

Part A. PERSONAL INFORMATION

First name	DAVID		
Family name	PEREZ GUAITA		
Gender	MALE	Birth date (dd/mm/yyyy)	20/06/1985
ID number	48582687V		
e-mail	David.perez-guaita@uv.es	ResearchGate	Google in
Open Researcher and Contributor ID (ORCID) (*)	0000-0002-2640-2927		

A.1. Current position

Position	Ramon Y Cajal Resarcher – R3 Certificaion		
Initial date	01/03/2021		
Institution	Universidad of Valencia		
Department/Center	Química Analítica		
Country	Spain	Teleph. number	+34963844608
Key words	230102 - Biochemical analysis; 230103 - Chromatographic analysis; 230108 - Infrared spectroscopy; 230112 - Microscopy; 230117 - Raman spectroscopy; Translational Research		

A.2. Previous positions (research activity interruptions, indicate total months)

Period	Position/Institution/Country/Interruption cause
2021-	Ramon Y Cajal Resarcher
2019-2021	MSCA Fellow/ TU Dublin/ Irlanda/ Ramon y Cajal Contract
2014-2019	Post-doc/ Monash University/ Australia
2014	Predoc Research Visit/ Monash University/ Australia/ 4 months
2012	Predoc Research Visit/ University of Ulm/ Germany / 4 months
2010-2014	PhD Candidate/ University of Valencia/ V segles grant
2009	Predoc Research Visit / Universidad of Reims/ France, 6 months
2008-2009	Predoc Research Visit / Universidad of Strasbourg / France, 9 months

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
PhD Chemistry	University of Valencia	2014
MSc Experimental tech. in chemistry	University of Valencia	2011
Bachelor Chemistry	University of Valencia	2011

Part B. CV SUMMARY (max. 5000 characters, including spaces)

SCIENTIFIC EXPERIENCE: My research focuses on analytical chemistry specializing in the field of clinical spectroscopy. I have worked at different international institutions, including the University of Strasbourg (France, 9 months), the University of Reims (France, 6 months), the University of Ulm (Germany, 4 months) and Monash University (Australia, 4 months). After finishing my PhD, I did a **4-year post-doc at Monash University (Australia)** where I become an independent researcher focused on the chemometric treatment of vibrational signals. This line of research was consolidated when I obtained an Individual Fellowship in the **Maria Skłodowska-Curie program**, which led me to do another 2-year Post-doc at the **Technological University Dublin**. Finally, I obtained a **Ramon y Cajal project** that allowed me to continue my research at the SOLINQUIANA group (**University of Valencia**) where I am directing a line of research focused on clinical spectroscopy and machine learning, being in my third year and having already obtained my R3 certification.

SCIENTIFIC MILESTONES: My track record includes novel accomplishments such as the first chemical imaging of a eukaryotic cell using AFM-IR, the quantification of microproteinuria using ATR-FTIR, and the first fusion of Infrared and Raman imaging, for which I was invited to write a chapter in the series. "Methods in Molecular Biology" by Springer nature. I have also contributed to the diagnosis and research of Malaria by vibrational spectroscopy, including field trials in Thailand for "in-situ" studies or measurements in synchrotrons in Australia and France, as well as various publications on the subject, including a review in "**Chemical Reviews**". **I have also been recently awarded with the ICAVS young scientist award for the**



achievements in vibrational spectroscopy by the International Conference on Vibrational Spectroscopy committee.

SCIENTIFIC CONTRIBUTIONS: Since I gained **research independence in 2018**, my **research as corresponding author or first author has been published in top analytical journals** such as *Analytical Chemistry* (5), *Analytical Chimica Acta* (3), *Food Chemistry* or *Lab on a chip*. I have also edited two special issues of Elsevier Journals (*Microchemical J.* and *Chem. and Intell. Lab. Sys.*). I have been recently included as a member of the advisory board of *Microchemical Journal* from Elsevier (Q1).

As a Principal Investigator, my projects have funding from institutions in Spain, Ireland, Europe, Australia and Asia. My research has been published in 5 book chapters and more than 90 scientific papers in journals indexed in the web of science ($\approx 50\%$ as a first or corresponding author). In total, my works have been cited 1767 (2512) times according to the scopus database (Google Scholar) and my h-index is 26 (33). My research has been exhibited in dozens of national and international congresses in the form of a poster or oral contributions, and has been highlighted through 4 magazine covers, as well as in interviews or numbers in industrial magazines.

CONTRIBUTIONS TO SOCIETY: My research on the development of diagnostic methods based on IR have generated **two patents**, one of which has been granted in the United States. In addition, I have worked closely, through scientific collaborations or consulting contracts, with technology companies such as Biotech Resources (Australia), Rhinomed (Australia), IRIDx (USA) or Leitat Technological Center (Spain). I have participated in outreach "Open day" activities in Melbourne and Valencia.

SUPERVISION OF MASTER AND PHD STUDENTS: As a post-doc, **after achieving scientific independence 7 years ago, I supervised 1 PhD student and 6 MsC students** in the different international institutions I worked. After starting my tenure track position in the University of Valencia, **I am currently supervising 3 PhDs in my institution and 1 others in international institutions** as an external supervisor:

PhD (2023): Dale Christiansen (Monash University, 2023)

Current PhD Students: University of Valencia: Victor Navarro Esteve (FPI) / Jaume Béjar Grimalt (Investigo) / José Luis Moreno Casillas (UV Industrial PhD grant).

Current PhD Students as external supervisor: Katarzyna Skirlińska-Nosek (Jagiellonian University, Ewelina Lipiec).

INTERNATIONAL ACTIVITY: I am current member of the CLIRSPEC network. Furthermore, my different research stays and Post-docs in different labs from Europe and Australia have allowed me to create collaborations with different international researchers. Currently, I hold strong collaborations and **(I have published studies in the last two years):**

Kamilla Mallek: Diagnostic of Bladder Cancer by IR Spectroscopy, Jagiellonian U. Poland.

Hugh Byrne: Raman Spectroscopy for Elucidating Drug Uptake, TU Dublin, Ireland

Diana Bedolla: Diagnosis using Infrared Spectroscopy, Elettra Synchrotron Trieste, Italy.

Ewelina Lipiec: Chemometric analysis of TERS signals, Jagiellonian U, Poland.

Katarzina Marzek: RBC evaluation Using Vibrational Spectroscopy, Jagiellonian U., Poland

Bayden Wood: Malaria Diagnosis using IR Spectroscopy, Monash U., Australia.

Part C. RELEVANT MERITS (sorted by typology)

C.1. Publications (Highlights last 10 years. See [Scopus Profile](#) for full list)

2021 D Pérez-Guaita*, Z Richardson, G Quintás, J Kuligowski, D E Bedolla, H J Byrne, B Wood. ATR-Spin: an open-source 3D printed device for direct cytocentrifugation onto attenuated total reflectance crystals, **Lab on a Chip** [21 \(2021\), 4743-4748](#)
IF:7.52, Role: **First Author and corresponding author**

2021 David Perez-Guaita*, Z Richardson, A Rajendra, H J Byrne, B Wood. From bench to worktop: Rapid evaluation of nutritional parameters in liquid foodstuffs by IR spectroscopy, **Food Chemistry** [365 \(2021\), 130442](#)
IF:9.23, Role: **First Author and corresponding author**

2021 P Oungsakul, David Perez-Guaita*, A K. Shah, D Duffy, B R. Wood, Helle Bielefeldt-Ohmann, and M M. Hill* Addressing Delicate and Variable Cancer Morphology in Spectral Histopathology Using Canine Visceral Hemangiosarcoma, **Analytical Chemistry** [93 \(2021\), 12187-12194](#)
IF:8.01, Role: **Corresponding author**

2020. D Pérez-Guaita, M Moreno-Torres, R Jover, E Pareja, B Lendl, J Kuligowski, G Quintás*, J V Castell. Toward Rapid Screening of Liver Grafts at the Operating Room Using Mid-infrared Spectroscopy. **Analytical Chemistry**. [92 \(2021\), 14542-14549](#)
IF: 8.01, Role: **First Author**.

2020. D. Perez-Guaita*, Z. Richardson, P. Heraud, B.R. Wood. Quantification and Identification of Microproteinuria using Ultrafiltration and ATR-FTIR Spectroscopy. **Analytical Chemistry**. [92 \(3\), 2409-2416](#)
IF:6.78, Role: **First Author and corresponding author**

2020. D Pérez-Guaita, G Quintás, J Kuligowski. *Discriminant analysis and feature selection in mass spectrometry imaging using constrained repeated random sampling-Cross validation (CORRS-CV)* **Analytica Chimica Acta** [1097 \(2020\) 30-36](#).
IF: 5.97, Role: **First Author**

2018. D. Perez-Guaita, K. Kochan, M. Batty, C. Doerig, J. Garcia-Bustos, S. Espinoza, D. McNaughton, P. Heraud, B. R. Wood *Multispectral Atomic Force Microscopy-Infrared Nano-Imaging of Malaria Infected Red Blood Cells*. **Analytical Chemistry** [90 \(2018\), 3140-3148](#)
IF: 6.78, Role: **First Author**

2018. D. Perez-Guaita†; J. Kuligowski†; B. Lendl; B. R. Wood; G. Quintas: Assessment of discriminant models in infrared imaging using constrained repeated random sampling - cross validation. **Analytica Chimica Acta** [1033 \(2018\)156-164](#).
IF: 5.97, Role: **First Author**

2018. D. Perez-Guaita, K. M. Marzec, A. Hudson, C. Evans, T. Chernenko, C. Matthäus, M. Miljkovic, M. Diem, P. Heraud, J. S. Richards, D. Andrew, D. A. Anderson, C. Doerig, J. Garcia-Bustos, D. McNaughton, B. R. Wood: *Parasites under the spotlight: Applications of vibrational spectroscopy to malaria research*. **Chemical Reviews** [118 \(2018\) 5330-5358](#).
IF: 54.3, Role: **First Author**

2018. Sánchez-Illana†; **D. Pérez-Guaita†**; D. Sanjuan-Herráez; D. Cuesta-García; Máximo Vento; Jose Luis Ruiz-Cerdá; Guillermo Quintas; Julia Kuligowski. Model selection for within-batch effect correction in UPLC-MS metabolomics using quality control - support vector regression. **Analytica Chimica Acta** [1026 \(2018\) 62-68](#).
IF: 5.97, Role: **First Author**

C.2. Congress (Highlights)

2021. *Combining Pharmacokinetics and Vibrational Spectroscopy: MCR-ALS Hard soft modelling of drug uptake in vitro using tailored kinetic constraints.* **11th ICAVS** Krakow, Poland 23-26/08/2021 Oral Communication

2019. *Investigating drug uptake and mode of action in vitro using Raman microspectroscopy and MCR-ALS* **ECSBM18** Dublin, Irlanda 19-22/09/2019. Oral Communication

2017. *Hyperspectral AFM-IR imaging of malaria infected cells.* **SCIEX** Reno, USA. 08-13/10/2017 Oral Communication

C.3. Research projects as a Principal Investigator (Competitive Programs)

2023 – 2024 D Perez-Guaita (IP) Consolidación Investigadora, Ministry of Science, Spain “Development of an analytical platform for e-Health in pharmacies: vibrational spectroscopy of urine and machine learning for medical applications.” **(115000 EUR for Research Proposes)**

2023. Dr. Perez-Guaita (PI) “Study of the effects of new psychoactive substances in hepatic cells using synchrotron infrared microscopy.” ALBA Synchrotron, **Spain.**

2021 – 2024 D Perez-Guaita (IP) Proyectos I+D+I, Ministry of Science, Spain “Point-of-Care analysis in minimally invasive samples using improved attenuated total reflectance devices.” **Spain (52000 EUR).**

2021 – 2026. D Perez-Guaita (IP) Ramon y Cajal Contracts. “Translational Research In clinical Spectroscopy” Ministry of Science, **Spain. (40000 EUR for Research Proposes)**

2019-2021. Dr. Perez-Guaita (PI), “Spectro-Metrics”. Marie Sklodowska Curie Actions. European Commission, **EU-Ireland**

2020. Charlemont Grants, Travel grant scheme for early career researchers. Royal Irish Academy. **Ireland. (Up to 2500 EUR)**

2020. Dr. Perez-Guaita (PI) “Multimodal vibrational analysis of chemotherapeutic drugs uptake and cellular Response” Soleil Synchrotron, **France. (18000 EUR-Cost of 12 shifts)**

2018. Dr. Perez-Guaita (PI), “Development of an App for Predicting Nutritional Values of Food Using Infrared Spectroscopy. (School of Chemistry)” Faculty of Science's ResearchFirst scheme, Monash University, **Australia (1500 AUD)**

2018. Dr. Perez-Guaita (PI), “Chemometric Workshop at Malaysia Campus.” Faculty of Science Cross-Campus Initiative Fund, Monash University, **Malaysa (7500 AUD).**

2018. Commendation for the 2018 Faculty of Science Award for Excellence in Research by an Early Career Researcher, Monash University, **Australia (2000 AUD)**

2016. Dr. Perez-Guaita (PI) “Diagnosis of Malaria Using FIR-ATR Spectroscopy.” Australian Synchrotron, **Australia.**

C.4. Contracts, technological or transfer merits

Patent: Method and System for Detection of Disease Agents in Blood

Número: U.S. Patent No. 10,145,839

Inventors: Wood, Heraud, **Perez-Guaita** Status: **Awarded 4 December 2018, USA.**

Patent: Spectroscopic Systems and Methods for Identification and Quantification of Pathogens
International Patent Application: PCT/IB2017/055028

Inventors: Wood, Heraud, **Perez-Guaita**, Kochan. Status: Published. [WO2018033894A1](#)

Contract: Peer Review Of An Industrial Research Report.

Company: [Rhinomed](#) Dates: 18/05/21-31/12/21 Fees: **620 EUR**

Contract: Consulting for the creation of Diagnostic Models

Company: [Iridx \(USA\)](#) Dates: 01/09/22-Ongoing Fees: **800 EUR (Ongoing)**