

Part A. PERSONAL INFORMATION

CV date

11/12/20

First and Family name	Jesús Alberto Escarpa Miguel		
Social Security, Passport, ID number	██████████	Age	██
Researcher codes	Open Researcher and Contributor ID (ORCID**)	0000-0002-7302-0948	
	SCOPUS Author ID (*)	6603805710	
	WoS Researcher ID (*)	N-2293-2016	

A.1. Current position

Name of University/Institution	Universidad de Alcalá (UAH)		
Department	Analytical Chemistry, Physical Chemistry and Chemical Engineering		
Address and Country	Ctra. Madrid-Barcelona Km 33,600. 28871 Alcalá de Henares, Madrid-Spain		
Phone number	+34-91-8854995	E-mail: alberto.escarpa@uah.es	
Current position	Full Professor of Analytical Chemistry	From	15/12/17
Keywords	Analytical miniaturization and nanotechnology, nanomaterials for optical and electrochemical (bio)-sensing, electrochemical microfluidics, lab-on-a-chip technology, micromotors		

A.2. Education

PhD, Licensed, Graduate	University	Year
Chemistry Degree	Universidad de Alcalá	1993
PhD in Chemistry	Universidad de Alcalá	1998

A.3. General indicators of quality of scientific production

Number six-year research (date of last granted): 4 (2018)

Number of Thesis supervised (since 01/01/2010): 15 (6 more in progress)

h-index: 47 (Scopus), 46 (ISI Web of Knowledge)

Total citations: 6990 total citations (6068 without self-citations) (Scopus, December 2020). 6903 total citations (6026 without self-citations) (ISI Web of Knowledge, December 2020)

Average citations/year for the past five years: 704 (Scopus, December 2020). 264 (ISI Web of Knowledge, December 2020)

175 articles in ISI peer-reviewed journals (95% in Q1), 90% articles as corresponding author
1 Book (complete) as author, **3** Book (complete) as Editor (2 in the last five years), **12** book chapters.

30 international invited lectures (20 in the last five years). 5 plenary lectures in international conferences, last 5 years.

Part B. CV SUMMARY

Dr. Alberto Escarpa is Full Professor of Analytical Chemistry at the University of Alcalá. He has received several highly prestigious awards such the NATO Fellowship to perform postdoctoral research at the New Mexico State University (USA) in 2001, the "Young Investigator Award" by the University of Alcalá in 2003, the International Dropsens Award "Best research work in applied electroanalytical chemistry" (finalist) in 2015 and best patent from the University of Alcalá in 2019. He served as guest professor in international Universities and research centers such as University of California San Diego (EEUU), International Center for Young Scientists in National Institute for Materials Science (Tsukuba, Japón) or CIDETEQ (Querétaro, México). He has also been Visiting Professor in the Buenos Aires University and



he is currently Visiting Professor in Universidad Nacional Agraria La Molina (Peru). Dr. Escarpa is also member of the Collegium of the PhD in Food Science at Teramo University (Italy). Dr. Escarpa has also recently signed a cooperation as official partner with the “*Nanorobots Research Center*” (Czech Republic) for joint European and International projects application. He is the leader and founder of the research group “Analytical Miniaturization and Nanotechnology” since 2003. His main research interests are analytical miniaturization and nanotechnologies, new nanomaterials for optical and electrochemical (bio)-sensing, electrochemical microfluidics, lab-on-a-chip technology and self-propelled micromotors. He has co-authored more than 175 peer-reviewed articles in leading international peer-review journals, 6 patents and 12 book chapters, yielding an h-index of 47. He has edited and authored 3 books including *Miniaturization of analytical systems: principles, designs and applications* (Wiley, 2009), *Food Electroanalysis* (2015, Wiley) and *Carbon-based Nanomaterials in Analytical Chemistry* (RSC, 2019). He has recently been included in the top-1% of most cited chemists in the world, and in the top-145-ranked (#76) chemistry researchers in Spain. His works have been featured and highlighted on several occasions as cover of top journals (*Angewandte Chemie International Edition*, *Chemical Science*, *Chemistry: A European Journal*, *Lab on a Chip*, *Analytical Chemistry*, *Analyst*) and social scientific media (*Chemical World* from RSC, *Separations Now* from Wiley and *C&EN news* from ACS, *Nanowerk*). He has also supervised 17 PhD students and several postdoctoral researchers. He has given more than 40 invited talks in highly international meetings about microfluidics and miniaturization of analytical chemistry. He has also organized several international congresses such as I Workshop on Analytical Miniaturization and Lab on a Chip (WAM, 2008), VI Workshop Analytical Nanoscience and Nanotechnology (NyNA, 2013) or the 25th Latin American Capillary Electrophoresis and Microchip Technology (LACE, 2019). He is collaborator of Chemical Sciences and Technologies area of the Scientific Coordination, Evaluation and Monitoring Division (State Research Agency). He is member of the Editorial board of *Analysis & Sensing*, *Electrophoresis*, *Applied Materials Today*, *Sensors* and *Journal of Nanobiotechnology*. He has been Associate Editor for *RSC Advances* (2015-2019) and Associate Editor (2018-2019) for *Microchimica Acta*. He is currently Editor in Chief for *Microchimica Acta*.

Part C. RELEVANT MERITS

C.1. Publications (* denotes corresponding author)

1. K. Yuan, B. Jurado-Sánchez*, **A. Escarpa.*** Dual-propelled lanibiotic based Janus micromotors for selective inactivation of bacteria biofilms. *Angewandte Chemie International Edition* (2021), 60 (2021) 4915-4924 IF: 12,959; Rank (Chemistry, Multidisciplinary): 15/177 (Q1).
2. D. Rojas, J. F. Hernández-Rodríguez, F. Della Pelle, M. del Carlo, D. Compagnone, **A. Escarpa.*** Oxidative Stress on-chip: Prussian blue-based electrode array for in situ detection of H₂O₂ from cell populations. *Biosensors and Bioelectronics* 170 (2020) 112669, IF: 10,257; Rank (Chemistry, Analytical): 1/86 (Q1).
3. J. F. Hernández-Rodríguez, F. Della Pelle, D. Rojas, D. Compagnone, **A. Escarpa.*** Xurography-enabled thermally transferred carbon nanomaterial-based electrochemical sensors on PET-EVA films. *Analytical Chemistry* 92 (2020) 13565, IF: 6,785; Rank (Chemistry, Analytical): 7/86 (Q1).
4. J. F. Hernández-Rodríguez, D. Rojas, **A. Escarpa.*** Rapid and cost-effective benchtop microfabrication of disposable carbon-based electrochemical microfluidic devices. *Sensors & Actuators: B. Chemical* 324 (2020) 128679; IF: 7,100; Rank (Chemistry, Analytical): 4/86 (Q1).

5. A. Molinero-Fernández, M. A. López, **A. Escarpa.*** Electrochemical microfluidic micromotors-based immunoassay for C-Reactive protein determination in preterm neonatal samples with sepsis suspicion. *Analytical Chemistry* 92 (2020) 5048, IF: 6,785; Rank (Chemistry, Analytical): 7/86 (Q1).
6. A. Molinero Fernández, M. Moreno-Guzmán, L. Arruza, M. A. López,* **A. Escarpa.*** Polymer-based micromotors fluorescence immunoassay for on the move sensitive procalcitonin determination in very low birth weight infants' plasma. *ACS Sensors* 5 (2020) 1336; IF: 7,333; Rank (Chemistry, Analytical): 3/86 (Q1).
7. L. García-Carmona, A. Martín, J. R. Sempionatto, J. R. Moreto, M. C. González, J. Wang,* **A. Escarpa.*** Pacifier Biosensor: toward non-invasive saliva biomarker monitoring. *Analytical Chemistry*, 91 (2019), 13883, IF: 6,785; Rank (Chemistry, Analytical): 7/86 (Q1).
8. T. Sierra, A. González Crevillén,* **A. Escarpa.*** Determination of glycoproteins by microchip electrophoresis using Os (VI)-based selective electrochemical tag. *Analytical Chemistry* 91 (2019) 10245, IF: 6,785; Rank (Chemistry, Analytical): 7/86 (Q1).
9. M. Pacheco, B. Jurado-Sánchez,* **A. Escarpa.*** Visible light driven Janus microvehicles in biological media. *Angewandte Chemie International Edition*, 58 (2019) 18017. IF: 12,959; Rank (Chemistry, Multidisciplinary): 15/177 (Q1).
10. R. María-Hormigos, B. Jurado-Sánchez,* **A. Escarpa.*** Multi-light responsive quantum dot sensitized hybrid micromotors with dual-mode propulsion. *Angewandte Chemie International Edition* 58 (2019) 3128. IF: 12,102; Rank (Chemistry, Multidisciplinary): 14/171 (Q1). *Work chosen as cover.*

C.2. Research projects

1. **Project Title:** Nanostructured (bio)-sensed "sample-to-result" platforms for latest generation applications in clinical and food safety (S2018/NMT-4349). **Funding Institution:** Community of Madrid, TRANSNANOAVANSENS program. **Participating institutions:** University of Alcalá (Coordination Institution, 1), Complutense University of Madrid (1), Autonomy University of Madrid (3), and ICMN-CSIC (1). **Duration,** Start: 01/01/2019 **End:** 31/12/2022. **PI:** A. Escarpa. **Number of principal researchers:** 6. **Budget:** 693.450,00 EUR.
2. **Project Title:** Food quality and food innovative strategies to prevent reproductive and eating disorders, REP-EAT (713714). **Funding Institution:** European Commission, MSCA-COFUND-2015-DP-Marie Skłodowska-Curie Co-funding of regional, national and international programmes (COFUND-DP). **Participating institutions:** 18 universities, **Coordination:** University of Teramo. **Duration,** Start: 05/01/2016 **End:** 04/30/2021. **Budget:** 941.760 EUR. **Type of participation:** Participant and thesis tutor of the Marie Curie ITN scholarship.
3. **Project Title:** Micro motors-based device for early diagnosis of late-onset sepsis in very low birth weight neonates. **Funding Institution:** Caixa Capital Risk. Obra Fundacion la Caixa. Caixa Impulse 2017 Program. **Participating institutions:** University of Alcalá - San Carlos Clinical Hospital of Madrid. **Duration,** Start: 01/11/2017 **End:** 31/12/2020. **PI:** A. Escarpa. **Number of researchers:** 10. **Budget:** 70.000,00 EUR.
4. **Project Title:** Analytical ultra-miniaturization on-chip and on-drop based on tubular micromotors autopropulsed by a chemical reaction and thermomodulative effect (CTQ2017-86441-C2-1-R). **Funding Institution:** Spanish Ministry of Economy and Competitiveness. **Participating institutions:** University of Alcalá. **Duration,** Start: 01/01/2018 **End:** 31/12/2020. **PI:** A. Escarpa. **Number of researchers:** 8. **Budget:** 141.000,00 EUR. **FPI Fellowship associated to the project**

5. **Project Title:** New nanotechnologies for the design and development of biosensors platforms for clinical applications, NANOAVANSENS S2013/MIT-3029. **Funding Institution:** Community of Madrid, NANOAVANSENS program. **Participating institutions:** Complutense University of Madrid, Autonomy University of Madrid, University of Alcalá and ICMN-CSIC. **Duration,** Start: 01/10/2014 End: 30/09/2018. **PI:** J. M. Pingarrón; coordinator in Alcalá: A. Escarpa. **Number of researchers:** 6. **Budget:** 704,720 EUR. **UAH:** 111,034 EUR.
6. **Project Title:** Labs-on-a-chip integrating nanomaterials and self-propelled molecular machines: new electroanalytical platforms for neonatal clinical diagnosis (CTQ2014-58643-R). **Funding Institution:** Spanish Ministry of Economy and Competitiveness. **Participating institutions:** University of Alcalá. **Duration,** Start: 01/01/2015 End: 12/31/2017. **PI:** A. Escarpa. **Number of researchers:** 5. **Budget:** 110,000 EUR. **FPI Fellowship associated to the project.**
7. **Project Title:** "New lab-on-a-chip microsystems based on active transport by synthetic micro/nanomotors" (LOCNANOMOT) (nº 326476). **Funding Institution:** European Research Executive Agency, Marie Curie. IOF project. **Participating institutions:** University of Alcalá -University of San Diego. **Duration,** Start: 08/01/2013 End: 07/31/2016. **Coordinator:** A. Escarpa. **Co-PI:** Prof. Joseph Wang, UCSD. **Number of researchers:** 3. **Budget:** 254,925 EUR.
8. **Project Title:** New transducers based on nanomaterials for electrochemical sensors in electrokinetic microfluidic systems (CTQ2011-28135). **Funding Institution:** Spanish Ministry of Economy and Competitiveness. **Participating institutions:** University of Alcalá. **Duration,** Start: 01/01/2012 End: 31/12/2014. **PI:** A. Escarpa. **Number of researchers:** 5. **Budget:** 95.590,00 EUR. **FPI Fellowship associated to the project**

C.3. Patents

1. **Inventors:** L. García Carmona, A. Martín, J. Sempionatto, M.C. González, A. Escarpa, J. Wang. **Title:** Pacifier sensor for biomarker monitoring. **Application number:** **Applicant:** University of Alcalá/UCSD. **Country:** Spain/USA
2. **Inventors:** A. Escarpa, M.C. González, L. García Carmona, M. Moreno Guzmán. **Title:** Portable device for the detection, diagnosis and monitoring of tyrosinemia. **Application number:** P201700139. **Applicant:** University of Alcalá. **Country:** Spain (awarded best patent from the University of Alcalá in 2019)
3. **Inventors:** A. Martín, A. Escarpa. **Title:** Disposable electrodes based on filtered conductive nanomaterials. **Application number:** P201400477 (**Publication number ES 2554203 B2**). **Applicant:** University of Alcalá. **Country:** Spain

C.4. EXPERIENCE ORGANIZING R&D ACTIVITIES (OUTREACH ACTIVITIES)

Scientific & Organizing Committees. 25th Latin-American Symposium on Biotechnology, Biomedical, Biopharmaceutical, and Industrial Applications of Capillary Electrophoresis and Microchip, Alcalá de Henares, Spain (Chair) (2019); VI Workshop on Nanoscience and Analytical Nanotechnologies (NyNA), (Chair) (2013), I Workshop on Analytical Miniaturization ("lab-on-a-chip") (Chair) (2008), XIX Congress of the Ibero-American Electrochemical Society (SIBAE) (2010). Permanent scientific committee member of NyNA and LACE.

C.5. DOCTORAL STUDENT SUPERVISION

17 Doctoral Thesis (as supervisor) (14 with European/International Mention):

- 6 Extraordinary Awards of Doctorate.
- 3 Awards for the Best Thesis in Chemistry of the Community of Madrid of the Royal Spanish Society of Chemistry.
- 1 Award for the best Thesis of the Society of Condueños of the UAH.
- 1 National Award for the best Thesis of Health Sciences of Funcas Foundation.