



**PUBLIC SELECTION ESTABLISHED WITH DIRECTOR'S DECREE NO. 2022\_PRA\_DFIS\_2 OF 29/04/2022 PURSUANT TO THE NOTICE PUBLISHED IN THE OFFICIAL GAZETTE NO. 20/05/2022, n. 40 FOR 1 POSITION AS ASSOCIATE PROFESSOR FOR THE COMPETITION SECTOR 02/B1 - EXPERIMENTAL PHYSICS OF MATTER - SDS FIS/01 - EXPERIMENTAL PHYSICS, PURSUANT TO ART. 18 - LAW 240/2010, AT THE POLITECNICO DI MILANO - DEPARTMENT OF PHYSICS (PROCEDURE CODE 2022\_PRA\_DFIS\_2).**

## FINAL REPORT

The Selection Board, appointed with RD Index No. 5972 ref. No. 150825 of 22 June 2022, composed by the following Professors:

Prof. BERTACCO Riccardo - Politecnico di Milano;  
Prof. MARANGOLO Massimiliano - Sorbonne Université;  
Prof.ssa NOHEDA Beatriz - University of Groningen,

met on 20/07/2022 at 12:00, for the first teleconference meeting.  
Each board member was connected from his/her workstation.

At the start of the session the members of the Selection Board named the Chairman and the Secretary of the Selection Board:

Marangolo Massimiliano, Full Professor at Sorbonne Université, Chairman;  
Bertacco Riccardo, Full Professor at Politecnico di Milano, Secretary.

Each member of the board declared not to have conjugal nor family relationship or other degree of kinship or affinity up to the fourth degree, not to be in same-sex civil union (as per art. 1 of Law No. 76 of 20.05.2016) and not to form a cohabiting couple (as per art. 1, paragraphs 37 et seq. of Law No. 76 of 20.05.2016) with the other members of this board and that there were no reasons for abstention pursuant to arts. 51 and 52 of the Civil Procedure Code.

The members of the Selection Board and the Secretary declared, pursuant to art. 35-bis of Legislative Decree 165/2001, not to have criminal convictions, even with non-definitive sentences, for offences provided for in Chapter I, Title II of the second book of the Criminal Code.

The Selection Board established the criteria and the parameters according to which the assessment was carried out, and set the minimum score below which the candidate shall not be included in the ranking of candidates.

On 22/09/2022 at 09:00, the Selection Board met for the second teleconference meeting to inspect the list of applicants, who were:

- 1) CATTONI ANDREA
- 2) MASSARO ALESSANDRO
- 3) SIMONE GIUSEPPINA

Each member of the board declared not to have conjugal nor family relationship or other degree of kinship or affinity up to the fourth degree, not to be in same-sex civil union (as per art. 1 of Law No. 76 of 20.05.2016) and not to form a cohabiting couple (as per art. 1, paragraphs 37 et seq. of Law No. 76 of 20.05.2016) with the candidates and stated that there were no reasons for abstention pursuant to arts. 51 and 52 of the Civil Procedure Code.

The Selection Board verified the documentation submitted by the candidates and made an extensive preliminary discussion on the evaluation procedure.

On 04/10/2022 at 14:00, the Selection Board met for the third teleconference meeting.

Pursuant to the examination and after adequate evaluation, the Selection Board assigned a score to each of the established criteria and a judgment to each publication submitted by the candidate; furthermore, the board evaluated the knowledge of the English language.

Therefore, the board, considering the sum of the scores given, expressed a collective judgment in relation to the quantity and the quality of publications, evaluating the overall productivity of the applicant, also with regard to his/her period of activity.

The above-mentioned judgments are attached to this report and they are an integral part of it (Attachment No. 1 to this final report).

The Selection Board drew up a ranking of candidates selected to carry out the scientific/teaching functions for which the selection was called, in a number equal to a maximum of five times the number of positions available in the competition (Attachment No. 2 to this final report).

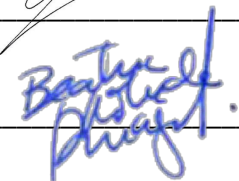
#### THE SELECTION BOARD

Prof. Massimiliano Marangolo (Chairman)




---

Prof. Beatriz Noheda (Member)



---

Prof. Riccardo Bertacco (Secretary)



---



PUBLIC SELECTION ESTABLISHED WITH DIRECTOR'S DECREE NO. 2022\_PRA\_DFIS\_2 OF 29/04/2022 PURSUANT TO THE NOTICE PUBLISHED IN THE OFFICIAL GAZETTE NO. 20/05/2022, n. 40 FOR 1 POSITION AS ASSOCIATE PROFESSOR FOR THE COMPETITION SECTOR 02/B1 - EXPERIMENTAL PHYSICS OF MATTER - SDS FIS/01 - EXPERIMENTAL PHYSICS, PURSUANT TO ART. 18 - LAW 240/2010, AT THE POLITECNICO DI MILANO - DEPARTMENT OF PHYSICS (PROCEDURE CODE 2022\_PRA\_DFIS\_2).

## ATTACHMENT No. 1 to the FINAL REPORT

CRITERIA	Quality of scientific and/or project production, assessed on the basis of criteria and parameters recognized by the international scientific community of reference	Teaching activity at the university level in Italy or abroad	Scientific responsibility for funded research projects	Results obtained in technology transfer in terms of participation in the creation of new enterprises (spin off), development, use and marketing of patents	Total
Cattoni Andrea	40	8	29	10	87
Massaro Alessandro	32	8	24	10	74
Simone Giuseppina	30	14	10	8	62

### CANDIDATE: Cattoni Andrea

#### CURRICULUM

2004 Electronic Engineering Degree – Politecnico di Milano

2008 PhD in Physics at Politecnico di Milano

2008 Post-Doc at LNESS center – Politecnico di Milano

2008-2012 Post-doc, *Laboratoire de photonique et de nanostructures* (LPN), Marcoussis, France

2012-2013 « Fonctionnaire stagiaire Chargé de recherche » (CNRS Researcher). Section : Micro and Nanotechnologies. *Laboratoire de photonique et nanostructures* (LPN), Marcoussis, France

2013-2016 Titularisé « Chargé de recherche » (CNRS Researcher). *Laboratoire de photonique et nanostructures*, Marcoussis, France

2016-now: « Chargé de recherche » (CNRS Researcher). *Centre de Nanosciences et de Nanotechnologies (C2N), Université Paris-Saclay*, Palaiseau, France. Also affiliated with *Institut Photovoltaïque d'Île-de-France (IPVF)*, Palaiseau, France.

Italian Qualification as Associate professor (Abilitazione Scientifica Nazionale 2021-2023 ai sensi dell'art. 16 della Legge 240/2010 per il S.C.02/B1 - FISICA SPERIMENTALE DELLA MATERIA quale professore di II fascia)

Current Institutional duties: Co-director with Stéphane Collin of the SUNLIT research team at C2N. Since 2019, member of the “Technological animation group” (5 people) of the C2N, in support of the scientific coordination of the C2N technological facilities and the strategic investment in equipment. Animateur de groupe ODIN (Optoelectronic Devices and INnovation), 11 researchers and about 20 non-permanent staff. Serving as representative of the group at Photonics department council and organizer of weekly group meetings and “Journal Clubs”. Participation as jury member of PhD Thesis.

Research areas: (i) Light trapping in ultrathin solar cells based on III-V, Cu(In,Ga)Se<sub>2</sub>, Si and CdTe; (ii) Molecular-beam epitaxy of III-V semiconductor nanowires by Vapor-Liquid-Solid method for Photovoltaic; (iii) Large surface-area nanoimprint lithography of novel hybrid and sol-gel derived materials; (iv)

Nanolithography and single-digit nanofabrication by e-beam lithography, He-FIB and related innovative pattern transfer processes; (v) wafer bonding.

Techniques and methods: Clean room techniques and methods for lithography (Optical lithography, Nanoimprint Lithography, Electron Beam Lithography), material deposition (MBE, e-beam evaporation, magnetron sputtering, PECVD), pattern transfer (Reactive Ion Etching, Inductively Coupled Plasma RIE (ICP-RIE) of IV-IV and III-V semiconductors, Ion beam Etching), thermal treatments and back-end processing (Rapid Thermal Annealing, tubular ovens, wafer bonding,  $\mu$ welding) and characterization tools (AFM, SEM, Cathodoluminescence, Photoluminescence, Ellipsometry).

Publications and dissemination activity: Coauthor of 91 publications (Scopus – September 2022). 32 orals at scientific conferences, with 7 invited talks (5 at international conferences + 2 at national conferences). The 12 publications presented and the whole scientific production are evaluated in the subsequent paragraphs “SUBMITTED PUBLICATIONS” and “QUALITY OF SCIENTIFIC AND/OR PROJECT PRODUCTION, ASSESSED ON THE BASIS OF CRITERIA AND PARAMETERS RECOGNIZED BY THE INTERNATIONAL SCIENTIFIC COMMUNITY OF REFERENCE”.

International profile: Many scientific collaborations with international research groups (mainly from Europe and Japan) born in the framework of EU projects on Photovoltaics and nanotechnology. Activity as Guest editor and co-organizer of international Schools on the Physics of Solar Cells.

Didactic activity: Since 2014, lectures and laboratory activities in master courses and PhD courses on Micro-Nanofabrication techniques. Supervision of PhD and master thesis. The whole didactic activity is evaluated in the subsequent paragraph “DIDACTIC ACTIVITIES CARRIED OUT IN ITALIAN OR FOREIGN UNIVERSITIES OR BODIES”.

Research Projects: Coordinator of 4 National Research Projects, local scientific responsible of 4 EU projects, participant in 8 European and international research projects funded by public funding agencies. The whole activity is evaluated in the subsequent paragraph “SCIENTIFIC RESPONSIBILITY FOR FUNDED RESEARCH PROJECTS”.

Technology transfer: Co-inventor of 1 national patent and 4 international patents. Collaboration with industries involved in research projects. The whole activity is evaluated in the subsequent paragraph “RESULTS OBTAINED IN TECHNOLOGY TRANSFER IN TERMS OF PARTICIPATION IN THE CREATION OF NEW ENTERPRISES (SPIN OFF), DEVELOPMENT, USE AND MARKETING OF PATENTS”.

#### SUBMITTED PUBLICATIONS:

No. of publications	Type/Title of Publication	Judgment
1	“Quantitative Assessment of Carrier Density by Cathodoluminescence. I. GaAs Thin Films and Modeling”; Hung-Ling Chen, Andrea Scaccabarozzi, Romaric De Lépinau, Fabrice Oehler, Aristide Lemaître, Jean-Christophe Harmand, <b>Andrea Cattoni</b> , Stéphane Collin, Physical Review Applied 15, 024006/024007 (2021)	Good
2	“Interface Engineering of Ultrathin Cu(In,Ga)Se <sub>2</sub> Solar Cells on Reflective Back Contacts”; L. Guillard, <b>A. Cattoni</b> , W.-C. Chen, J. Goffard, L. Riekehr, J. Keller, M. Jubault, N. Naghavi, M. Edoff, S. Collin; Progress in Photovoltaics: Research and Applications 29, 212 (2021)	Great
3	“Progress and prospects for ultrathin solar cells”; I. Massiot, <b>A. Cattoni</b> , S. Collin, Nature Energy 5, 959 (2020)	Excellent
4	“A 19.9%-efficient ultrathin solar cell based on a 205-nm-thick GaAs absorber and a silver nanostructured back mirror”; H.-L. Chen, <b>A. Cattoni</b> , R. De Lépinau, A. W. Walker, O. Höhn, D. Lackner, G. Siefert, M. Faustini, N.	Excellent

	Vandamme, J. Goffard, B. Behaghel, C. Dupuis, N. Bardou, F. Dimroth, S. Collin; Nature Energy 4, 761 (2019)	
5	“Measuring and modeling the growth dynamics of self-catalyzed GaP nanowire arrays”; F. Oehler, <b>A. Cattoni</b> , A. Scaccabarozzi, G. Patriarche, F. Glas, J.-C. Harmand; Nano letters 18, 701 (2018)	Excellent
6	“Sub-10 nm electron and helium ion beam lithography using a recently developed alumina resist”; <b>A. Cattoni</b> , D. Mailly, O. Dalstein, M. Faustini, G. Seniutinas, B. Rösner, C. David ; Microelectronic Engineering 193, 18 (2018)	Good
7	“Determination of n-type doping level in single GaAs nanowires by cathodoluminescence”; H.-L. Chen, C. Himwas, A. Scaccabarozzi, P. Rale, F. Oehler, A. Lemaître, L. Lombez, J.-F. Guillemoles, M. Tchernycheva, J.-C. Harmand, <b>A. Cattoni</b> , S. Collin; Nano Letters 17, 6667 (2017)	Great
8	“Ultrathin epitaxial silicon solar cells with inverted nanopyramid arrays for efficient light trapping “;A. Gaucher, <b>A. Cattoni</b> , C. Dupuis, W. Chen, R. Cariou, M. Foldyna, L. Lalouat, E. Drouard, C. Seassal, P. Roca i Cabarrocas, S. Collin ; Nano letters 16, 5358 2016(2016)	Excellent
9	“Nanoimprinted, Submicrometric, MOF-Based 2D Photonic Structures: Toward Easy Selective Vapors Sensing by a Smartphone Camera”; O. Dalstein, D. R Ceratti, C. Boissière, D. Grosso, <b>A. Cattoni*</b> , M. Faustini* ; Advanced Functional Materials 26, 81 (2016)	Excellent
10	“ $\lambda^3/1000$ plasmonic nanocavities for biosensing fabricated by Soft UV Nanoimprint Lithography”; <b>A. Cattoni</b> , P. Ghenuche, A.-M. Haghiri-Gosnet, D. Decanini, J. Chen, J.-L. Pelouard, S. Collin; Nano Letters 11, 3557 (2011)	Excellent
11	“Soft UV-NIL at 20 nm scale using flexible bi-layer stamp casted on HSQ master mold “; <b>A. Cattoni</b> , E. Cambрил, D. Decanini, G. Faini, A.-M. Haghiri-Gosnet; Microelectronic Engineering 87, 1015 (2011)	Good
12	“MgO/Fe(001) and MgO/Fe(001)-p(1 $\times$ 1)O interfaces for magnetic tunnel junctions: A comparative study”; <b>A. Cattoni</b> , D. Petti, S. Brivio, M. Cantoni, R. Bertacco, and F. Ciccacci ; Physical Review B 80, 104437 (2009)	Good

### Overall collective judgement

QUALITY OF SCIENTIFIC AND/OR PROJECT PRODUCTION, ASSESSED ON THE BASIS OF CRITERIA AND PARAMETERS RECOGNIZED BY THE INTERNATIONAL SCIENTIFIC COMMUNITY OF REFERENCE [max 40 points]:

The 12 publications submitted by the candidate have been singularly assessed on the basis of the following criteria and parameters recognized by the international scientific community: (i) impact factor of the journal at the year of publication, (ii) quartile of the journal at the year of publication, from Journal Citation Reports (Clarivate); (iii) number of citations per year, from Scopus database; (iv) position of the candidate in the list of authors. In case of books authored by the candidates, due to the impossibility of applying a metrics based on indicators reported above, the Committee decided to assign a judgement “Great”. For patents, due to the impossibility of applying a metrics based on indicators reported above, the Committee decided to assign a judgement “Very Good”. All 12 publications are judged coherent with the SECTOR 02/B1 - EXPERIMENTAL PHYSICS OF MATTER - SDS FIS/01 - EXPERIMENTAL PHYSICS. The whole scientific production is remarkable and continuous since 2005, consisting in scientific papers all related to Experimental Physics of Matter and coherent with the subject of the call. It consists of 91 Publications (Scopus, 22/09/22): 60 articles, 28 conference papers, 2 review papers and 1 book chapter (the candidate declares 3 books chapters).

The h-index is 20 (Scopus, 22/09/22). The total number of citations is 1487 (Scopus, 22/09/22). The value of the scientific production emerges also from the number of invited talks: 5 at international conferences and 2 at national conferences.

In this section we do not evaluate the project production, as this will be evaluated in the section “SCIENTIFIC RESPONSIBILITY FOR FUNDED RESEARCH PROJECTS”.

Overall, the judgment of the scientific production is **Excellent**. The points assigned are **40**.

DIDACTIC ACTIVITIES CARRIED OUT IN ITALIAN OR FOREIGN UNIVERSITIES OR BODIES [max 20 points]:

The candidate has carried out a teaching activity by giving lectures and organizing laboratory activities in master and PhD courses related to Micro and Nanofabrication as detailed below:

- 2014-2022 3h lecture + 6h lab work in cleanroom on *Nanoimprint Lithography, Soft Lithography, Scanning Probes Lithography and Nanofabrication by self-assembly* as part of the course of "Advanced Micro and Nanofabrication" (Prof. Antoine Pallandre, Prof. A.M. Haghiri), Master 2 QLMN (Quantum, Light, Materials and Nano Sciences, Paris-Saclay University). Total 81 h.
- 2020-2022 3h lecture on *Electron Beam Lithography and Focused Ion Beam* as part of the course of "Fundamentals of Micro-Nanofabrication" (Prof. Elisabeth Dufour-Gergam), Master 2 QLMN (Quantum, Light, Materials and Nano Sciences), Paris-Saclay University. Total 9 h.
- 2017-2022 3h lecture + 3h lab work in the clean room on *Nanofabrication by Replication*, as part of the course "Introduction to micro-nanotechnologies: introduction to cleanroom processes", Doctoral school EOBE (Electrical, Optical, Bio-Physics and Engineering) of Paris-Saclay University. Total 36 h.

In addition he has been co-supervisor of 8 PhD thesis and supervisor of 4 Master Thesis.

Overall, the judgement of the didactic activity is: **reasonable**, taking into account the position of the candidate as CNRS researcher. The points assigned are **8**.

SCIENTIFIC RESPONSIBILITY FOR FUNDED RESEARCH PROJECTS [max 30 points]:

Coordinator of 4 national research projects.

Local scientific responsible of 2 EU projects.

Coordinator of 2 international bilateral research projects with Italy and Canada.

Participant in 8 research projects (national and European Projects).

No evidence for direct responsibility in industrial projects.

Total budget of the project in which the candidate has been involved: around 4.9 M€.

Overall, the judgement of the scientific responsibility for funded research projects is: **Great**. The points assigned are **29**.

RESULTS OBTAINED IN TECHNOLOGY TRANSFER IN TERMS OF PARTICIPATION IN THE CREATION OF NEW ENTERPRISES (SPIN OFF), DEVELOPMENT, USE AND MARKETING OF PATENTS [max 10 points]:

Co-inventor of 1 national patent and 4 international patents as detailed below:

- "Cellule photovoltaïque tandem a deux terminaux et procédé de fabrication associé", filed on 24/12/2020. Inventors: CHANCEREL, NGUYEN, CATTONI, FAUSTINI, COLLIN, BARANEK. Application Number : FR2014115
- WO/2020/216856 - Mirror for a photovoltaic cell, photovoltaic cell and photovoltaic module. Inventors: COLLIN, GOUILLART, CATTONI, NAGHAVI (29/10/2020), extension from FR3095523 (30/10/2020)
- WO/2018/166896 - Nanoimprint lithography process and patterned substrate obtainable therefrom. Inventors: GROSSO, FAUSTINI, DALSTEIN, CATTONI, BOTTEIN, (20/09/2018). Extension: CN110651226 (03/01/2020), EP3596544 (22/01/2020), US20200218147 (09/07/2020)
- WO/2018/100205 - Optoelectronic component with improved absorption. Inventors: VANDAMME, COLLIN, GUILLEMOLES, CATTONI (07/06/2018), extended from FR3059827 (08/06/2018)
- WO/2017/207360 - Device and method for providing illumination for total-internal-reflection fluorescence microscopy. Inventors: GIACOMOTTI, BRUNSTEIN, CATTONI, BOUCHOULE, DAMILANO, LEFEBVRE, (07/12/2017), extended from FR3051921 (31/05/2016), EP3465320 (10/04/2019), US20190285547 (19/09/2019)

Reasonable collaboration with enterprises in the framework of European and national projects.

Overall, the judgement of the activity related to technology transfer is: **Excellent**. The points assigned are **10**.

SCRUTINY OF THE DEGREE OF KNOWLEDGE OF THE ENGLISH LANGUAGE:

The degree of knowledge of the English language is great, as emerging from the fact that the candidate is first/last author or corresponding author of publications in international journals and he has given 5 invited talks at international conferences.

CURRICULUM

2001 Electronic Engineering Degree - Università Politecnica delle Marche (Ancona)  
2004 PhD in Telecommunication Engineering - Università Politecnica delle Marche (Ancona)  
2005-2006 Contract researcher at Università Politecnica delle Marche (Ancona) on Computational methods in integrated optics and TLM simulation of optical circuits  
2006-2007 Engineer in the company OS Endoscopie S.r.l. – Jesi (Ancona)  
2007-2009 “Assegno di collaborazione” for simulation and design of microfluidic devices; National Nanotechnology Laboratory (NNL), CNR NANO, Lecce  
2009-2014. Team leader for the startup stage of the Robotics-1 platform and in the Smart Materials Research Platform of the Italian Institute Technology (IIT) Center for Biomolecular Nanotechnology (CBN) of Arnesano (Lecce).  
2014-2015. “Assegnista di Ricerca post-doc” in diamond and nanodiamond technology, National Council of Research (CNR), Istituto di Metodologie Inorganiche e dei Plasmi (IMIP), of Bari, Italy (actually NANOTEC)  
2015-2021. Research and Development chief and Scientific Director of Dyrecta Lab Research Institute (MIUR Institute), Conversano (BA), Italy. The activity of this period is related to Industry Research & Development in Innovative Technologies, Artificial Intelligence and Electronics.  
2021-now. Researcher at LUM Enterprise (R&D manager) and contract professor in Physics (FIS/01) at LUM University, Università LUM "Giuseppe Degennaro" Casamassima (BA), Italy.  
2018. Best Engineer in Italy 2018: award of “Top Young Engineer 2018” promoted by Consiglio Nazionale degli Ingegneri and by Federmanager.  
2019: National Qualification as Associate professor (Abilitazione Scientifica Nazionale ai sensi dell'art. 16 della Legge 240/2010 per il S.C.02/B1 - FISICA SPERIMENTALE DELLA MATERIA quale professore di II fascia) National Scientific Qualification (ASN) as associate professor in Electronics (S.C. 09/E3, SSD: ING/INF/01 (Art. 16, comma 1, Legge 240/10).

Institutional duties: MISE qualified manager (innovation consultant for business incentives, 2019). Representative of the contract professors for the Department of “Management, Finanza e Tecnologia”, cds L9 -Management Engineering- (ref. DP 170-2022).

Research areas:

- a) Birefringence in integrated optical devices, 3D “Full-Wave” modeling for the design of optical devices, GHz antenna, and RF/microwave circuits.
- b) Design and implementation of photonic crystals.
- c) Analysis of integrated nonlinear optical devices.
- d) Nanotechnology/Smart Materials and microsensors for robotics: design and implementation of nanocomposite sensors for robotics.
- e) Diamond and Nanodiamond technology and diamond based sensors.
- f) Laboratory activity and experimental measurements.
- g) Industry Research & Development in Innovative Technologies, Artificial Intelligence and Electronics.

Techniques and methods: Chemical processes and optical lithography in cleanroom. Growth by RF sputtering. Electron Beam lithography. Optical measurements in photonic devices. RF measurements with vector analyzer. Characterization of piezoelectric MEMS. Characterization of nanocomposites by XPS, UPS, AFM, FTIR, conductivity measurements, Kelvin Probe and capacitance microscopy. Z-potential and wettability measurements.

Publications and dissemination activity: Coauthor of 176 publications (Scopus – September 2022). Approximately half of publications are fully coherent with the topic of the present call and the SECTOR 02/B1 - EXPERIMENTAL PHYSICS OF MATTER - SDS FIS/01 - EXPERIMENTAL PHYSICS, while the other refers to the more recent activity of the candidate, dealing with Industry Research & Development in Innovative Technologies, Artificial Intelligence and Electronics. 15 orals at scientific conferences, with 1 invited talk at an

international conference. The 12 publications presented and the whole scientific production are evaluated in the subsequent paragraphs “SUBMITTED PUBLICATIONS” and “QUALITY OF SCIENTIFIC AND/OR PROJECT PRODUCTION, ASSESSED ON THE BASIS OF CRITERIA AND PARAMETERS RECOGNIZED BY THE INTERNATIONAL SCIENTIFIC COMMUNITY OF REFERENCE”.

**International profile:** IEEE Senior Member. Member of the International Scientific Committee of Measurers IMEKO -Technical Committee TC19 Environmental Measurements and of the American nano Society. Reviewer for international journals in the field of optics, microwaves, sensors, internet, artificial intelligence, smart cities, healthcare. Chair and organizer of sessions at international conferences. Member of the editorial board of journals devoted to material Science, Soft Computing, Artificial intelligence. No evidence in the CV for current collaborations with international research groups in the field of Experimental Physics.

**Didactic activity:** From 2001 to 2007, tutorials for courses of microwaves and optics at University of Ancona. From 2019 to 2021 a few hours of lectures in Bachelor, Master and PhD courses at Universities in Bari. Contract professor for the course of Physics at the first year of the degree program in Management Engineering at LUM University (Bari). The whole didactic activity is evaluated in the subsequent paragraph “DIDACTIC ACTIVITIES CARRIED OUT IN ITALIAN OR FOREIGN UNIVERSITIES OR BODIES”.

**Research Projects:** Co-worker in 6 italian research projects related to photonics and e.m. modelling, nanosensors funded by public funding agencies. Scientific responsible for an Italian research project on nanomedicine. Scientific responsible, as Scientific Director of Dyrecta Lab, of 97 Industry Projects related to the research area “Industry Research & Development in Innovative Technologies, Artificial Intelligence and Electronics”. The whole activity is evaluated in the subsequent paragraph “SCIENTIFIC RESPONSIBILITY FOR FUNDED RESEARCH PROJECTS”.

**Technology transfer:** Co-inventor of 3 national patents and 1 international patent. Collaboration with many industries involved in industry projects. The whole activity is evaluated in the subsequent paragraph “RESULTS OBTAINED IN TECHNOLOGY TRANSFER IN TERMS OF PARTICIPATION IN THE CREATION OF NEW ENTERPRISES (SPIN OFF), DEVELOPMENT, USE AND MARKETING OF PATENTS”.

#### SUBMITTED PUBLICATIONS:

No. of publications	Type/Title of Publication	Judgment
1	“In Situ Formation and Size Control of Gold Nanoparticles into Chitosan for Nanocomposite Surfaces with Tailored Wettability”, F. Spano, <b>A. Massaro</b> , L. Blasi, M. Malerba, R. Cingolani and A. Athanassiou, Langmuir, 28, (8), pp. 3911-3917, 2012	Very Good
2	“High-Efficiency Nanodiamond-Based Ultraviolet Photocathodes”, Valentini, Melisi, De Pascali, Cicala, Velardi, <b>Massaro</b> , Granted Patent WO 2017/051318A1	Very good
3	“A Method of Identifying a Target Analyte Using Photonic Crystal Resonators and Related Device”, K. Aoki, M. De Vittorio, T. Stomeo, F. Pisanello, <b>A. Massaro</b> , L. Martiradonna, S. Sabella, R. Rinaldi, Y. Arakawa, R. Cingolani, and P. Pompa, Patent TO2008A000614; EP 2154515A1, US 2010/0028898 A1 (4 Feb. 2010).	Very good
4	"Advanced Optoelectronic and Micro/Nanosensors," in “Electronics in Advanced Research Industries: Industry 4.0 to Industry 5.0 Advances “, <b>A. Massaro</b> , IEEE, 2022 (Wiley-IEEE Press), pp.253-299.	Great
5	“Optoelectronic and Nanosensors Detection Systems: A Review”, Aimé Lay-Ekuakille , <b>Alessandro Massaro</b> , Senior Member, IEEE, Satya P. Singh	Very Good



	,Ireneusz Jablonski , Md. Zia Ur Rahman , and Fabrizio Spano, IEEE SENSORS JOURNAL, VOL. 21, NO. 11, JUNE 1, 2021	
6	“Friction in Totally Optical Robotic Finger Oriented”, <b>Alessandro Massaro</b> , Mariagrazia Troia, Fabrizio Spano, and Giuseppe Carbone, IEEE SENSORS JOURNAL, VOL. 13, NO. 2, FEBRUARY 2013	Good
7	“Design and Characterization of Nanocomposite Pressure Sensor Implemented in Tactile Robotic System”, <b>A. Massaro</b> , F. Spano, A. L. Ekuakille, P. Cazzato, R. Cingolani, and A. Athanassiou, IEEE Transactions on Instrumentation & Measurement, vol. 60, no. 8, August 2011	Good
8	“Free Standing Piezoelectric Rings for High Efficiency Energy Harvesting at Low Frequency”, <b>A. Massaro</b> , S. De Guido, I. Ingresso, R. Cingolani, M. De Vittorio, M. Cori, A. Bertacchini, L. Larcher, A.Passaseo, Applied Physics Letters, 98, 053502, 2011	Very Good
9	“3-D FEM Modeling and Fabrication of Circular Photonic Crystal Microcavity”, <b>A. Massaro</b> , V. Errico, T. Stomeo, A. Salhi, R. Cingolani, A. Passaseo, and M. De Vittorio, Journal of Lightwave Technology, August 2008, vol.26, no. 16, pp. 2960-2968	Good
10	“Characterization of an Innovative Like-Eye Sensor for Feature Detection and Robot Sensing”, <b>A. Massaro</b> , N. I. Giannoccaro, L. Spedicato, A. Lay-Ekuakille; M. Missori, M. A. Malvindi, Measurement (Elsevier), Vol. 55, pp. 153-167, 2014	Good
11	“Self-Assembled Pillar-Like Structures in Nanodiamond Layers by Pulsed Spray Technique”, G. Cicala, <b>A. Massaro</b> , L. Velardi, G. S. Senesi and A. Valentini, ACS Applied Materials & Interfaces, vol. 6, no. 23, pp. 21101-21109, 2014	Very Good
12	“Flexible nanocomposites with all-optical tactile sensing capability”, <b>A. Massaro</b> , F. Spano, M. Missori, M. A. Malvindi, P. Cazzato, R. Cingolani, and A. Athanassiou, RSC Advances, vol.4, no.6, pp. 2820-2825, 2014	Good

### Overall collective judgement

QUALITY OF SCIENTIFIC AND/OR PROJECT PRODUCTION, ASSESSED ON THE BASIS OF CRITERIA AND PARAMETERS RECOGNIZED BY THE INTERNATIONAL SCIENTIFIC COMMUNITY OF REFERENCE [max 40 points]:

The 12 publications submitted by the candidate have been singularly assessed on the basis of the following criteria and parameters recognized by the international scientific community: (i) impact factor of the journal at the year of publication, (ii) quartile of the journal at the year of publication, from Journal Citation Reports (Clarivate); (iii) number of citations per year, from Scopus database; (iv) position of the candidate in the list of authors. In case of books authored by the candidates, due to the impossibility of applying a metrics based on indicators reported above, the Committee decided to assign a judgement “Great”. For patents, due to the impossibility of applying a metrics based on indicators reported above, the Committee decided to assign a judgement “Very Good”. All 12 publications are judged coherent with the SECTOR 02/B1 - EXPERIMENTAL PHYSICS OF MATTER - SDS FIS/01 - EXPERIMENTAL PHYSICS. The whole scientific production is remarkable and continuous since 2004. It consists of 176 Publications (Scopus, 22/09/22): 78 articles, 83 conference papers, 5 review papers and 8 book chapters (the candidate declares 11 books chapters, and the co-authorship of 3 books). The scientific production can be subdivided in two parts with approximately the same number of publications: (i) scientific papers related to Experimental Physics of Matter and coherent with the subject of the call, (ii) papers dealing with Industry Research & Development in Innovative Technologies, Artificial Intelligence and Electronics, not fully coherent with the topic of the present call and the SECTOR 02/B1 - EXPERIMENTAL PHYSICS OF MATTER - SDS FIS/01 - EXPERIMENTAL PHYSICS.

The h-index is 17 (Scopus, 22/09/22). The total number of citations is 1036 (Scopus, 22/09/22). Interestingly enough, in the CV the list of invited talks at international conferences is missing and only looking in the list of proceedings provided by the candidate we find a mention to an invited contribution at an international conference in 2011, thus indicating a limited international visibility of the candidate.

In this section we do not evaluate the project production, as this will be evaluated in the section “SCIENTIFIC RESPONSIBILITY FOR FUNDED RESEARCH PROJECTS”.

Overall, the judgment of the scientific production is **Very Good**. The points assigned are **32**.

DIDACTIC ACTIVITIES CARRIED OUT IN ITALIAN OR FOREIGN UNIVERSITIES OR BODIES [max 20 points]:

The candidate has carried out a teaching activity by giving tutorials, lectures in bachelor/master courses and PhD courses as detailed below:

- Tutorials for the course of components and optical circuits (master degree), University of Ancona (academic year 2001-2002). Number of hours not specified
- Tutorials for the course of microwave circuits (bachelor degree), University of Ancona (academic years 2002-2003, 2004-2005, 2006-2007). Number of hours not specified
- Tutorials for the course of components and optical circuits (bachelor degree), University of Ancona (academic years 2005-2006). Number of hours not specified
- Lecture (Nanocomposite Sensors for Robotics - 2h) Doctoral School V cycle, I year - Measures for Industry and the Environment, Politecnico di Bari, 2013
- Additional lectures to the course of "Elements of Cellular Biophysics", Bachelor's Degree Course in Medical Systems Engineering (Polytechnic of Bari, Prof. G. Calamita): 2.5 hours. Academic year 2019-2020
- Lectures on telemedicine at the School of Specialization in Emergency Medicine (Policlinico di Bari). 2 lectures, number of hours not specified.
- Lessons on telemedicine and artificial intelligence to support the teaching activity of the "Elements of Cellular Biophysics" course, Bachelor's Degree in Medical Systems Engineering (Polytechnic of Bari): total 9 hours. Academic year 2020-2021.
- Lessons in the "Telemedicine" course, (Policlinico di Bari, Univeristà di Bari; academic year 2020/2021): total 12 hours.
- Lessons in the course of "Doctorate in Public Health, Clinical Medicine and Oncology" cycle XXXVI, (Policlinico di Bari, University of Bari; 2020/2021): total 9 hours.
- Main lecturer of a course on Physics FIS/01 (first year of the degree program in Management Engineering L9) at LUM University "Giuseppe Degennaro", Casamassima (BA), Italy. Total CFU: 9 (72 hours of lessons). Academic year 2021-2022.

In addition, he has been co-supervisor of 2 master thesis and 19 bachelor or master (not specified) thesis. Tutor for internships and experimental training of 11 students.

Overall, the judgement of the didactic activity is: **reasonable**, taking into account the past employments of the candidate, mainly as researcher. The points assigned are **8**.

SCIENTIFIC RESPONSIBILITY FOR FUNDED RESEARCH PROJECTS [max 30 points]:

Local scientific responsible of 1 national project.

Participant in 6 national research projects.

Scientific responsible, as Scientific Director of Dyrecta Lab, of 97 Industry Projects related to the research area "Industry Research & Development in Innovative Technologies, Artificial Intelligence and Electronics", not fully coherent with the topic of the present call and the SECTOR 02/B1 - EXPERIMENTAL PHYSICS OF MATTER - SDS FIS/01 - EXPERIMENTAL PHYSICS.

Total budget of the project in which the candidate has been involved: not specified.

Overall, the judgement of the scientific responsibility for funded research projects is: **Very Good**. The points assigned are **24**.

RESULTS OBTAINED IN TECHNOLOGY TRANSFER IN TERMS OF PARTICIPATION IN THE CREATION OF NEW ENTERPRISES (SPIN OFF), DEVELOPMENT, USE AND MARKETING OF PATENTS [max 10 points]:

Co-inventor of 2 national patents and 2 international patents as detailed below:

- A. Massaro, F. Spano, P. Cazzato, R. Cingolani, A. Athanassiou, "Punta per un dispositivo di rilevamento ottico di un oggetto tridimensionale, particolarmente per uso in campo medico, e dispositivo di rilevamento ottico comprendente una tale punta", Code: TO2011A001178.
- F. Porcelli, D. Laura, A. Galiano, A. D'Accolti, S. Selicato, and A. Massaro "Macchina agricola, in particolare per il controllo degli stadi giovanili dei vettori di Xylella fastidiosa" Brevetto per modello di utilità, domanda numero: 20201900000415, Data di presentazione: 05/02/2019, riferimento depositante G1310IT00.

- K. Aoki, M. De Vittorio, T. Stomeo, F. Pisanello, A. Massaro, L. Martiradonna, S. Sabella, R. Rinaldi, Y. Arakawa, R. Cingolani, and P. Pompa, "Procedimento per la rivelazione di un analita, con l'impiego di cristalli fotonici risonanti e relativo dispositivo"; "A Method of Identifying a Target Analyte Using Photonic Crystal Resonators and Related Device," " Codes: TO2008A000614; EP 2154515A1, US 2010/0028898 A1 (4 Feb. 2010).
- G. Cicala, G. De Pascali, A. Massaro, D. Melisi, A. Valentini, L. Velardi, "Fotocatodi ad alta efficienza per ultravioletto a base di nanodiamante (High-Efficiency Nanodiamond-Based Ultraviolet Photocathodes)" Domanda di brevetto N. 102015000053374 (UB2015A003768); WO 2017/051318A1.

Extended activity of collaboration with enterprises in the framework of the Industry Research & Development in Innovative Technologies, Artificial Intelligence and Electronics.

Overall, the judgement of the activity related to technology transfer is: **Excellent**. The points assigned are **10**.

#### SCRUTINY OF THE DEGREE OF KNOWLEDGE OF THE ENGLISH LANGUAGE:

The degree of knowledge of the English language is great, as emerging from the fact that the candidate is first/last author or corresponding author of publications in international journal and books.

### **CANDIDATE: Simone Giuseppina**

---

#### CURRICULUM

2000 Master of Science, Chemical Engineering, University of Naples "Federico II", Italy

2001-2002. Research Assistant at University of Napoli "Federico II" Dipartimento di Ingegneria Chimica, dei Materiali e della Produzione Industriale (Italy)

2002-2003. Research Assistant at University of Rome "Tor Vergata" Dipartimento di Ingegneria Meccanica (Italy)

2003-2006. PhD in Mechanical Engineering, University of Rome "La Sapienza" Italy, Technical University of Denmark, 2003– 2006, XIX Ciclo Ingegneria della Produzione Industriale

2008-2009. Postdoctoral Fellow at Harvard Medical School and Harvard–MIT Health Sciences & Technology, Cambridge (MA, US)

May– Oct. 2009: Senior Consultant, Danish Teknologisk Institute, DTI, Roskilde, (Denmark)

2009-2011. Postdoctoral Fellow at Korea Institute of Science and Technology Europe, Saarbruecken (Germany)

2011-2014. Senior Postdoctoral Fellow, University of Napoli "Federico II" Dipartimento di Ingegneria Chimica, dei Materiali e della Produzione Industriale (Italy)

2014-2015. Lecturer, University of Sannio, Benevento, Dipartimento di Scienze e Tecnologie (Italy)

Oct-Dec 2015: Senior Research Fellow, Durham University, Department of Engineering, Durham (UK)

2015. Lecturer, Chester University, Department of Chemical Engineering, Chester (UK)

2016-now: Associate Professor, Northwestern Polytechnical University, Department of Mechanical Engineering, Xi'an, China

Jan-Mar 2018: Senior Research Fellow, Durham University, Department of Engineering, Durham (UK)

Dec. 2020- Sept. 2021: Visiting Professor at the Department of Physics, Politecnico di Milano

2021: National Qualification as Associate professor (Abilitazione Scientifica Nazionale ai sensi dell'art. 16 della Legge 240/2010 per il S.C.02/B1 - FISICA SPERIMENTALE DELLA MATERIA quale professore di II fascia). National qualification as full and associate professor (I e II Fascia, Classe di concorso 09/D2 Sistemi, metodi e tecnologie dell'Ingegneria Chimica e di Processo).

Institutional duties: No evidence of such activities from the CV.

#### Research areas:

Plasmonics, Plasmonic sensors, Optomechanics, Photonics, Biophysics, Microfluidics, Soft Matter, Miniaturization, Microfabrication, Lab on a Chip, Microsystems.

Techniques and methods: There are no specific Information available from the CV, apart from the fact that the candidate did a Cleanroom training at the Danchip-DTU facility in 2005-2006.

Publications and dissemination activity: Coauthor of 50 publications (Scopus – September 2022). 5 orals at scientific conferences, no invited talks at scientific conferences. The 12 publications presented and the whole scientific production are evaluated in the subsequent paragraphs “SUBMITTED PUBLICATIONS” and “QUALITY OF SCIENTIFIC AND/OR PROJECT PRODUCTION, ASSESSED ON THE BASIS OF CRITERIA AND PARAMETERS RECOGNIZED BY THE INTERNATIONAL SCIENTIFIC COMMUNITY OF REFERENCE”.

International profile: Reviewer of research projects for The Netherlands Organization for Health Research and Development (2014). Since 2016, Eurostars Expert (EU program). Reviewer of international journals. From 2010 to 2015 Co-Editor of the Journal of Micro and Nanosystems.

Didactic activity: Assistant professor in a post-master course, assistant in courses of Microfluidics and Chemistry, teacher for an Italian online university. Since 2016, professor in charge of university courses at Northwestern Polytechnical University (Xi’an, PRC).

The whole didactic activity is evaluated in the subsequent paragraph “DIDACTIC ACTIVITIES CARRIED OUT IN ITALIAN OR FOREIGN UNIVERSITIES OR BODIES”.

Research Projects: In the CV there is no detailed information on the participation to research projects. A starting grant and a Research Fund from Chinese agencies are mentioned, together with 2 “COFUND grants” from EU. The whole activity is evaluated in the subsequent paragraph “SCIENTIFIC RESPONSIBILITY FOR FUNDED RESEARCH PROJECTS”.

Technology transfer: Co-inventor of 1 national patent and 4 international patents. The whole activity is evaluated in the subsequent paragraph “RESULTS OBTAINED IN TECHNOLOGY TRANSFER IN TERMS OF PARTICIPATION IN THE CREATION OF NEW ENTERPRISES (SPIN OFF), DEVELOPMENT, USE AND MARKETING OF PATENTS”.

#### SUBMITTED PUBLICATIONS:

No. of publications	Type/Title of Publication	Judgment
1	“Superstructure of silver crystals in a caged framework for plasmonic inverse sensing”, Oole van de Donk, Xiaomin Zhang, <b>Giuseppina Simone</b> , Biosensors and Bioelectronics 142 (2019) 111514	Very Good
2	“Galactose supramolecular docking orchestrates macrophage phenotype”, Nu Zhang, Xinmin Zheng, Guus Couvee, Ferry Wolterboer, Yidan Zhou, Oole Van deDonk, Hui Yang and <b>Giuseppina Simone</b> , Cellular & Molecular Immunology (2020) 17:1111–1113	Good
3	“Surface plasmon resonance study for a reliable determination of the affinity constant of multivalent grafted beads”, <b>G. Simone</b> , Soft Matter, (2021), 17, 7047	Good
4	“A Kretschmann setup at acoustic frequencies for studying molecular vibration”, <b>Giuseppina Simone</b> and Pim de Ruijter, New J. Phys. 22 103035 (2020)	Good
5	“Microfluidics and lab on a chip”, A. Manz, P. Neuzil, J. S. O'Connor and <b>G. Simone</b> , Royal Society of Chemistry; 1° edition (24 settembre 2020) ISBN-13: 978-1782628330	Great
6	“On-resonance islands of Ag-nanowires sense the level of glycated hemoglobin for diabetes diagnosis”, Heng Zhang , Ding Li , Yang Yang*,	Very Good

	Honglong Chang*, <b>Giuseppina Simone</b> , Sensors and Actuators B: Chemical, Volume 321, 15 October 2020, 128451	
7	"Propagating Surface Plasmon Polaritons Excited at the Graphene Oxide/AgAu Alloy Interface Enhance Nonlinearity", <b>G. Simone</b> , Phys. Status Solidi B (2021), 2000602	Good
8	"Short chain thiols induce better plasmon resonance sensitivity in Au(111)", <b>Giuseppina Simone</b> and Oole van de Donk, Journal of Materials Chemistry C, (2019)	Very Good
9	"On demand coalescence in microchannel: Viscosity matters", <b>Giuseppina Simone</b> and Oole van de Donk, Chemical Engineering Science 208 (2019) 115173	Good
10	"Plasmon resonance excitation enhances Raman emission and amplifies the molecular vibration on Au (111)", <b>Giuseppina Simone</b> , Pimde Ruijter, Applied Surface Science 530, 15 November 2020, 147207	Very Good
11	"Ag/Au alloy entangled in a protein matrix: A plasmonic substrate coupling surface plasmons and molecular", <b>Giuseppina Simone</b> , Saifeldin Abdalla, Applied Surface Science Volume 526, 1 October 2020, 146711	Very Good
12	"Gelatin cages: The formation and characterization of carriers for housing catalyst cargoes", XiaominZhang, <b>Giuseppina Simone</b> , Chemical Engineering Journal Volume 356, 15 January 2019, Pages 516-523	Very Good

### Overall collective judgement

QUALITY OF SCIENTIFIC AND/OR PROJECT PRODUCTION, ASSESSED ON THE BASIS OF CRITERIA AND PARAMETERS RECOGNIZED BY THE INTERNATIONAL SCIENTIFIC COMMUNITY OF REFERENCE [max 40 points]:

The 12 publications submitted by the candidate have been singularly assessed on the basis of the following criteria and parameters recognized by the international scientific community: (i) impact factor of the journal at the year of publication, (ii) quartile of the journal at the year of publication, from Journal Citation Reports (Clarivate); (iii) number of citations per year, from Scopus database; (iv) position of the candidate in the list of authors. In case of books authored by the candidates, due to the impossibility of applying a metrics based on indicators reported above, the Committee decided to assign a judgement "Great". For patents, due to the impossibility of applying a metrics based on indicators reported above, the Committee decided to assign a judgement "Very Good".

Selected publications are judged generically coherent with the SECTOR 02/B1 - EXPERIMENTAL PHYSICS OF MATTER - SDS FIS/01 - EXPERIMENTAL PHYSICS, even though they are at the bridge between Physics and Biochemistry and some of them, especially publication n. 2, are more related to Biochemistry.

The whole scientific production is good, mainly consisting in interdisciplinary papers at the bridge between Experimental Physics, soft matter and biochemistry, clearly reflecting the CV of the candidate. It consists of 50 Publications (Scopus, 22/09/22): 39 articles and 11 conference papers. The candidate declares 3 books chapters in the CV. The h-index is 13 (Scopus, 22/09/22). The total number of citations is 947 (Scopus, 22/09/22). No invited talks at international conferences. 4 invited lectures at research centres or universities are mentioned in the CV.

In this section we do not evaluate the project production, as this will be evaluated in the section "SCIENTIFIC RESPONSIBILITY FOR FUNDED RESEARCH PROJECTS".

Overall, the judgment of the scientific production is **Good**. The points assigned are **30**.

DIDACTIC ACTIVITIES CARRIED OUT IN ITALIAN OR FOREIGN UNIVERSITIES OR BODIES [max 20 points]:

The candidate has carried out an intense didactic activity as detailed below:

- 2005 Assistant of Prof. F. Quadri in the post-master course on *Phase Diagrams*, University of Naples "Federico II". Number of hours not specified.
- 2010-2011 Assistant of Prof. Andreas Manz in the courses on *Microfluidics, fundamental and applications* and *Experimental Microfluidics*, University of Saarland (Saarbruecken, DE). Number of hours not specified.

- 2014 – 2015 Assistant of Prof. G. Graziano in the course of *Chemistry*, University of Sannio (Benevento, Italy) Number of courses and hours not specified.
- 2015 Co-teaching with Prof. Steve Wilkinson in the course *Fluid Dynamics*, University of Chester (Chester, UK). Number of hours not specified.
- 2016-2018 Course on *BioMEMS*, Northwestern Polytechnical University (Xi'an, PRC). Number of hours and titularity not specified.
- 2017 Course on *Physics of Fluids*, Northwestern Polytechnical University (Xi'an, PRC) International Students. Number of hours and titularity not specified.
- 2018-2021 Course on *Engineering Design Methods*, Queen Mary London NWPU, joint program. Number of hours and titularity not specified.
- 2019 Course on *Molecular and cellular biomechanics and mechanobiology*, Northwestern Polytechnical University (Xi'an, PRC). Number of hours and titularity not specified.
- 2021 Course on *Micro and Nanotechnologies*, Northwestern Polytechnical University (Xi'an, PRC). Number of hours and titularity not specified.

Unfortunately, from the CV it is impossible to evaluate the weight and level of the courses at the Northwestern Polytechnical University. Also in the document from the Northwestern Polytechnical University attesting that G. Simone has a yearly contract as Associate professor (May 2022 – June 2023), the didactic activity is not detailed, as it should be reported in an Annex which was not attached. The committee decided to interpret the writing of the CV as if G. Simone was the Professor in charge of the courses at the Northwestern Polytechnical University, all assumed to be equivalent to an Italian course of 5 CFU.

In addition he has been supervisor or co-supervisor of 5 Master Thesis; supervisor of more than 10 bachelor students.

Overall, the judgement of the didactic activity is: **Very Good**. The points assigned are **14**.

#### SCIENTIFIC RESPONSIBILITY FOR FUNDED RESEARCH PROJECTS [max 30 points]:

Scientific responsible for a local (China) Starting Grant 'Talent Recruitment' NWPU and a grant "Fundamental Research Funds for the Central Universities".

Beneficiary of 2 COFUND grants within the 7<sup>th</sup> EU Program (2015 and 2018)

No evidence for direct responsibility in industrial projects.

Total budget of the project in which the candidate has been involved: not specified.

Overall, the judgement of the scientific responsibility for funded research projects is: **Reasonable**. The points assigned are **10**.

#### RESULTS OBTAINED IN TECHNOLOGY TRANSFER IN TERMS OF PARTICIPATION IN THE CREATION OF NEW ENTERPRISES (SPIN OFF), DEVELOPMENT, USE AND MARKETING OF PATENTS [max 10 points]:

Co-inventor of 1 national patent and 5 international patents as detailed below:

- G. Simone, G. Perozziello, G. Medoro, Method to bind a silicone layer to a methacrylic polymer substrate, – Patent WO2009/022222 A2

- G. Medoro, G. Perozziello, A. Calanca, G. Simone, N. Manaresi (2010). Microfluidic Device for Isolation of cells. WO/2010/106434 A1

- G. Medoro, G. Perozziello, A. Calanca, G. Simone, N. Manaresi (2010). Microfluidic system. WO/2010/106428 A2

- G. Medoro, G. Perozziello, A. Calanca, G. Simone, N. Manaresi (2010). Method for isolation of Particles. WO/2010/106426 A1

- G. Medoro, G. Perozziello, A. Calanca, G. Simone, N. Manaresi (2009). Apparato per l'isolamento di particelle. ITBO2009A000152

In the CV there is no evidence for collaborations with enterprises in the framework of technology transfer.

Overall, the judgement of the activity related to technology transfer is: **Very good**. The points assigned are **8**.

#### SCRUTINY OF THE DEGREE OF KNOWLEDGE OF THE ENGLISH LANGUAGE:

The degree of knowledge of the English language is great, as emerging from the fact that the candidate is first/last author or corresponding author of publications in international journals, co-author of books and she has given 5 talks at international conferences.

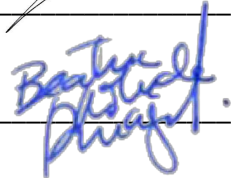
THE SELECTION BOARD

Prof. Massimiliano Marangolo (Chairman)



---

Prof. Beatriz Noheda (Member)



---

Prof. Riccardo Bertacco (Secretary)



---



PUBLIC SELECTION ESTABLISHED WITH DIRECTOR'S DECREE NO. 2022\_PRA\_D FIS\_2 OF 29/04/2022 PURSUANT TO THE NOTICE PUBLISHED IN THE OFFICIAL GAZETTE NO. 20/05/2022, n. 40 FOR 1 POSITION AS ASSOCIATE PROFESSOR FOR THE COMPETITION SECTOR 02/B1 - EXPERIMENTAL PHYSICS OF MATTER - SDS FIS/01 - EXPERIMENTAL PHYSICS, PURSUANT TO ART. 18 - LAW 240/2010, AT THE POLITECNICO DI MILANO - DEPARTMENT OF PHYSICS (PROCEDURE CODE 2022\_PRA\_D FIS\_2).

## ATTACHMENT No. 2 to the FINAL REPORT

### MERIT RANKING

SURNAME AND NAME	Overall score
Cattoni Andrea	87
Massaro Alessandro	74
Simone Giuseppina	62

Milan, 04/10/2022

#### THE SELECTION BOARD

Prof. Massimiliano Marangolo (Chairman)



---

Prof. Beatriz Noheda (Member)



---

Prof. Riccardo Bertacco (Secretary)



---