CURRICULUM VITAE

Dr. Samuel Sánchez Ordóñez
Ph.D.-Chemistry

Date of birth: May 15th, 1980/ Terrassa, Spain.
Nationality: Spanish
Father of two kids (14 and 9)
ORCID: orcid.org/0000-0002-5845-8941
/0000-0001-9713-9997
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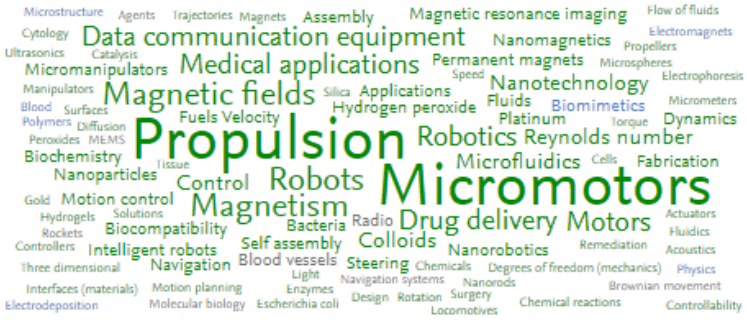
web sites:
http://www.ibecbarcelona.eu/nanodevices
https://www.icrea.cat/Web/ScientificStaff/samuel-sanchez-ordonez-578
http://www.is.mpg.de/15762527/2015

SHORT SUMMARY

+145 research papers	**+11600 cites (Google Scholar)**	**7 patents**	**26 cover pages +170 media appear.**
***h*-index: 57 (Google Scholar)**	**+ 120 invited talks**	**+ 6,5 M€ attracted. (Direct funding and personnel)**	**Prestigious Awards as Young Scientist and Innovator**

I hold a joint appointment as full Research Professor at the Institute for Bioengineering of Catalonia (IBEC) and the Institució Catalana de Recerca i Estudis Avançats (ICREA) in Barcelona (Spain), being until recently the youngest ICREA Professor of the more than 250 ICREA Professors.
I am leading the "Smart Nano-Bio-Devices" group, composed by scientists working in the multidisciplinary field of nanosciences with focus on self-powered micro- and nano-robots, integrated biosensors, physics of active matter, drug delivery systems and 3D Bio-printed soft robotics.

Previous steps:
After my **PhD** (Autonomous University of Barcelona, June 2008), I moved as an **independent postdoc -tenure-track-** at the International Center for Young Scientists at NIMS, Japan (2009-2010). There, I radically changed my research topic from biosensors to catalytic nanomachines, a striking leap from my supervisor's project. In May 2010, I became **Group Leader** at the Institute for Integrative Nanosciences (IIN), IFW Dresden (2010-2013). After receiving the ERC StG, I accepted an offer to become **Group Leader** at the Max Planck for Intelligent Systems where I consolidated my scientific independence and grew as a leader in the field of micro-nanomotors.



EDUCATION

11.2016	**Executive Education Focus Program,**	IESE Business School, Barcelona, Spain	Developing Leadership Competencies
06.2008	**PhD in Chemistry**	**Universitat Autònoma de Barcelona**	**Chemistry "Electrochemical nanobiosensors"**
09.2005	Master of Science	Universitat Autònoma de Barcelona	Chemistry: "Electrochemical Immunosensors"
03.2003	Bachelor	Universitat Autònoma de Barcelona	Chemistry

PROFESSIONAL SCIENTIFIC EXPERIENCE

Period	Institution	Position	City, Country
Since 1.2019	**Institute for Bioengineering of Catalonia (IBEC)**	**Deputy Director for the Internationalization of IBEC**	**Barcelona, Spain**
Since 1. 2019	**Harbin Institute for Technology**	**Pengcheng Honorary Visiting Professor**	**Shenzhen, China**
Since 6.2017	**Barcelona Institute for Science and Technology (BIST)**	**Group Leader**	**Barcelona, Spain**
Since 1.2015	**Catalan Institute for Research and Advanced Studies (ICREA)**	**Research Professor**	**Barcelona, Spain**
Since 1.2015	**Institute for Bioengineering of Catalonia (IBEC)**	**Senior Group Leader**	**Barcelona, Spain**
09.2013-12.2017	Max Planck Institute for Intelligent Systems	Independent Research Group Leader Mentor : Prof. Dr. Dietrich	Stuttgart, Germany
05.2010 -08.2013	Leibniz Institute for Solid State and Materials Research Dresden	Group Leader and ERC group Head **Director : Oliver G. Schmidt**	Dresden, Germany
02.2009-04-2010	International Center for Young Scientists,	Independent Scientist	Tsukuba, Japan

	National Institute for Materials Science	Tenure-track position **Mentor : Martin Pumera**	
06.2008-02.2009	Universitat Autònoma de Barcelona	Associate Professor, Analytical Dept.	Bellaterra, Spain
09. 2005-06.2008	Universitat Autònoma de Barcelona Analytical Chemistry Department	PhD Student, Assistant Professor,	Bellaterra, Spain
07.2007-10.2007	International Center for Young Scientists, National Institute for Materials Science	Guest Scientist (student fellowship)	Tsukuba, Japan
09.2003-09.2005	Universitat Autònoma de Barcelona	Assistant Professor, Analytical Chemistry Department	Bellaterra, Spain
03.2003-09.2003	Universitat Autònoma de Barcelona	Assistant Professor, Organic Chemistry Dept.	Bellaterra, Spain
10.2002-03.2003	University of Twente	Guest Scientist Inorganic Chemistry	Enschede, The Netherlands

PROJECTS AS PRINCIPAL INVESTIGATOR

Funding body	Title of the Project	Duration	Amount
European Research Council (ERC-CoG)	Cooperative Intelligence in Swarms of Enzyme-Nanobots (i-NANOSwarms)	2020-2025	2.000.000€
MICIU (Spanish ministry of Research and Universities)	Movimiento de nanorobots biocatalíticos en fluidos biológicos y medio complexo para un transporte eficiente de fármacos (BOTSinFLUIDS)	2019-2021	217.800€
CAIXAIMPULSE La Caixa Foundation	Nanorobots for bladder cancer theranostics (TERANOBOTS)	2019-2020	70.000€
Lipotec S.A.U.	Effect of a New cosmectic active ingredient in the regulation of muscular function	2019	108.300€
Lipofoods S.L. U	Efecto de un nuevo ingrediente activo nutraceutico en la regulación de la relajación muscular	2019	16.200€

BIST Ignite	Enzyme-powered, metal-organic framework based motors (MOFtors)	2019	10.000€
BIST Ignite	Towards a new generation of programable 3D printing living biobots with nanoelectronics for sensing and local stimulation (ElectroSensBioBOts)	2019	10.000€
Fundación Banco Bilbao Vizcaya Argentaria	MEDIROBOTS: Medical micro- and nano-Robots for Molecular Imaging	2018-2020	125.000€
European Research Council (ERC-PoC)	Lab-in-a-patch for PKU self-assessment (LABPATCH)	2018-2019	150.000€
Ministerio de Economia y Competitividad (Spain)	Enzyme-powered nano-motors from mesoporous silica nanoparticles (ENZWIM)	2017-2018	60.500€
Ministerio de Economia y Competitividad (Spain)	Sistemas Lab-on-a-Chip baados en micro-nanomotores para el diagnóstico de enfermendades (MICRODIA)	2016-2018	111.000€ + 88.250€ for personnel
Volkswagen Foundation	3st International Workshop on Micro-Nanomotors: Challenges and Perspectives	2016	60.000€
European Research Council (ERC-PoC)	Active Micro Cleaners for Water Remediation (MICROCLEANERS)	2016-2018	150.000€
Volkswagen Foundation	2st International Workshop on Micro-Nanomotors: Challenges and Perspectives	2014	50.000€
Volkswagen Stiftung	Symposium “Micro- and Nanomachines 2014”	2014	51.000€
European Research Council (ERC Starting Grant)	Lab-in-a-tube and Nanorobotic Biosensors	2013-2018	1.500.000€
German Research Foundation (DFG)	Motion of chemically active objects in confined spaces	2012-2014	340.000€
Volkswagen Foundation	1st International Workshop on Micro-Nanomotors: Challenges and Perspectives	2012	26.000€
Volkswagen Foundation	Rolled-up integrative bioanalytic microsystem for single cell and biological applications	2012-2015	706.000€
Materials Nanoarchitectonics, (MANA), Japan	Guest visit abroad: Self-propelled microjets	09.2009-12.2009	10.000€

International Center for Young Scientists (ICYS), Japan	Nanomotors	2009-2010	50.000€

TOTAL: 6.000.050 €

AWARDS and RECOGNITIONS

09.2020	Nominated to the Global Young Academy	
06.2020	Selected as member of the Young Academy (only 7% success rate)	Young Academy of Spain
07.2019	2 Best Poster Awards (3rd and 4th)	International Workshop Microscale Motion and Light, Dresden, Germany.
11.2018	Best Poster Award by Science Robotics Journal	MRS Fall Meeting, Boston, USA
11.2017	Best poster Award	NanoBio&Med Conference 2017, Barcelona, Spain
09.2017	ERC Proof-of-Concept Grant for "Lab-in-a-Patch"	European Research Council
10.2017	Guinness ® World Record: smallest tubular man-made jet engine	Guinness World Record ®
8.2017	Best Poster Award	Micro-Nanomachines International Conference, Wuhan, China
1.2017	Scientific Advisory Board	Lab on Chip Journal from the Royal Society of Chemistry
12.2016	National Research Award Young Talent2016	Generalitat de Catalunya and the Catalan Foundation for Research and Innovation (FCRi).
6.2016	Advisory Board Member	Princess of Girona Foundation (Spanish King's Foundation)
2.2016	ERC Proof-of-Concept Grant for "Microcleaners"	European Research Council
5.2016	TEDx Talk "Nanorobots"	Tarragona, Spain
03.2016	"Relevant young person for the society" Award 2016	Círculo Ecuestre. (sponsored by IESE Business School, Google and Chivas the Venture)
12.2015	Best Poster Award	NanoToday Conference, Dubai
1.2016	Advisor of Educational National Program	Working Group Education Princess of Girona Foundation
07.2015	Innovator Europe Under 35	MIT TR35 Technology Reviews
06.2015	Scientific Research Award 2015	Princess of Girona Foundation
01.2015	Selected Emerging Investigators Special Issue	Chem Communications Journal
01.2015	Future Leaders in Nano-architectonics	Sci.Tech.Adv.Mater. Journal
10. 2014	'. Best poster award Self-propelled particles in confined spaces	nternational Conference on Frontiers in Nano Science, Technology and Applications Prashantinilayam, India
09.2014	MIT Technology Review 2014 Award: Top 10 Spanish Innovator under 35. "Innovator of the year"	MIT Technology Review

06.2013	Sponsored by Volkswagen Foundation: Participants attend only upon invitation and costs are paid by the sponsor.	Nobel Laureate Meeting-Chemistry. Lindau, Germany
12.2012	Best poster Award. Award of 500€	1st Herrenhäuser conference "Downscaling Science". Hannover, Germany
07.2012	ERC Starting Grant (10% success rate)	European Research Council
01.2012	Our record was (from 09.2010) selected to be in the Guinness Book of Records 2012.	Guinness Book of Records
10.2011	IFW-IIN Research Prize: Outstanding scientist in 2011	Leibniz Institute for Solid State and Materials Research Dresden (IFW), Germany.
09.2010	Guinness World Record ® for the "Smallest Man-Made Jet Engine".	Guinness World Records
09.2009	Materials Nano-architectonics (MANA) grant for 3 months as guest scientist in IFW.	Tsukuba, Japan
	Mobility fellowship BE-2007 for 3 months. Host: National Institute for Materials Science, Japan.	Generalitat de Catalunya
08.2002	Erasmus fellowship for 5 months. Host: University of Twente, the Netherlands	EU-Spanish government

PATENTS

1. Printing system for obtaining biological fibers

Patent number: EP203825971
Date: 3.07.2020
Inventors: S. Sánchez, R. Mestre, M. Guix, T. Patiño
Applicant: IBEC/ICREA

2. Multifunctional enzyme nanomotors for biomedical applications.

Patent number: PCTEP2019083662
Date: December 2018
Publication number: EP183828961 /WO2020115124
Date: 11.6.2020
Inventors: S. Sánchez, A. C. Hortelao, T.Patiño
Applicant: IBEC/ICREA

3. Portable multistage device for micromotors assisted water treatment for organic, heavy metal, microorganisms' removal. Water treatment

Patent number: EP183825264/ WO2020011995A1
Date: 13.07.2018 and publication 16.1.2020
Inventors: S. Sánchez, J. Parmar, D. Vilela, K. Villa
Applicant: IBEC/ICREA

4. **.** Method for positioning e.g. sensors in micro-electro-mechanical system, involves positioning microstructure elements within frame located on or below platform or between parts of frame, where parts of frame are extended over platform

Patent number: DE102012201713
Date: 6.02.2012
Inventors: S. Harazim, S. Sánchez, O.G. Schmidt.
Applicant: IFW Dresden

5. **.** Method for manufacturing micro fluid system used in e.g. medical field, involves providing connecting element with respect to the position on the primary polymer layer

Patent number: DE102012201714
Date: 6.02.2012
Inventors: S. Harazim, S. Sánchez, O. G. Schmidt,
Applicant: IFW Dresden

6. Dispergatoren und Verfahren zur Abwasseraufbereitung. (Dispersants and methods for wastewater treatment)

Patent number: DE 10 2013202544.1
Date: 18.02.2013.
Inventors: L. Soler, V. Magdanz, S. Sánchez, O.G. Schmidt.
Applicant: IFW Dresden

7. Method of controlling the positioning of motile cells in liquid or gaseous media

Patent number: DE102012212427 and also WO2014012801. US Patent 20,150,164,554
Date: 23.01.2014 and 2018 for US.
Inventors: V. Magdanz, S. Sánchez, O.G. Schmidt.
Applicant: IFW Dresden

ORGANISATION OF SCIENTIFIC MEETINGS

1. 2019 (Aug): International Conference on Micro-Nanomachines. Harbin, China. Organizing Committee
2. 2019 (July): ICMS-IBEC Symposium on Bioengineering. Main organizer: 120 attendants.
3. 2018 (Oct): IBERSensors conference. Bellaterra, Barcelona. Scientific Committee.
4. 2017 (Nov): "NanoBiomed conference". Barcelona Scientific Park, Barcelona, Spain. Scientific Committee. 150+ attendants.
2. 2017 (Aug.). International Conference of Micro- and Nanomachines. Wuhan, China. Scientific Committee: 200 attendants.
3. 2016 (Sept): Symposium "Biomedical Micro/Nanosystems Engineering". Max Planck Schloss Ringberg, Germany. Organizer. 44 attendants.
4. 2016 (Aug): International Workshop "BioNav16": Principles of Biological and Robotic Navigation. Dresden, Germany. Organizer. 50 attendants.
5. 2016 (Jun): International Conference "Micro-and Nano-Machines: chemical and biological nanomotors". Hannover, Germany. Organizer. 100 attendants.
6. 2015 (Sept): EUROMAT2015. Warsaw, Poland Topic Coordinator of Session A1.2: Active Soft Materials. 150 attendants.
7. 2015 (Apr): German-American Frontiers of Engineering Symposium GAFOE-2015. Potsdam, Germany. Organizing Committee of session: Nano to MicroRobotics. 80 attendants.
8. 2015 (Apr): MRS Spring meeting-Symposium. San Francisco, USA. Organizer of a Tutorial Session. Tutorial L: Bioinspired Micro- and Nanomachines and Devices. 150 direct attendants.
9. 2014 (July): International Conference "Micro-and Nano-Machines: Challenges and perspectives". Hannover, Germany. Organizer. 100 attendants.
10. 2012 (July): International Conference "Micro-and Nano-Machines: Challenges and perspectives". Dresden, Germany. Organizer. 48 attendants

MEMBERSHIPS OF SCIENTIFIC SOCIETIES

2020	Academic Member. Young Academy of Science, Spain.
2018-now	Member of the Royal Society of Chemistry, Spain.
2015 –now	Member, Materials Research Society (MRS)
2015 –now	Alexander von Humboldt: Humboldtian fellow. Germany.
2013 –now	Member, American Chemical Society (ACS)

COMMISSIONS OF TRUST

2021- ERC AdvG evaluator
2021- La Caixa Foundation expert "Junior La Caixa" program -Evaluator-
2020- Princess of Girona Scientific Award – Evaluator-
2020- Swiss National Science Foundation- Evaluator
2020- Greek National Science Foundation- Evaluator
2020 – ERC Panel Member for ERC-Starting Grant/ERC Synergy Grant
2019 – International Advisory Board/ Advanced Intelligent Systems Journal/ Wiley/Germany.
2019 – Evaluator for Spanish Ministry for Ramón y Cajal Fellowships, Spain.
2019 – Jury for the International PhD Program for La Caixa Foundation, Spain.
2018 –Member of IGNITE evaluation panel; BIST/Barcelona/Spain

2017-2018- International Master's selection Committee, BIST/Barcelona/Spain
2017 – Evaluator. Research Foundation - Flanders (Fonds Wetenschappelijk Onderzoek Vlaanderen)
2017 – European Ambassador/ Innovators Under35, MIT Tech Reviews Innovator Award.
2016 – Scientific Advisory Board/ Lab on Chip Journal/ Royal Society of Chemistry, UK.
2016 – Advisory Board Member/Princess of Girona Foundation,/Girona/ Spain.
2016-now Evaluator/ERC CoG and ERC AdvG/European Comission.
2015 – Member/ Committee of New Initiatives / Young Award Advisor/Circulo Ecuestre de Barcelona/Spain
2016 – Evaluator/ Czech Science Foundation/Czech Republic.
2016 – Evaluator/Referee PhD thesis. Nanyang Technological University, Singapore.
2015 – Evaluator/National Science Foundation/Singapore.
2015 – Evaluator/Board of Chemical Sciences (CW)/ Netherlands Organisation for Scientific Research (NWO)/ The Netherlands.

MAJOR COLLABORATIONS from last 5 years

D. Maspoch, Catalan Institute for Nanoscience and Nanotechnology/Spain. Lipobots and MOFtors.
D.-P., Kim, POSTECH/Korea. Microfluidic fabrication of micromotors
A. Roig, ICMAB/Spain. Mesoporous rods as micromotors
R, Quidant, ICFO and ETHZ. 3D tracking of motors and Au-rods.
M. Arroyo, UPC, Spain. Theory on enzyme mobility on motors
E. Julian, UAB/Spain. Generation of bladder cancer models in mice
A. Vilaseca, Hospital Clinic/Spain. Patient-derived samples of bladder cancer.
R. Martinez-Manez, UPV/Spain. Molecular gates for trigger release of drugs
M. Sitti, Max Planck Institute for Intelligent Systems/Germany. Magnetic control of nanorobots.
F. Ricci, Uni Roma2/ Italy. DNA binding for biosensing with active nanoparticles.
M. Popescu, W. Uspal, Max Planck Institute for Intelligent Systems/Germany. Theory of active matter.
J. Llop, CIC BiomaGUNE/Spain. PET-CT imaging of microbots
E. Schäffer, University of Tübingen/Germany. Force measurements of Nanomotors using optical Tweezers
I. Pagonabarraga/UB/Active particle simulations near interfaces
J. van Hest/L. Abdelmohsen/ ICMS/TU/e/ The Netherlands/ Motion of protocells and enzyme motors
M.Filice/ Universidad Complutense de Madrid/ Lipase enzyme functionalization for motion
L. Albertazzi, Technical University Eindhoven/The Netherlands.Super Resolution. Microscopy
S. Osuna/IQCC at Universidad de Girona/computational Molecular Dynamics of enzymes
X, Ma/HIT Shenzhen, China. Mesoporous silica nanomotors
X. Huang, L. Wang/ HIT Harbin, China, proteinosome based motors

SELECTED TEACHING ACTIVITIES

2020	Invited Seminar for BSc in Biotechnology and Master in Pharmacy/UB/Spain.
2016 – 2019	Invited Seminar for Master in Nanoscience, Master in Biotechnology, Bachelors in Biotechnology/University of Barcelona/Spain.
2016 – 2018	Lecturer, Leadership in science/International Center for Leadership Development (ICLD)/CEDE Foundation/Spain
2015– 2018	Invited Professor, Nanomotors/ Autonomous Metropolitan University of Mexico/Mexico
2010– 2013	Invited Lecturer, Nanorobots and Art/ Science and Art summer school at California NanoSystem Institute (CNSI)/UCLA/ Los Ángeles, USA. (2010, 2012, 2013)
2016 – 2018	Assistant Professor-Analytical Chemistry, Chemistry for bachelor's degree in chemistry, Biology, Chemical Engineering./ Autonomous University of Barcelona/Spain.

REFEREEING ACTIVITIES

Nature, Science, Science Robotics, Science Advances, Nat. Nanotech., Nat. Chem., Nat. Commun. PNAS, Chem. Rev., Chem.Soc. Rev., Nano Lett., Angew. Chem. Int. Ed., ACS Nano, J. Am. Chem. Soc, Lab Chip, Adv. Mat, Langmuir, App.Mat.Today, and many more.

EDITORIAL ACTIVITIES

Editorial Board of Adv. Intelligent Systems, Focus Editor from Lab on Chip Journal, Associate Editor from J. Micro-Bio-Robotics, Guest Editor from IEEE Transactions on NanoBioSciences and Guest Editor for the Special Themed Issue "Self-Propelled Nano- and MicroSystems" in the Nanoscale Journal from RSC.

PUBLICATIONS

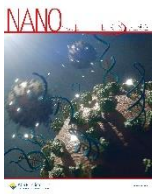
Total >140 **publications**, >110 as corresponding author, **11600 citations**, **26 cover pages**
***h*-index 57 Google Scholar/51 Scopus**;

Quality and Impact:
The quality and impact of the research carried is of the highest level according to the internationally accepted bibliometric indicators for the evaluation of the quality and impact of the scientific production. In particular, the Normalized Impact (used in the Scimago study) of the scientific production of in the period 2013-2016 is 5.98 respect to the global average value in his areas of scientific specialization, which is comparable to the most prestigious research centres and universities in the world.

2020

1. A. C Hortelao, C. Simo, M. Guix, S.Guallar-Garrido, E. Julián, D. Vilela, L. Rejc, P. Ramos-Cabrer, U. Cossio, V. Gómez-Vallejo, T. Patino, J. Llop, **S. Sánchez.** Monitoring the collective behavior of enzymatic nanomotors in vitro and in vivo by PET-CT. *Science Robotics*, **2020**. Accepted. https://doi.org/10.1101/2020.06.22.146282
2. M. Guix, R.Mestre, T. Patiño, M. De Corato, G. Zarpellon , **S. Sánchez**, 2020, Bio-hybrid soft robots with self-stimulating skeletons', *Science Robotics*, Accepted **2020** https://doi.org/10.1101/2020.09.16.299719
3. R. Mestre, T. Patiño, S. Sánchez. Bio-hybrid robotics: from the nanoscale to the macroscale. **2021.** *WIREs Nanomedicine & Nanobiotechnology*. *Accepted*. *(Invited review)*
4. L. Palacios, S. Tchoumakov, M Guix, I Pagonabarraga, **S Sánchez**, A. Grushin, Guided accumulation of active particles by topological design of a second-order skin effect. **2020**. arXiv preprint arXiv:2012.14496. *Nature* (under revision)
5. R Mestre, LS Palacios, A Miguel-López, X Arqué, I Pagonabarraga, **S. Sánchez.** Extraction of the propulsive speed of catalytic nano-and micro-motors under different motion dynamics. **2020**. arXiv preprint arXiv:2007.15316
6. R Mestre, N García, T Patiño, M Guix, M Valerio-Santiago, N Almiñana, **S. Sánchez.** 3D-printed drug testing platform based on a 3D model of aged human skeletal muscle. Biomaterials (under revision, 2020-2021). https://doi.org/10.1101/2020.06.18.158659
7. Y, Yang, X. Arqué, T. Patiño, V. Guillerm, P. R. Blersch, J. Pérez-Carvajal, I. Imaz, D. Maspoch, **S. Sánchez,** Enzyme-powered porous micromotors built from a hierarchical micro- and mesoporous UiO-type metal-organic framework. *Journal of the American Chemical Society*, **2020**. 142 (50): 20962–20967
8. Kaang, B. K., Mestre, R., Kang, D.-C., **Sánchez, S.** and Kim, D.-P. Scalable and integrated flow synthesis of triple-responsive nano-motors via microfluidic Pickering emulsification, *Applied Materials Today*, **2020**, 21, 100854.

9. Marco De Corato, I. Pagonabarraga, L.KEA Abdelmohsen, **S.Sánchez,** M. Arroyo. Spontaneous polarization and locomotion of an active particle with surface-mobile enzymes. *Phys. Rev. Fluids.* **2020**, 5, 12, 122001.
10. AC Hortelão, S García-Jimeno, M Cano-Sarabia, T Patiño, D Maspoch, **S. Sánchez.** LipoBots: Using Liposomal Vesicles as Protective Shell of Urease-Based Nanomotors, *Adv.Funct. Mat*. **2020**, 30, 42, 2002767
11. GT van Moolenbroek, T Patiño, J Llop, **S Sánchez.** Engineering Intelligent Nanosystems for Enhanced Medical Imaging. *Adv. Intelligent. Systems.* **2020**, 2, 10, 200087. (invited review)
12. De Corato, M., Arqué, X., Patiño, T., Arroyo, M., **Sánchez, S.** and Pagonabarraga, I. Self-Propulsion of Active Colloids via Ion Release: Theory and Experiments, *Physical Review Letters*, **2020**, 124, *10*, 108001.
13. I Pijpers, S Cao, A Llopis-Lorente, J Zhu, S Song, R Joosten, F Meng, H. Friedrich, D.S Williams, **S. Sánchez,** J. CM van Hest, L.KEA Abdelmohsen. Hybrid Biodegradable Nanomotors through Compartmentalized Synthesis, *NanoLetters* **2020** 20, 6, 4472–4480
14. L.Wang, M. Marciello, M.Estévez-Gay, P.ED Soto Rodriguez, Y. Luengo Morato, J. Iglesias-Fernández, X.Huang, S.Osuna, M. Filice, **S. Sánchez.** Enzyme Conformation Influences the Performance of Lipase-powered Nanomotors, *Angew.Chem.Int. Edit.* **2020**, 132, 47, 21266-21273
15. R Mestre, N Cadefau, AC Hortelão, J Grzelak, M Gich, A Roig, **S Sánchez.** Nanorods based on mesoporous silica containing iron oxide nanoparticles as catalytic nanomotors: study of motion dynamics. **2020.** *ChemNanoMat*. https://doi.org/10.1002/cnma.202000557 (front cover).
16. L. Wang, S. Song, J. van Hest, L.K.E.A. Abdelmohsen, X. Wang, **S. Sánchez.** Biomimicry of Cellular Motility and Communication Based on Synthetic Soft-Architectures. *Small*, **2020** doi.org/10.1002/smll.201907680 (invited review)
17. X Arqué, X Andrés, R Mestre, B Ciraulo, J Ortega Arroyo, R Quidant, T. Patino, **S. Sánchez**. Ionic Species Affect the Self-Propulsion of Urease-Powered Micromotors. *Research*, **2020**, https://doi.org/10.34133/2020/2424972 (invited paper for special issue)
18. M. De Corato, X.Arqué, T. Patiño, M. Arroyo**, S.Sánchez,** I. Pagonabarraga. Self-propulsion of active colloids via ion release: theory and experiments. *Phys Rev. Lett.* **2020** 124 (10), 108001 **2019**
19. A. Llopis-Lorente, A. García-Fernández, N. Murillo-Cremaes, A. C Hortelão, T. Patiño, R. Villalonga, F. Sancenón, R. Martinez-Manez, **S. Sanchez** .Enzyme-Powered Gated Mesoporous Silica Nanomotors for On-Command Intracellular Payload Delivery. *ACS Nano* **2019**, 13, 10, 12171-12183
20. D Xu, Y Wang, C Liang, Y You, **S Sanchez**, X Ma. Self-Propelled Micro/Nanomotors for On Demand Biomedical Cargo Transportation. *Small*, **2019** doi.org/10.1002/smll.2019024641902464
21. X. Arqué, A. Romero-Rivera, F. Feixas, T. Patiño, S. Osuna**, S.Sánchez.** Intrinsic Enzymatic Properties Modulate the Self-Propulsion of Micromotors *Nat. Commun.* **2019**, 10 (1), 2826.
22. L. Wang, A.C. Hortelao, X. Huang, **S. Sanchez.** Lipase-powered mesoporous silica nanomotors for triglyceride degradation. *Angew.Chem. Int.Edit.* **2019**, 131 (24) 8076-8080
23. T. Patino, A.Porchetta, A.Jannasch, A. Lladó, T. Stumpp, E. Schäffer, F. Ricci, **S.Sanchez**. Self-sensing enzyme-powered micromotors equipped with pH responsive DNA nanoswitches. *NanoLetters.* **2019**, 19, 6, 3440-3447. (Cover image)



24. R. Mestre, T. Patino, X. Barceló, S. Anand, A. Pérez-Jiménez**, S.Sánchez.** Force Modulation and Adaptability of 3D-Bioprinted Biological Actuators Based on Skeletal Muscle Tissue. *Adv. Mat. Techn.*, **2019**, 4 (2), 1800631. (Poster Award by Science Robotics)
25. L. S. Palacios Ruiz, J. Katuri, I. Pagonabarraga, **S. Sánchez**. Guidance of active particles at liquid-liquid interfaces near surfaces, *Soft Matter* **2019**, DOI: 10.1039/C9SM01016E

26. A.C. Hortelao, R. Carrascosa, N. Murillo-Creamaes, T. Patino, **S.Sánchez.** Targeting 3D Bladder Cancer Spheroids with Urease-Powered Nanomotors. *ACS Nano,* **2019**, 13 (1), 429-439. (appeared in El Periódico, La Vanguardia and more. System Patented)

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2018

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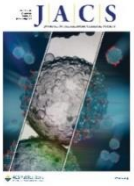

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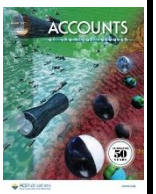

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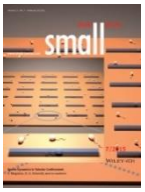

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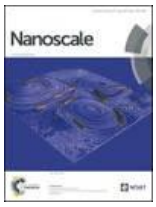

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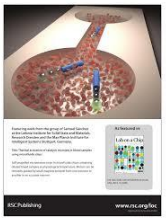

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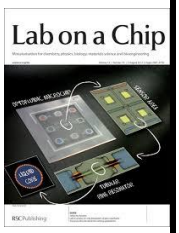

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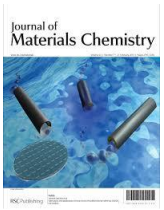

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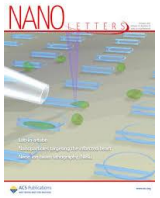

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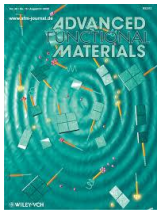
126. **S. Sánchez,** A. N. Ananth, V. M. Fomin, M. Viehrig and O.G. Schmidt. "Superfast Motion of Catalytic Microjet Engines at Physiological Temperature". *J. Am.Chem.Soc* **2011**. 133 (38), 14860–14863.
127. E. J. Smith, D. Makarov, V. M. Fomin, **S. Sánchez** and O. G. Schmidt. "Magnetic microhelix coil structures". *Phys. Rev. Lett*. **2011**, 107, 097204.

128. Y.F. Mei, A. A. Solovev, **S. Sánchez** and O. G. Schmidt. "Rolled-up nanotech on polymers: from basic perception to self-propelled catalytic microengines". *Chem. Soc. Rev*. **2011.** 40, 2109-2119. **(Front cover May 2011, invited).**
129. **S. Sánchez,** A.A. Solovev, S. M. Harazim and O.G. Schmidt, "Microbots Swimming in the Flowing Streams of Microfluidic Channels". *J. Am.Chem.Soc.* **2011**. 133, 701–703.
130. A. A. Solovev, **S. Sánchez**, Y. F. Mei, O. G. Schmidt. „Tunable catalytic tubular micro-pumps operating at low concentrations of hydrogen peroxide". *Phys. Chem. Chem. Phys*. **2011**, 13, 10131.
131. **S. Sánchez,** A.A. Solovev, S. Schulze and O.G. Schmidt, "Controlled manipulation of multiple cells using catalytic microbots". *Chem. Commun.* **2011**, 47, 698–700.
132. S. M. Harazim, P. Feng, **S. Sánchez**, Ch. Deneke, Y. F. Mei, O. G. Schmidt. "Integrated sensitive on-chip ion field effect transistors based on wrinkled InGaAs nanomembranes". *Nanoscale Res. Lett*. **2011**, 6, 215.

2010

133. **S. Sánchez,** A. A. Solovev, Y. F. Mei, O. G. Schmidt. "Dynamics of biocatalytic micro-engines mediated by friction control". *J. Am.Chem.Soc.* **2010** *132*, 13144–13145.

134. A.A. Solovev, **S. Sánchez,** M. Pumera, Y. F.Mei, O. G. Schmidt. "Magnetic control of Tubular Catalytic Microbots for the Transport, Assembly and Delivery of Microobjects". *Adv. Funct. Mat*. **2010,** 20, 2430. **(Inside Cover August 2010)**



2007-2009: 10 publications

HIGHLIGHTS

- **Achievements highlighted in different media:** Digital Trends, Huffingtonpost, Watertechnology, Science Alert, Discoverynews; ABC, El Periódico, La Vanguardia, Tendencia 21, El Economista, ABC, EFE Futuro, El Día, Hoy, El País, El Mundo Financiero, Cadena Ser, El Periódico, La Razón, El Mundo – innovadores, El Periódico – Sociedad – Catalunya, (2/2014): Green Futures Magazine, Chemie.de, IHK Braunschweig, news.discovery.com, Phys.org, Deutschlandfunk, Gizmag. FOX News, Science for the Curious Discover, The Independent, New Scientist, Vice Media Inc., Le figaro – fr, FierceDrugDelivery, Tech Times. Nanowerk, Materials Gate, RSC Chemistry World, Mother Nature Network, Chemistry Views, Ingenieur.de, Phys.org, Pollution Solutions, Inovation Toronto, SciTech Daily, Innovations Report, GenesisNanoTech.
- **TV:** La2 – TIPs, Informativos, RTVE – LAB24 Informativos Tele 5; TVE1, La Sexta, MDR Hier ab Vier, Canal Sur, El Punt Avui TV, TV3, and more,
- many of the major **radio** stations like Cadena Ser, Radio Nacional de España, Calatunya Radio, RAC1, Onda Cero, and more.
- **Newspapers/Online** more than 100 articles in specialized online websites such as Newscientist, Scientific American, derStandard.at , LiLipuz, Blick.ch, Pro-Physik.de , Die Welt and Scinexx, Nanowerk Chemistry World, MaterialsViews, RSC Chemistry World, ChemViews Magazine.
- More than 50 newspaper articles, TV appearances, Radio and press release related to MIT TR35 and Princess of Girona award from 11.2014 until 07.2015.
- In total about 200 appearances via different channels from 2015-2020. **The audience reached, just national (Spain) press is estimated in more than 3 Million persons (data from 2015-2018)according to Kantarmedia** (http://www.kantarmedia.com/es).
- **A full list of media and online links can be provided upon request.**

OUTREACH ACTIVITIES

- **Plenay Talk at Ateneu Maó,** Menorca, Spain. 5th April 2019
- Talk at High School center "Duc de Montblanc", Rubí.4th April 2019.
- **Setmana de la Ciència Plenary Talk**, Teatre La Sala de Rubí, 7th Novembre 2018, Rubí, Barcelona.
- **Public talk in collaboration with "Pint of Science"**, 16th May, Barcelona.
- **El Pais con tu Futuro.** Keynote and speach corner. Madrid, December 2017., El Pais.
- **Fundació Catalunya La Pedrera:** plenary talk during the celebration event of "Premis de Batxillerat" given to the best students from the Catalan system before entering the university. Samuel also gave in person the "Premis de Màster" and a plenary talk.
- **Bojos per la química:** Samuel gave a talk at the program "Bojos per la Química" at the ICIQ (Tarragona), a program from the same foundation. In addition, Samuel gave a round table-debate about "youth and talent" at the Pedrera House, in Barcelona.
- **Premi extraordinary de Batxillerat:** students visiting the Group's lab in a general basis every summer from the "Premi extraordinary de Batxillerat", who spend two-four weeks in our lab.
- **UAB:** "God-father" of the generation of PhD awardees, giving a plenary speech at the celebration of PhD certificates as Alumni.

- **NanoInventum:** lecture at the FestNano Festival organized at CosmoCaixa building on Nanorobotics.
- **10alamenos9:** Plenary talk at the Library from Sagrada Familia.
- **Princess of Girona Foundation**: Advisory Board of an Educational Program "Educando Talento Emprendedor" and others related education for young kids. Talks about robotics and future technologies in "premiados y escuelas" programs.
- **CaixaForum:** I have given a talk at CaixaForum (Girona) to public viewing.
- **First Lego League**: I gave the opening talk at the final of the First Lego League in Logroño, in front of 2000 attendees. Also discussed with kids in the "speech corner".
- **Setmana de la ciencia:** Outreach talk for the public at the Scientific Park of Barcelona, organized by IBEC and PCB.
- **Joves i ciència.** Accepting one Student every summer for internship in our lab.

TALENT: THESIS SUPERVISED AS GROUP LEADER

1. PhD Dissertation: Catalytic Tubular Microjet Engines

Dr. Alexander A. Solovev

03.2012. Physical Chemistry Department, Chemnitz University of Technology

Grade: Magna Cum Laude

2. PhD Dissertation: Rolled-up microtubes as components for Lab-on-a-Chip devices

Dr- Ing. Stefan M. Harazim

05.2012. Electrotechnic and Information Engineering Faculty, Chemnitz University of Technology

Grade: Magna Cum Laude

3. PhD Defense: Active colloids

Dr. Jaideep Katuri

09.2018. Faculty of Physics, University of Barcelona

Grade: Excellent Cum Laude

4. PhD Defense: Micromotors for Environmental Applications

Dr. Jemish Parmar

10.2018. Faculty of Physics, University of Barcelona

Grade: Excellent Cum Laude. **Awarded with the "Premi PIONER" from CERCA**

5. **PhD Defense:** Hybrid bio-robotics: from the nanoscale to the macroscale

Dr. Rafael Mestre

12.2020. Faculty of Physics, University of Barcelona

Grade: Excellent Cum Laude.

PhD Thesis under supervision:

2016-2021: Mrs. Ana C. Hortelao , Faculty of Physics/Nanoscience, University of Barcelona.

2017-2021: Mr. Xavier Arqué, Faculty of Farmacy/Biochemistry, University of Barcelona.

2017-2021: Mr. Lucas Palacios, Faculty of Physics/Physics, University of Barcelona.

2020-2024: Mrs. Noelia Ruiz, Faculty of Physics/Physics, University of Barcelona

2020-2024: Mrs. Meritxell Serra, Faculty of Farmacy/Biochemistry, University of Barcelona.

2021-2025: Mrs. Judith Fuentes, Faculty of Engineering, Polytechnical University of Catalonia.

Master Theses finished:

1. Adithya N. Ananth; Grade: 1.7 (1 max 5 minimum)

09. 2012. Master Nanobiophysics. Technische Universität Dresden

2. Laura Restrepo; Grade: 1.0 (1 maximum). Erasmus Mundus

09.2013. International Master Nanoscience and nanotechnology. Technische Universität Dresden

3. Jaideep Katuri; Grade: 1.3 (1 maximum)

12.2014. University of Stuttgart, Germany.

4. Varun Shridar; Grade: 1.7 (1 maximum). Erasmus Mundus Fellow.

11.2015. University- Technische Universitat Darmstadt. Germany

5. Azaam Aziz; Grade: 1.3 (1 maximum)

28.10.2015; Max Planck for Intelligent Systems and Fachhochschule Jena: 14.12.2015; Germany.

6. Lucas Palacios; Grade: 9.2/10.

09.2016. Master's Degree in Advanced Physics. Faculty of Physics, University of Barcelona, Spain.

7. Xavier Arqué; Grade: 10/10

09. 2017. Master's Degree in Molecular BiotechnologyFaculty of Farmacy, University of Barcelona, Spain

8. Silvia Vicente Rizo; Grade: 9.7/10

07.2017. Faculty of Physics. University of Barcelona, Spain

9. Natalia Salvat; Grade 9.5/10

07.2018. Faculty of Physics. University of Barcelona, Spain

10. Xavier Barceló; Grade 10/10, Matrícula de Honor.

07.2018. Faculty of Physics. University of Barcelona, Spain

11. Carlos Martínez Martin; Grade 8.7/10

09.2018. Faculty of Biology. University of Barcelona, Spain

12. Ander Eguskiza; Grade 9.5/10

06.2018. Master's in pharmacy and Biotechnology. University Pompeu Fabra, Spain

13. Joaquim Llàcer Wintle; Grade 9.5/10

06.2019. Master of Multidisciplinary Research in Experimental Sciences, BIST, Barcelona.

14. Nuria Cadefau Fabregat; Grade 9/10

8.2019. Master of Nanoscience and Nanotechnology in the Graduate Program of Nanoscale Engineering of the Université de Lyon, France.

15. Xavier Andrés; Grade: 9.9/10

09.2019. Master's Degree in Molecular Biotechnology, Faculty of Farmacy, University of Barcelona, Spain

16. Guido Van Moolenbroek: Grade: 8.5/10

10.2019 Faculty of Medicine, Leiden University, the Netherlands

17. Nerea García;

02.2020. Master's Degree in Biomedical Engineering. UB - UPC, Spain

18. Chiara Greco;

27.02.2020. Master's Degree in Mechanical Engineering. Politecnico di Torino, Italy

INVITED TALKS only for the last 5 years (2014-2020)

1. 25.11.2020. Session Chair. Tumor-targeted drug delivery systems. Bioengineering and Medtech against cancer, Paris (online event)
2. 25.11.2020. Pitch competition. Selected top12 project start-up and R&D Projects. Nanobots for bladder cancer.
3. 23.10.2020. Engineering Hybrid nano-micro and milli-robots: from nanobots to 3D Bioprinted soft Robotics Florida A&M University –CBE Seminar Series (online seminar)
4. 10.7.2020. Keynote speaker. Swarming hybrid nanobots and their imaging in vitro and in vivo. NanoBioMed Online conference (NMBO2020), ONLINE conference.
5. 10.3.2020. Invited Seminar. (Bio)Engineering Life-Like Machines across different length scales: from nanobots to 3D Biobots, ICN2 · Nanobiosensors and Bioanalytical Applkications, Bellaterra, Spain.
6. 2.12.2019. Keynote speaker and discussion panellist. Tiny self-powered submarines: Nanorobots for clean water. European Research Council (ERC) Conference: "Frontier Research: Creating Pathways to Sustainability", Brussels, Belgium.

7. 20.11.2019. Keynote talk. Nanomotors: Artificial active matter for nanomedicine. NanoBio&Med 2019, Barcelona, Spain.
8. 15.10.2019. Invited AMN Seminar. Nanorobots as novel theranostic tools: smart drug delivery and imaging. CEITEC Nanorobots Center, Brno, Czech Republic.
9. 4.9.2019. Invited Seminar. Nanomotors for environmental and biological applications. School of Materials Science and Engineering. HIT Shenzhen, China.
10. 3.9.2019. Invited Seminar. Engineering Living Systems. Shenzhen Institutes of Advanced Technology, Chinese Academy of Sciences, Shenzhen. China
11. 2.9.2019. Invited Seminar. Nanorobots and Soft Robots. SUSTECH University, Shenzhen, China.
12. 29.8.2019. Invited seminar. Chemically powered nanomotor. Chemical Engineering School, HIT Harbin, China
13. 28.8.2019. Keynote talk. Chemical nanorobots for medicine. Workshop on nanorobots for medicine, HIT Harbin, China
14. 28.8.2019. Invited talk. Enzyme-powered hybrid micro-nano-motors: Fundamentals towards applications. 2nd International Conference on Micro/Nanomachines, Harbin, China.
15. 24.8.2019. Invited seminar. Nanomotors and Biobots. Xiamen University, China.
16. 25.7.2019. Enzyme-powered nanomotors from fundamentals to applications. Microscale Motion and light Workshop, Dresden, Germany
17. 16.7.2019. Invited talk. Engineering living systems across length scales. IBEC-ICMS Symposium, Barcelona, Spain.
18. 15.7.2019. Invited Seminar.NanoBOTs to 3D BioBOTs as Future tools in Robotics and medicine, University Tor Vergata, Rome, Italy.
19. 26.06.2019. Enzyme-powered Nanorobots Towards their Applications in vivo: Enhanced Delivery, Sensing and Imaging. The Hamelin Symposium on Medical Robotics, London, UK.
20. 10.5.2019. Plenary Talk: Hybrid nanomotors: bioengineered active nano-systems powered by enzymes Opening Symposium B-Cube Dresden, Germany
21. 7.5.2019. Invited Seminar: Active nanoparticles in fluids. University of Tübingen, Germany.
22. 3.5. 2019. Invited ERC-Seminar: Nanobots to 3D BioBots as future tools in robotics and medicine Brussels, Belgium.
23. 2. 2019. Nanorobots para nuevas terapias y limpieza de agua. Biennal Ciutat I Ciència. La Pedrera, Barcelona, Spain
24. 28.11.2018. Oral talk: Bioengineering hybrid machines: from Nanobots to 3D Biobots. MRS Fall Meeting, Boston, USA
25. 22.11. 2018 Keynote talk. Bioengineering hybrid machines for nanomedicine and soft robotics/NanoBioMedConf, Barcelona, Spain
26. 13.09.2018. Invited Seminar: Enzyme powered nanomotors from fundamentals to drug delivery. ICMS at TU Eindhoven, The Netherlands.
27. 1.08. 2018. Keynote talk: Nanorobots as future tools in nanomedicine (and more)/London International Youth Science Forum (LIYSF), London, UK.
28. 28.5.2018. Invited Talk: Engineering Hybrid Machines: from nanobots to 3D BioBots. Molecular Machines workshop. Columbia University, New York City, USA.
29. 25. 05.2018. Invited Seminar: Synthetic multifunctional Nanoswimmers/ Synthetic Biogoly Lab/Massachusets Institute of Technology/USA
30. 01.02 2018. Invited Seminar: Artificial Nanoswimmers as future tools in nanomedicine/ Stanford Medical School, Molecular Imaging Program at Stanford (MIPS) Department, San Francisco, USA
31. 01.2018. Panel Chair talk: Fundamentals of active particles. Aspen School of Physics. Aspen, USA.
32. 21.12.2017. Invited talk: Nanorobots. El Pais con tu futuro, Kinepolis, Madrid.
33. 15.12.2017. Plenary talk: The chemistry and the materials of Micro-/Nano-machines Dept. Mat. Sciences, Physical, Organic and Inorganic Chemistry, University of Barcelona, Spain
34. 23.11.2017. Keynote talk: Nanorobots and their future in NanoBiomedicine II Congreso Nacional de Jóvenes Investigadores en Biomedicina., Valencia, Spain
35. 22.11.2017. Keynote talk: Enzyme Catalysis to Power Nanovehicles Towards Nanomedicine

NanoBio&Med Conf., Barcelona, Spain

36. 29.9.2017. Keynote talk: Hybrid [Micro- and Nano-machines] towards their applications in [Nanomedicine] Nanomedicine Summer School, Hospital Vall Hebron, Barcelona, Spain
37. 14.9.2017. Keynote talk: Biohybrid [Robotic] Systems: Learning From Nature. Workshop Chem BioNano, CSIC, Barcelona, Spain
38. 26.8.2017. Invited talk: Chemically and Biologically Powered [Micromachines]. International Conference on Nano-Micro-Machines, Wuhan, China
39. 8.7.2017. Seminar: Chemically engineered structures for micromotors. Institut Català d`Investigació Química (ICIQ) Tarragona, Spain
40. 8.7.2017. Invited talk: Química en movimiento: Energía química para propulsar NanoRobots Bojos per la Química, Tarragona, Spain
41. 7.7.2017. Plenary talk: [NanoRobots] and their potential applications in biomedicine. Institut d'Investigació Sanitària Pere Virgili (IISPV) , Reus, Spain
42. 14.6.2017. Seminar: Chemically engineered architectures for [nanomotors] Radboud University, Nijmegen, The Netherlands.
43. 11.7.2017. Opening talk: Samuel and Nanorobots, a Fantastic Voyage BIYSC, La Pedrera House, Barcelona Spain.
44. 13.6.2017. Plenary talk: Biohybrid [Robotic] Systems: Learning From Nature Jornades de Biologia Molecular, Barcelona, Spain.9.6.2017. Plenary talk: Powering tiny particles with catalysis: [self-powered nanomachines]. EChems Conference. Milano Maritima, Italy.
45. 3.5.2017. Keynote talk: Nanorobots for biomedical and environmental applications. Catalan Society of Chemistry, Barcelona, Spain
46. 5.4.2017. Invited talk: Experimentando un viaje alucinante International Center for Leadership Development (CEDE) (Spain (Catalonia))
47. 12.12.2016. Seminar: Nanomáquinas, ciencia ficción o realidad Universidad Autónoma Metropolitana (UAM), Mexico (Mexico)
48. 22.11.2016. Invited talk: Chemical Nanomachines as active drug nanovehicles Bionanomed 2016, Barcelona (Spain)
49. 9.11.2016. Invited talk: Nanomicrorobots what for Universitat Pompeu Fabra, Barcelona (Spain)
50. 2.11.2016. Invited talk: Enzyme powered nanomachines: Science fiction or reality University of Rome Tor Vergata / Roma (Italy)
51. 27.10.2016. Opening talk/Master of ceremony. MIT Innovators U35 Awards/Madrid (Spain)
52. 6.10.2016. Invited talk: La ciencia, un viaje alucinante. Master of Excelence Awards of Fundació Catalunya-La Pedrera, Barcelona (Spain)
53. 22-23.9.2016. Invited talk: Nanobots: catalysis powered nanoparticles. Colloquium at the Royal Academy of Sciences, Amsterdam, The Netherlands.
54. 15.7.2015. Keynote: Nanorobots: smart self-powered nanoparticles towards biomedical applications GABBA International Conference 2016. Porto, Portugal
55. 28.5.2016. TED Talk: Nanorobots. TEDx Plaça del Fòrum, Tarragona, Spain
56. 15.04.2016. Public Talk: Nanorobots: esos diminutos submarinos que nos ayudarán en el futuro Caixa Forum, Girona, Spain
57. 8.4.2016. Opening Lecture: Cómo experimentar un viaje alucinante PhD award ceremony. Autonomous University of Barcelona, Spain.
58. 16.3.2016. Invited Talk: Cómo experimentar un viaje alucinante International Course on Leadership Development. Granada, Spain.
59. 01.03.2016. Lecture: Nano-Robots and Nano-Machines: how small can you dream them? Nano-Robots. Award ceremony Joven Relevante, Barcelona, Spain
60. 27-29.2.2016. Invited talk: Experiments on active matter at the micro- and nano-scale. International workshop Soft Matter at interfaces. Tegernsee, Germany.
61. 23.2.2016. Invited Lecture: Nanrobots: the future smart tools in medicine?. GABBA International PhD program. Porto, Portugal.

62. 19.2.2016. Invited Lecture: Fantastic Voyage: Back where everything started. Acte premis Catalunya-La Pedrera, Mont Sant Benet, Barcelona, Spain.
63. 11.2.2016. Lecture: Nanobots Relevantes. Círculo Ecuestre de Barcelona, Barcelona, Spain.
64. 27-19. 1. 2016. Invited talk: NanoBots for Medicine and more. Global Robots Expo. Madrid, Spain
65. 3-4.12.2015. Seminar: Engineering small self-powered nano-bio-devices. POSTECH/Chemical Engineering Department , Korea, Republic of (South Korea).
66. 1-2.12.2015. Seminar: Ultra-compact smart nano-bio-devices for (bio)sensing and nanorobotics POSTECH/Chemical Engineering Department , Korea, Republic of (South Korea).
67. 22-25.9.2015. Invited talk: Strategies for controlling and guiding catalytic micro-motors Gordon Conference Oscillations Instabilities in Chemical Systems, Stowe, USA
68. 21.9.2015. Summer School: Microswimmers based on tubular micro- and nanojets Jülich Forschungzentrum , Germany
69. 22-25.9.2015. 07.03.2016. Students residence Ramon Llull, University of Barcelona, Spain.
70. Lecture: Nanomachines. Summer School, Jülich, Germany
71. 22.9.2015 Highlight talk. Synthesis of chemically powered nanomotors. EUROMAT. Warsaw, Poland.
72. 7-11.9.2015. Keynote speaker: Nano-bots as future trends in nano-bio-medicine. TNT Conference. Toulouse, France.
73. 06.2015. Invited Appearance at MIT TR35 Germany representing Spanish innovators U35 2015, Berlin, Germany.
74. 22.6.2015 Invited talk: Engineering Chemical Micro-and Nanomotors. Engineering Chemical Complexity, Munich, Germany.
75. 27.5.2015. Plenary talk: Fantantic Voyage: where everything started. Jornades Doctorals, UAB Bellaterra, Spain
76. 22.5.2015. Invited talk: Active Colloidal micromotors. , ZCAM Conference, Zaragoza, Spain.
77. 16.5.2015. Invited Talk: Smart Nano-Bio-Devices. TAU-IBEC Symposium, Barcelona, Spain
78. 15.4.2015. Introductory Speaker: Nano-to Micro-Robotics. GAFOE Meeting, Potsdam, Germany.
79. 8.4.2015. Tutorial Lectures: Bio-inspired Micro-and Nanomachines. MRS Tutorial Spring Meeting. San Francisco, USA.
80. 9.12.2014. Colloquium: Lab-in-a-tube and Nanorobotics. Chemical Physics Faculty, Universität Stuttgart, Germany.
81. 1.12.2014 Invited talk: Chemically powered nanomotors: from simple actuation to collective behavior. Duplex Discussions Meeting, Tegernsee, Germany.
82. 13.11.2014. Keynote Speaker: Chemically powered nanorobots towards a “Fantastic Voyage” NanoBioMed Conference, Barcelona, Spain
83. 13.10.2014. Invited talk: Chemically powered Micro- and Nano-motors. Fluctuation of Complex Systems, Venice, Italy.
84. 23-25.9.2014. Keynote speaker: V Conference CIDIQ (Congreso Internacional de Química) Mexico DF, Mexico.
85. 15.09.2014. Keynote Invited talk: Bioinspired catalytic nanorobots: self-powered nano-bio-devices. Special Session at E-MRS.Warsaw, Poland.
86. 2.5.2014. Invited talk: Self-powered micromotors: origin of propulsion, motion control and potential applications. Soft Matter at Interfaces 2014, Tegernsee, Germany.
87. 21-25.04.2014. Oral talk: Multifunctional Micro-motors from self-folded films cleaning polluted water. MRS Spring Meeting 2014, San Francisco, USA.
88. 21-25.04.2014. Oral talk: A Versatile 3D Tubular Platform for Single Cell Analysis and Study MRS Spring Meeting 2014, San Francisco, USA.
89. 15.04.2014. Invited Lecture: Ultra-compact smart nano-bio-devices for (bio)sensing and nanorobotics Universidad Metropolitana de México Azcapotzalco. Ciudad de México, México,
90. 5-7.03.2014. Invited poster presentation: Catalytic micromotors. MANA International Symposium 2014.Tsukuba, Japan,
91. 3-4.03.2014. Invited talk: Artificial Nanomachines Materials Nanoarchitectonics (MANA) Reunion Workshop.Tsukuba, Japan.

92. 14.03.2014. Seminar: Smart Nanodevices in nanorobotics and bio-nano-engineering. Institut de Bioenginyeria de Catalunya (Ibec Barcelona).Barcelona, Spain.
93. 20.03.2014. Invited talk:Bridging cell biology, chemistry and microfluidics with engineered nanomaterials. Cfaed Festival. TU Dresden. Dresden, Germany.
94. 20.2.2014. Seminar: Catalytic Nanomotors for active transport in lab-on-chip devices. Department of Chemical Technology. TU Dresden. Dresden, Germany.
95. 11.02.2014. Seminar: Smart compact devices for bioapplications. University of Heidelberg. Heidelberg, Germany.
96. 14.11.2014. Seminar: Catalytic nanomachines: fundamentals and potential applications Department of "Theory of Inhomogeneous Condensed Matter". Max Planck Institute for Intelligent Systems, Stuttgart, Germany,