for highest cumulated impact factor in the whole postdoctoral target group.

Overall, throughout his career Stefan has gained valuable R&D expertise by participating in >30 Research Projects funded by national or European research grants. Since 2015 he has been continuously implementing research projects funded by national or EU funding bodies, in a leadership position, as grant director or coordinator. The first grant that he obtained in this role, entitled "Correlation and integration of Microscopy and Nanoscopy Data by Advanced Computer Vision Methods" (MICRONANO, 2015-2017) was awarded in the TE-2014 competition organized by UEFISCDI for Establishing Young Research Teams, where his application was ranked 1st in 493 proposals submitted to the Engineering Sciences domain. Since then, he was (or still is) Principal Investigator for over 10 grants, with a total budget > 2.5 mil EUR, including for two European collaborative projects funded under H2020 ATTRACT's competition for breakthrough technology concepts. Over the past five years he was: **(1)** Director for the Grant PN-III-P3-3.1-PM-RO-CN-2018-0177: "Novel Optical Imaging Approaches for the In-depth Understanding of Advanced Nanostructured Materials and their Interaction with Biological Species" (NANOMATBIOIMAGE, 2018-2019); **(2)** Director for PN-III-P1-1.1-TE-2016-2147: "Correlative optical imaging in the far-field and near-field regimes: technical developments and applications" (CORIMAG, 2018-2020), **(3)** Coordinator for the TEFPLASNOM Project funded by H2020 ATTRACT's competition for breakthrough technology concepts, entitled "A novel approach for near-field optical microscopy based on tip-enhanced fluorescence via plasmon resonance energy transfer (TEFPLASNOM, 2019-2020), **(4)** Coordinator for the HARMOPLUS Project funded by H2020 ATTRACT's competition for breakthrough technology concepts, entitled "Higher-harmonic Generation Microscopy Beyond the Diffraction Barrier based on Re-scan Strategies for Optical Data Acquisition" (HARMOPLUS, 2019-2020); **(5)** Coordinator for "PN-III-P2-2.1-PED-2019-1666: Method for fast and precise diagnostic of gastric cancers based on non-linear optical microscopy and Deep Learning" (GASTRODEEEP, 2020-2022); **(6)** Director of "PN-III-P1-1.1-TE-2019-1339: Augmenting Micro- and Nanoscale Optical Imaging Techniques with Generative Adversarial Networks" (OPTIGAN, 2021-2022), **(7)** Coordinator for RO-NO-2019-0601: Understanding Membrane Dynamics and their Implications for Cancer with Correlative Optical Nanoscopy and Artificial Intelligence (MEDYCONAI, 2021-2024). Noteworthy, Stefan is a three times recipient of the National Grant for Establishing Young Research Teams (TE-2014 -MICRONANO, TE-2016 -CORIMAG, TE-2019 -OPTIGAN), funded by the Romanian Executive Agency for Higher Education Research Development and Innovation Funding (UEFISCDI). In the frame of these grants he established, and further expanded, a highly successful team of young scientists, whose efforts in these three research projects led to the publication of 25> WOS indexed journal articles. Subsequently, the members of these three projects, have started winning grants of their own, and three of them are currently acting as Associate Professors in Physics and Microbiology, and one is Head of the Technical Department at Aerostar SA, an aviation factory in Bacau, Romania. This showcases the significant added value of the fostering research environment organized by Stefan as Principal Investigator in the projects aimed at establishing young research teams.

Besides this roles in national or EU funded grants, he participated as Partner Leader in two projects funded by Chinese funding bodies: (a) Project funded by the Bureau of International Co-operation of the Chinese Academy of Sciences entitled, "Biological Near - field fluorescence microscopic imaging system with functional nanomaterials" (2020-2021) (in collaboration with Principal Investigator Assoc. Prof. Fang Yang, Ningbo Institute of Material Technology & Engineering), (b) Project funded by the Guangxi Scientific Research And Technology Development

Plan: "Exploiting the application of single molecule imaging technology in researches of enzyme engineering" (2017-2020), (in collaboration with Prof. Shaomin Yan, Project Director on behalf of Guangxi Academy of Sciences in Nanning, China). Among other roles in research grants, Stefan was recently appointed Task Leader in the Horizon Europe project "Real-time biomarker detection systems for rapid medical decision-making in cancer and cardiac diseases (REALCARE, 2023-2028).

Besides his activity in research projects, Stefan has also been actively engaged in European Research Networking Actions. He acted as: **(i)** Management Committee Member and ITC Conference Grants Coordinator for the CA15124 COST Action: A New Network of European Bioimage Analysts to Advance Life Science Imaging (NEUBIAS, 2016-2020), **(ii)** Management Committee Member for CA16124 "Brillouin Light Scattering Microspectroscopy For Biological And Biomedical Research And Applications" (BIOBRILLOUIN, 2017-2021); and **(iii)** since 2020 he acts as Management Committee Member, Grant Awarding Coordinator, Short-Term Scientific Mission Coordinator, and Workgroup 6 ("Validation Of Functionality Through Advanced Characterisation Tools") Co-Leader for the CA19118 - High-performance Carbon-based composites with Smart properties for Advanced Sensing Applications (EsSENce). In this COST Action he was also main author of the D6.1 public deliverable "Design of multimodal characterisation system(s) that incorporate complementary techniques relevant for carbon-based nanocomposites research", available on the CA19118 website.

Since 2022 Stefan holds a Habilitation Degree in Physics. His Habilitation Thesis entitled "Advances in Medicine, Biology and Materials Science using Methods based on Non-conventional Microscopy Techniques" was defended at the Doctoral School for Applied Sciences at University Politehnica of Bucharest, in front of an international committee (Prof. Zeev Zalevsky, Bar Ilan University; Prof. Giuseppe Chirico, University of Milano Biccoca, Prof. Cristina Stan, University Politehnica of Bucharest). According to national legislation the conditions required to defend the Habilitation Thesis are equivalent to those required for the Full Professor position. These conditions are quantified by scores, depicting the scientific activity and impact of a candidate (number of publications, citations, research grants, etc.). For the Physics domain, the minimum overall score for a candidate to be eligible to defend the PhD Thesis according to OMENCS Nr. 6129 / 20.12.2016 [MO, I, 123 / 15.02.2017] was 10 points, and Stefan's Habilitation dossier presented 49.5 points.

At present Stefan is supervising 2 PhD students (in discussion with two additional candidates to start from autumn 2024). The themes of the two doctoral studies that he currently supervises are: i) "In-depth studies on advanced materials and biological samples by laser scanning microscopy techniques assisted by computational methods" - PhD Student Roxana (Buga) Totu, and ii) "Novel photonic methods and risk assessment models for the detection and forecast of health hazards specific to the aviation industry" - PhD Student Antoaneta (Peia) Patru. Among others roles related to his Habilitation, he was invited to serve in the defense committee of Dr. Riccardo Scodellaro (thesis title: "Novel Hybrid Ai-Phasor Based Tools For Remote Sensing And Histopathological Applications") in May 2023 (University Milano Biccoca, PhD Supervisor: Prof. Giuseppe Chirico), and has been invited to serve as a Reviewer for the PhD Thesis of Mr. Matteo Mariangeli, entitled "A correlative and multimodal microscopy approach to study the interaction of photosensitizers with biological samples" (University of Parma, PhD Supervisor: Prof. Stefano Carretta), (defense is upcoming). Stefan also served as a PhD Steering Committee Member ("Comisia de indrumare") for two PhD students who defended their theses at University Politehnica Bucharest: a) Dr. Alecs Andrei MATEI, PhD Thesis Title: "Studies Of Solid Condensed Matter Using High Resolution Methods", defense date: 2019; b) Dr. Lucian George EFTIMIE, PhD Thesis Title: "Research In Thyroid Pathology Using

Unconventional High-Resolution Laser Beam Techniques", defense date: 2020. He currently serves in the PhD Steering Committee of Ms. Anca Maria RADULESCU, who is implementing doctoral studies on biophotonics topics.

Among others, the scientific activities performed to date by Stefan have led to the publication of >80 journal articles published in Web of Science indexed journals (>25% as first or corresponding author), over 30 ISI conference proceedings articles, >100 presentations at international conferences and >25 invited talks (at conferences or international institutions). Over 90% of his journal articles are published in Q1/Q2 journals. In the past 5 years he published 32 Original Research Articles (7 as main author), 7 Review Articles (3 as main author), 3 Data Descriptors Articles (2 as main author), 3 Editorials (2 as main author). The 32 original research articles published in the past five years include 17 Q1 publications, among which 7 publications in top-tier journals with IF>10, such as PNAS (IF 11) (first/corresponding author), Advanced Materials (IF 29, article featured on the front cover), Advanced Science (IF 15, article featured on the inside cover), 2 x Nano Today (IF 17), Biomaterials (IF 15), Small (IF 15). Among his 7 Review Articles, 3 are published in Q1 journals, including in >10 IF journals, such as Journal of Advanced Research (IF 11) (co-corresponding author) and Laser & Photonics Reviews (IF 11). His recent Review/Perspective Article published in Biophysics Reviews as lead author, alongside pioneering scientists in biophotonics, AI, flexible optoelectronics, optical nanoscopy, advanced materials, and gastroenterology, covering next-generation endoscopes, was selected as a featured article by the journal, and highlighted by the American Institute of Physics on their SciLight platform. All his 3 Data Descriptor articles are published in Q1 journals: 2 x Scientific Data (IF 9), and GigaScience (9 IF). His work attracted 1465 citations according to Google Scholar, where his h-index is 21. In the past five years, according to Google Scholar his work attracted 1006 citations, including in top journals such as Chemical reviews (70 IF), Nature Methods (48 IF), Advanced Materials (29 IF), Advanced Functional Materials (17 IF), ACS Nano (17 IF), Nature Communications (16 IF), Advanced Science (15 IF), Small (15 IF), Nano Letters (10), and others. The vast majority of Stefan's publications have stemmed from international collaborations with partner groups from Europe, Asia, and USA.

In the past 5 years Stefan co-authored 25 presentations at international conferences & workshops, among these he was the lead author for 12 oral papers, of which 5 were invited papers. Stefan also delivered to date >10 invited talks at prestigious universities and research organizations in Europe and Asia: National Technical University of Athens (2014), University of Tartu (2015), Ningbo Institute of Materials Technology and Engineering (2019), Gunagxi Academy of Sciences (2019), University of Milano Biccoca (2020), University of Perugia (2020), University of Roma Tre (2020), University of Valencia (2022), Technical University of Crete (2023), Oslo University Hospital (2023), SINTEF-Norway (2023), University of Cyprus (2023).

Stefan has also edited three books: Microscopy and Analysis (2016), Micro and Nanotechnologies for Biotechnologies (2016), and Digital Image Processing (2012), all published by the InTech Open Access Publisher. He authored as well 5 book chapters, among which two have been published in the past five years in volumes published by Wiley, and IOP Publishing.

Concerning his editorial roles, the candidate acts as Senior Editor for Technical Area 9 "Imaging, propagation, spectroscopy" of the IEEE Photonics Journal (2021-ongoing), and as an Associate Editor for Frontiers in Photonics (2022-ongoing). He also served as **i)** Guest Associate Editor at Materials (Special Issue: "Artificial Intelligence for Advanced Materials Research"), 2020, **ii)** Guest Associate editor at the Biomedical Physics Section of Frontiers in Physics and Frontiers in Physiology (Research

Topic: "Advances in Label Free Tissue Imaging with Laser Scanning Microscopy Techniques"), 2019-2020; **iii)** Guest Associate Editor at the Nanoscience Section of Frontiers in Chemistry (Research Topic: "Recent Trends in Optical and Mechanical Characterization of Nanomaterials"), 2019-2020; **iv)** Guest Associate Editor at Scanning (Special Issue: "Novel Scanning Characterization Approaches for the Accurate Understanding and Successful Treatment of Oral and Maxillofacial Pathologies"), 2019-2020.

He was invited to review manuscripts for >30 journals, including by highly prestigious journals over the past five years, such as Advanced Materials, ACS Nano, Small Methods, Light: Science and Applications, IEEE Transactions on Medical Imaging, Microbiology Spectrum, ACS Sensors, ACS Photonics or Computer Methods and Programs in Biomedicine, denoting visibility in the (bio)(nano)photonics community.

Concerning his involvement in conference and scientific event organization, Stefan was an organizing committee member for the 2012 Workshop on Super-resolution Microscopy and Life Sciences (Brasov, Romania), was two times Member of the Organizing Committee for the International Conference on Transparent Optical Networks (ICTON 2018 & ICTON 2023, Bucharest, Romania), and has acted as Co-Chair of Session 3.8 – Special Technical Session – Nanostructured devices and smart materials for biophotonics applications, IEEE MELECON 2022, The 21st IEEE Mediterranean Electrotechnical Conference Palermo, Italy, 14-16 June 2022. He was also the main host organizer of the International Optical Nanoscopy Workshop on Bio, Carbon-based and Photonic Nanomaterials, organized in collaboration with Attocube Systems Germany and the CA19118 COST Action, in Bucharest, July 2023. Of recent, as a member of the IEEE organization he was invited to act as TPC Member of the IEEE MELCON 2024 Conference (Porto, June 2024). Stefan has also supported young scientists in Europe to attend conferences, as Coordinator of the Inclusiveness Target Countries Conference Grants Programs of COST Actions CA15124 NEUBIAS (2016-2020) and CA19118 ESSENCE (2020-2024).

Among others, Stefan is also a Member of the IEEE - Institute of Electrical and Electronics Engineers, the world's largest technical professional association, and was a member of the Optical Society of America (now Optica).

8. List of candidate's publications, with highlighting of relevant works published in the past 5 years. The webpage where the publications are available is also to be mentioned.

PUBLICATIONS IN WEB-OF-SCIENCE (WOS) INDEXED JOURNALS

Main author role is highlighted by **bold underline** font. Publications highlighted in grey have been published in the past five years. Links to publications available at: https://sgstanciu.cmmip-upb.org/.

2024

1. Kusnetz, B., Belhassen, J., Tranca, D. E., **Stanciu, S. G.,** Anton, S. R., Zalevsky, Z., Stanciu, G.A. & Karsenty, A. (2024). Generic arrays of surface-positioned and shallow-buried gold multi-shapes as reference samples to benchmark near-field microscopes. Part 1: Applications in s-SNOM depth imaging. *Results in Physics*, 107318.

2023

2. Roadmap on Label-Free Super-Resolution Imaging, V. N. Astratov, Y. B. Sahel, Y. C. Eldar, L. Huang, A. Ozcan, N. Zheludev, J. Zhao, Z. Burns, Z. Liu, E. Narimanov, N. Goswami, G. Popescu, E. Pfitzner, P. Kukura, Y.-T. Hsiao, C.-Lung Hsieh, B. Abbey, A. Diaspro, A. LeGratiet, P. Bianchini, N. T. Shaked, B. Simon, N. Verrier, M. Debailleul, O. Haeberlé, S. Wang, M. Liu, Y. Bai, J.-X. Cheng, B. S. Kariman, K. Fujita, M. Sinvani, Z. Zalevsky, X. Li, G.-J. Huang, S.-W. Chu, O. Tzang, D. Hershkovitz, O. Cheshnovsky, M. J. Huttunen, **S. G. Stanciu**, V. N. Smolyaninova, I. I. Smolyaninov, U. Leonhardt, S. Sahebdivan, Z. Wang, B., Luk'yanchuk, L. Wu, A.V. Maslov, B. Jin, C. R. Simovski, S. Perrin, P. Montgomery, and S. Lecler, 2023, *Laser & Photonics Reviews*, 17 (12), 2200029, DOI: 10.1002/lpor.202200029 **(article featured on the front cover)**

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2. Super-Resolved Non-linear Optical Microscopy: Architectures and Perspectives, **(Invited) S.G. Stanciu**, R. Hristu, G. A. Stanciu, D.E. Tranca, L. Eftimie, A. Dumitru, M. Costache, H.A. Stenmark, J.M. Bueno, P. Bianchini, Erik M.M. Manders, Transnational Multiplier Event, EEA Grants, 18-19 October, 2023, Bucharest, Romania

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34. Nanoscale investigations of optical fiber by using scattering scanning near-field optical microscopy (**Invited**), D.E. Tranca, C. Stoichita, R. Hristu, **S.G. Stanciu,** C.V. Sammut, G.A. Stanciu, 20th International Conference on Transparent Optical Networks (ICTON 2018), Buharest, Romania, 1-5 July, 2018
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46. Investigation on the biological samples by using label free techniques in laser scanning microscopy **(invited)**, G.A. Stanciu, C. Stoichita, D.E. Tranca, R. Hristu, and **S.G. Stanciu**, 19th International Conference on Transparent Optical Networks ICTON 2017, Girona, Spain, 2-6 July, 2017

47. **(invited)** Correlative optical imaging in the far-field and near-field regimes: architecture, applications and perspectives, **S.G. Stanciu** et al, The 25th International Conference on Advanced Laser Technologies (ALT'17), Busan, Korea, 10-15 September 2017

2016

48. Multimodal Imaging of nanostructured materials and biological samples in the far-field and near-field Regimes, **S.G. Stanciu**, D.E. Tranca, C. Stoichita, R. Hristu, L. Pastorino, J.M. Bueno, C. Ruggiero, A. Antipov, G.A. Stanciu et. al., *The Spanish-Portuguese Meeting for Advanced Optical Microscopy, Bilbao*, Spain, 5-7 October, 2016 **(Presentation Award)**

49. Bag-of-Features approaches for classification of combined laser scanning microscopy and spectroscopy data sets **(invited)**, **S.G. Stanciu** et. al., 4th International Symposium "Lasers in Medicine and Biophotonics", Sankt Petersburg, Russia 27 June – 1 July, 2016

50. Combined Far-field and Near-field Imaging Using a Multimodal Architecture, S.G. Stanciu et. al, International Conference on Nanoscopy, Basel, Switzerland, 7-10 June, 2016
51. Multimodal Imaging with Far-field and Near-field Techniques: Arhitecture and Applications, **S.G. Stanciu** et. al., Junior Euromat 2016, Lausanne, Switzerland, 10-14 July, 2016
52. Homogeneity characterization of Al91–Fe5–V2–Si2 master alloy based on SDAR-OES data and fractal analysis of CLSM micrographs, A.A. Matei, I.Pencea, G.A. Stanciu, R. Hristu and **S.G. Stanciu**, 24 International *Conference* on *Materials* and Technology (24 ICM&T), Portoroz, Slovenia, 28-30 September, 2016
53. Ocular Tissues Investigated by Using Scattering Scanning near-Field Optical Microscopy and Atomic Force Microscopy , J.M. Bueno, **S.G. Stanciu**, D.E. Tranca, F.J. Avila, M. Aviles-trigueros, G.A. Stanciu, Focus on Microscopy, Taipei, Taiwan, 20-23 March, 2016
54. Nonlinear Optical Effects Used for Investigations on Biological Samples at Micro and Nanoscale (invited), G.A Stanciu, D.E. Tranca, R. Hristu, S.G. Stanciu, C. Stoichita, A. Toma, IEEE ICTON 2016, Trento, Italy, 10-4th of July, 2016

2015

55. Combined Multimodal Imaging at Micro- and Nanoscale Using Complementary Constrast Mechanisms, **S.G. Stanciu**, C. Stoichita, R. Hristu, D.E. Tranca and G.A. Stanciu, EuroNanoForum 2015, Riga, Latvia, 10-12th of June, 2015 **(Best Poster Presenter Award)**
56. Combining Multiphoton Laser Scanning Microscopy and Bag-of-Features Image Classification for Automated Disease Diagnosis (invited), **S.G. Stanciu,** R. Hristu, D.E. Tranca, G.A. Stanciu, J.M. Bueno, International Conference on Advanced Laser Technologies (ALT 15), 2015, 7-11 September, Faro, Portugal.
57. A Platform for Micro- and Nanoscale Optical Imaging Using Complementary Contrast Mechanisms, **S.G. Stanciu**, C. Stoichita, R. Hristu, D.E. Tranca and G.A. Stanciu, 15th annual meeting of the European Light Microscopy Initiative (ELMI), Sitges, Spain, 19th-22nd of May, 2015
58. Bags-of-Features for classification of Laser Scanning Microscopy Data (invited), **S.G. Stanciu**, R. Hristu, D.E. Tranca, G.A. Stanciu, IEEE ICTON 2015, Budapest, Hungary, 5-9th of July, 2015
59. Investigations on image contrast in pseudo-heterodyne scattering scanning near-field optical microscopy, D.E. Tranca, **S.G. Stanciu**, C. Stoichita, R. Hristu, S.A.M. Tofail & G.A. Stanciu, Focus on Microscopy, Gottingen, Germany, March 29-April 1, 2015
60. Interrelationship between electron-beam-induced surface charge and carbon contamination on hydroxyapatite, R. Hristu, **S.G. Stanciu**, D.E. Tranca & G.A. Stanciu, Focus on Microscopy, Gottingen, Germany, March 29-April 1, 2015
61. On Packing Laser Scanning Microscopy Images by Reversible Watermarking: a Case Study, C. Dragoi, **S.G. Stanciu**, D. Coltuc, D.E. Tranca, R. Hristu and G.A. Stanciu, 23rd IEEE European Signal Processing Conference (EUSIPCO 2015), Nice, France, 31st August-4th September, 2015
62. Automatic Moiré Pattern Removal in Microscopic Images, G.M. Ionita, D. Coltuc, **S.G. Stanciu,** D.E. Tranca, 19th International Conference on System Theory, Control and Computing (ICSTCC 2015), Cheile Gradistei-Fundata, Romania, 14-16 October, 2015

2014

63. Investigations on Organic Fluorophore Doped Silica Nanoparticles by Apertureless Scanning Near-Field Optical Microscopy **(invited)**, **S.G. Stanciu**, D.E. Tranca, L. Tarpani, G.A. Stanciu, R. Hristu and L. Latterini, 16th International Conference on Transparent Optical Networks, Graz, Austria, 6-10 July 2014

64. Combined microscopy techniques boost biomedical imaging of ocular tissues, J.M. Bueno, D. Tranca, F.J. Valiente-Soriano, M. Aviles-Trigueros, **S.G. Stanciu** & G.A. Stanciu, Focus On Microscopy, Sydney, Australia, April 13-16, 2014

65. Hydroxyapatite surface charge investigated by scanning probe microscopy **(invited)**, *R. Hristu, S.A.M. Tofail,* ***S.G. Stanciu****, D.E. Tranca, and G.A. Stanciu,* 16th International Conference on Transparent Optical Networks, Graz, Austria, 6-10 July 2014

66. Scattering scanning near field optical microscopy used for nanoscale investigations **(invited)**, G.A. Stanciu, D.E. Tranca, R. Hristu, C. Stoichita and **S.G. Stanciu**, International Conferences on Laser Applications in Life Sciences (LALS), Ulm, Germany, 29th June – 2nd July, 2014

2013

67. Investigations on skin cancers by nonlinear optical microscopy, **S.G. Stanciu**, M. Popescu, R. Hristu, V. Enache, D.E. Tranca & G.A. Stanciu, Focus on Microscopy 2013, Maastricht, The Netherlands

68. Semi-automated diagnostic of liver fibrosis by two photon excitation microscopy and bag-of-features image classification, **S.G. Stanciu**, S. Xu, Q. Peng, J. Yan, G.A. Stanciu & H. Yu, Focus on Microscopy 2013, Maastricht, The Netherlands

69. Investigations at nanoscale by using fluorescence in apertureless scanning near field microscopy (invited), G.A. Stanciu, D.E. Tranca, R. Hristu, C. Stoichita, **S.G. Stanciu,** 15th International Conference on Transparent Optical Networks 2013, Cartagena, Spain, June 23-27, 2013

2012

70. Nonlinear effects in scanning laser microscopy used to investigate silicon carbide polytypes, G.A. Stanciu, R. Hristu, **S.G. Stanciu**, D.E. Tranca, E.K. Polychroniadis, Focus on Microscopy, Singapore, 2012

71. Enhancing local feature matching between CSLM images by histogram modeling, **S.G. Stanciu,** D. Coltuc, R. Hristu, D. Tranca, G.A. Stanciu, Focus on Microscopy, Singapore, 2012

72. Metalic samples investigated by using a scattering near field optical microscope, G.A. Stanciu, C. Stoichita, R. Hristu, **S.G. Stanciu**, D.E. Tranca, International Conference on Trasparent Optical Networks 2012, Warwick, England (invited lecture)

73. Scattering near-field optical microscopy for gold nano-particles investigations, Denis E. Tranca, Radu Hristu, **Stefan G. Stanciu** and George A. Stanciu, 2012 Workshop on Super-resolution and Life Sciences, 3-6 October 2012, Brasov, Romania

74. Optical and morphological characterization of electron beam created surface potential microdomains on hydroxyapatite coatings, Radu Hristu, **Stefan G. Stanciu**, Denis E. Tranca, George A. Stanciu, 2012 Workshop on Super-resolution and Life Sciences, 3-6 October 2012, Brasov, Romania

75. Towards semi-automated diagnostic of liver fibrosis by two photon excitation and bag-of-(SIFT)-features, **Stefan G. Stanciu**, Shuoyu Xu, Qiwen Peng, Jie Yan and Hanry Yu, 2012 Workshop on Super-resolution and Life Sciences, 3-6 October 2012, Brasov, Romania

2011

76. Completing Missing or Damaged Regions in Microscopy Images by Inpainting, **S.G.Stanciu,** R.Hristu and G.A.Stanciu, Focus on Microscopy 2011, Konstanz, Germany
77. Two photon excitation imaging used to investigate photonic quantum ring lasers, R.Hristu, **S.G.Stanciu** and G.A.Stanciu, Focus on Microscopy 2011, Konstanz, Germany
78. Automatic estimation of stacking fault density in SiC specimens imaged by Transmission Electron Microscopy, **S. G. Stanciu**, D. Coltuc, G.A. Stanciu, A. Andreadou, A. Mantzari and E.K.Polychroniadis, *International Conference on Trasparent Optical Networks* 2011 (June), Stockholm, Sweden
79. Investigations on SiC by using nonlinear effects in scanning laser microscopy, *R. Hristu, **S.G. Stanciu,** G.A. Stanciu, E.K. Polychroniadis, International Conference on Trasparent Optical Networks 2011 (June)*, Stockholm, Sweden, (invited)

2010

80. Optical Properties of the Materials Investigated at Nanoscale Resolution by using Apertureless Scanning Near Optical Microscopy, **S.G.Stanciu**, R.Hristu and G.A.Stanciu, FEMS Junior Euromat Conference 2010, Lausanne, Switzerland
81. Optical induced current technique used to investigate the photonic quantum ring laser Stanciu, G.A. Hristu, R., **Stanciu, S.G.** O'Dae Kwon Kim, D.K. *IEEE International Conference on Trasparent Optical Networks 2010*, Munchen, Germany (invited)

<2010

82. Scanning Laser Microscopy: From Far Field to Near Field. Stanciu, GA; Stoichita, C; **Stanciu, SG.** *ICTON: 2009 11th International Conference on Transparent Optical Networks*, (invited) VOLS 1 AND 2545-549 2009 S Miguel, PORTUGAL
83. Feature Based Recognition of Photonic Devices in Images Obtained by Confocal Scanning Laser Microscopy, **Stanciu, SG;** Hristu, R; Boriga, R; Stanciu, G, *ICTON: 2009 11th International Conference on Transparent Optical Networks*, vols 1 and 21330-1333, S Miguel, Portugal
84. Flexible Production of Light Fringes in Structured Illumination Microscopy, Genaro Saavedra, E. Sánchez-Ortiga, **S. Stanciu**, and M. Martínez-Corral, *Focus on Microscopy 2009*, Krakow, Poland
85. Image fusion for photonic quantum ring laser structures investigated by confocal scanning laser microscopy (Invited), **S.G. Stanciu**, D. Coltuc, R. Hristu, C. Stoichita, G.A. Stanciu, *3rd ICTON-MW 2009*, Angers, France
86. Near field investigation based on a new apertureless near field optical microscope, (Invited), C. Stoichita, R. Hristu, **S.G. Stanciu**, G. Stanciu, *3rd ICTON-MW 2009*, Angers, France
87. A simple approach to telemicroscopy, **Stefan G. Stanciu** , George A. Stanciu, *IADIS 2008 International e-society conference*, Algarve, Portugal
88. **Tunneling at emitter periphery in silicon nitride passivated InP/InGaAs HBTs,** D. Sachelarie, G.A. Stanciu, **S.G. Stanciu**, G. Predusca, *Indium Phosphide and Related Materials IPRM May 2008,* Versaille, France
89. Semiconductor Quantum Dots Investigated by X-Ray Diffraction, Scanning Laser Microscopy and Atomic Force Microscopy, **S.G. Stanciu**, R. Hristu, G.A. Stanciu, *Junior Euromat Conference 2008*, Lausanne, Switzerland
90. Investigation on photonic-corral-mode quantum ring lasers by laser scanning microscopy, Stanciu, GA; **Stanciu, SG**; Hristu, R; Kwon, O; Kim, DK, *10th International Conference on Transparent Optical Networks 2008*, Athens, Greece (invited)

91. Photonic-Corral-Mode Quantum Ring Lasers investigated by Laser Scanning Microscopy and Near Field Microscopy, Stanciu, GA; **Stanciu, SG**; Hristu, R; Kim, DK; Kwon, O *2008 2nd ICTON Mediterranean Winter (ICTON-MW),* Marrakech, Morocco (invited)

92. Compensating the effects of light attenuation in confocal microscopy by histogram modelling techniques, **S.G. Stanciu**, J. Friedmann, *2008 2nd ICTON Mediterranean Winter (ICTON-MW),* Marrakech, Morocco

93. Examination of sol-gel coatings by means of laser scanning microscopy and electron microscopy, G. Stanciu , B. Savu , **S. Stanciu** , D. Bojin , J. Bauer , A. Ulatowska-Jarza, I. Holowacz , H. Podbielska, *Focus on Microscopy 2007*, Valencia

94. Statistical pattern recognition methods for evaluation of pure and doped sol-gel materials basing on microscopic images **S.G. Stanciu,** G.A. Stanciu, B. Savu, J. Bauer, A.Ulatowska-Jarza, I. Hołowacz, H. Podbielska, *IXth International Conference on Frontiers of Polymers and Advanced Materials (ICFPAM) 2007* (invited), Cracow, Poland

95. Atomic force microscopy analysis of orientation effect on InP-based heterojunction bipolar transistors, D. Sachelarie, **S.G. Stanciu**, G.A. Stanciu, *International Conference on Transparent Optical Networks MW 2007,* Sousse , Tunsia

96. Investigation on CdS: Mn quantum dots using scanning laser microscopy, **Stanciu, S. G**, Hristu, R., Savu, B., Stanciu, G. A., Mohanta, D., Ahmed, G.A.,Choudhury,A. 2007 ICTON Mediterranean Winter Conference, Sousse, Tunisia (invited)

97. Atomic Force Microscopy and Scanning Laser Microscopy Investigations on Energetic Oxygen Ion Irradiated Elongated CdS:Mn Nanostructures, G. A. Stanciu, **S.G. Stanciu**, J. Friedmann, D. Mohanta, A Choudhury, *Nanoscience and Nanotechnology 2006*, Basel, Switzerland

98. A Study of Novel Langmuir-Blodgett Thin Film Materials Using Atomic Force Microscopy, R. Capan , M. Evyapan , H. Namlı, O. Turhan, **S. Stanciu**, B. Savu, J. Friedmann, G.A. Stanciu, *Nanoscience and Nanotechnology 2006*, Basel, Switzerland

99. Investigations on Energetic Oxygen Ion Irradiated Elongated CdS:Mn Nanostructures using Atomic Force Microscopy and Scanning Laser Microscopy, G. A. Stanciu, **S.G. Stanciu,** I. Sandulescu, B. Savu, J. Friedmann, D Mohanta, F Singh, D K Avasthi, A Choudhury, *Conference on Adavanced Laser Technologies 2006*, Brasov, Romania.

100. Investigation on novel Langmuir-Blodgett thin film materials, R. Capan , M. Evyapan , H. Namlı , O. Turhan , **S. Stanciu** , B. Savu , J. Friedmann , G.A. Stanciu, *International Conference Advanced Laser Technologies, 2006*, Braşov, Romania

101. Confocal scanning laser microscopy used to investigate hydroxyapatite grown on the bioactive glass, G. A. Stanciu, I Sandulescu, B. Savu, **S.G. Stanciu**, K.M. . Paraskevopulos, X. Chatzistavrou, E. Kontonasaki, P. Koidis, *International Conference on Biomedical and Pharmaceutical Engineering 2006,* Singapore

102. Confocal Scanning Laser Microscopy used for surface analyze of hydoxyapatite grown on bioactive glass, **S. G. Stanciu**, I. Sandulescu and G. A. Stanciu, *13th General Conference, of the Europen Physical Society 2005*, Bern, Switzerland

103. Scanning third-harmonic microscopy of a thin film of CdS semiconductor quantum dots embedded in a polymeric matrix, G. A. Stanciu, I.Sandulescu, **S.G.Stanciu** and G. Boyer, *13th General Conference, of the Europen Physical Society 2005*, Bern, Switzerland

104. Surface Topography Characterization of Apatite Formation on Bioactive Glass Modified Dental Ceramics Using Confocal Laser Scanning CLSM) and Environmental Scanning Electron Microscopy (ESEM), G.A. Stanciu, S.G. Stanciu, C. Dan, K.M. Paraskevopoulos, X. Chatzistavrou, E. Kontonasaki, P. Koidis, Bioceramics 18, *18th*

International Symposium of ceramics in Medicine, The annual meeting of the International Society for Ceramics in medicine 2005, Kyoto, Japan.

105. Confocal Laser Scanning Microscopy used to investigate the hydroxycarbonate apatite layer formation on the bioactive glass surface, G. A. Stanciu, I. Sandulescu, **S.G. Stanciu**, K.M. Paraskevopoulos, P. Koidis, *OWLS 2004*, Melbourne, Australia

106. Investigations on bioactive materials used in restorative dentistry and implantology by using Scanning Electron Microscopy, Fourier Transform Infrared Spectroscopy and Confocal Scanning Laser Microscopy, P. Koidis, K.M. Paraskevopoulus , **S.G. Stanciu** and G.A. Stanciu, *Focus on Microscopy 2003,* Genoa, Italy.

9. List of research projects won by the candidate in competitions, and their value.

Program/Project	Duration
RO-NO-2019-0601: Understanding Membrane Dynamics and their Implications for Cancer with Correlative Optical Nanoscopy and Artificial Intelligence (MEDYCONAI) –**Project Coordinator** (*in collaboration with Partner Leader Prof. Harald A . Stenmark, Oslo University Hospital*) **Total project value: 1,633,450 EUR**	2021-2023
PN-III-P1-1.1-TE-2019-1339: Augmenting Micro- and Nanoscale Optical Imaging Techniques with Generative Adversarial Networks (OPTIGAN) –**Project Director** **Total project value: 89,289 EUR**	2021-2022
PN-III-P2-2.1-PED-2019-1666: *Method for fast and precise diagnostic of gastric cancers based on non-linear optical microscopy and Deep Learning (GASTRODEEEP)* –**Project Coordinator** *(in collaboration with Partner Leader Prof. Mariana Costache, Carol Davila University of Medicine and Pharmacy)* **Total project value: 124,041 EUR**	2020-2022
Project funded by H2020 ATTRACT's competition for breakthrough technology concepts: Higher-harmonic Generation Microscopy Beyond the Diffraction Barrier based on Re-scan Strategies for Optical Data Acquisition (HARMOPLUS) –**Project Coordinator** (*in collaboration with Partner Leader Prof. Erik Manders, Confocal.nl*) **Total project value: 100,000 EUR**	2019-2020
Project funded by H2020 ATTRACT's competition for breakthrough technology concepts: A novel approach for near-field optical microscopy based on tip-enhanced fluorescence via plasmon resonance energy transfer (TEFPLASNOM) –**Project Coordinator** (*in collaboration with Partner Leader Prof. Loredana Latterini, University of Perugia*) **Total project value: 100,000 EUR**	2019-2020
PN-III-P1-1.1-TE-2016-2147: Correlative optical imaging in the far-field and near-field regimes: technical developments and applications (CORIMAG), **Project Director** **Total project value: 96,700 EUR**	2018-2020
PN-III-P3-3.1-PM-RO-CN-2018-0177: Novel Optical Imaging Approaches for the In-depth Understanding of Advanced Nanostructured Materials and their Interaction with Biological Species (NANOMATBIOIMAGE), **Project Director** (*in collaboration with Co- Principal Investigator Dr. Fang Yang, Ningbo Institute of Material Technology &. Engineering, China*) **Total project value: 10,917 EUR**	2018-2019
PN-III-P2-2.1-PED-2016: An experimental machine intelligence framework for the automated differentiation of healthy, dysplastic and malignant tissues based on multiphoton microscopy datasets (MICAND) **Project Coordinator** *(in collaboration with Prof. Mariana Costache, Partner Leader on behalf of "Carol Davila" University of Medicine and Pharmacy in Bucharest)*	2017-2018

Total project value: 131,171 EUR	
FRAMEWORK FOR BILATERAL SCIENTIFIC COOPERATION ROMANIA – CHINA: INVESTIGATIONS ON THE FUNCTION AND MICRO-STRUCTURE OF THE CELLULASE SECRETION SYSTEM BY HIGH-RESOLUTION IMAGING TECHNIQUES (CESESYS) **Project Director** (in collaboration with Co-Principal Investigator Dr. Guang Wu from Guangxi Academy of Sciences in Nanning) **Total project value: 11,170 EUR**	2016-2017
PN-II-RU-TE-2014-4-1803: CORRELATION AND INTEGRATION OF MICROSCOPY AND NANOSCOPY DATA BY ADVANCED COMPUTER VISION METHODS (MICRONANO), **-Project Director** **Total project value: 123,425 EUR**	2015-2017
POSDRU/159/1.5/S/137390/ POST-DOCTORAL RESEARCH FELLOWSHIP: COMPUTER VISION TECHNIQUES FOR AUTOMATED ANALYSIS AND CORRELATION OF SCANNING LASER AND SCANNING PROBE MICROSCOPY DATA (COVIAC), -PRINCIPAL INVESTIGATOR,), **Total fellowship value: ~70k Lei (+ Excellence Awards ~25k Lei)**	2014-2015
CH-SCIEX/ POST-DOCTORAL RESEARCH FELLOWSHIP: REGISTRATION AND FUSION OF HIGH RESOLUTION IMAGING DATA (IMPLEMENTED AT ETH ZURICH), **-PRINCIPAL INVESTIGATOR** **Total fellowship value: 32,495 EUR**	2013

10. List of patent applications submitted or accepted.

The candidate is currently in the process of preparing a patent application to be submitted to the US Patent & Trademark Office, covering intellectual property rights related to a multimodal system for optical nanoscopy, presented in section 6, developed in the project RO-NO-2019-0601.