TO MAGNIFICO RETTORE OF UNIVERSITA' DEGLI STUDI DI MILANO **ID CODE 6133**

I the undersigned asks to participate in the public selection, for qualifications and examinations, for the awarding of a type B fellowship at **Dipartimento di Chimica**

Scientist- in – charge: **Prof. Francesca Vasile**

CURRICULUM VITAE

PERSONAL INFORMATION

Surname	Franconetti
Name	Antonio

PRESENT OCCUPATION

Appointment	Structure
Adjunt Professor	Autonomous University of Barcelona

EDUCATION AND TRAINING

Degree	Course of studies	University	year of achievement of the degree
Degree	Chemistry	University of Seville	2012
PhD	Chemistry	University of Seville	2016
Master	Phiosiology & Neuroscience	University of Seville	2013
Other	Master in Clinical Trials	University of Seville	2014

REGISTRATION IN PROFESSIONAL ASSOCIATIONS

Date of registration	Association	City
2016	Spanish Royal Society of Chemistry	-

FOREIGN LANGUAGES

Languages	level of knowledge
English	B2

AWARDS, ACKNOWLEDGEMENTS, SCHOLARSHIPS

Year	Description of award
2017	Research Project Award "Bruker – University of Seville" (call 2016)
2017	*"Juan de la Cierva – Training"* Fellowship (call 2016)
2018	Extraordinary PhD award from University of Seville (call 2015/2016)
2019	Young Researher Award of Sevillian Royal Academy of Science
2019	"*Juan de la Cierva – Incoming*" Fellowship (call 2019)
2020	Postdoctoral Award from Spanish Royal Society of Chemistry
2020	Postdoctoral Researcher Fellowship from Andalusian Government (declined in favour of Juan de la Cierva)

TRAINING OR RESEARCH ACTIVITY

My career has been extremely multidisciplinary from my PhD (Outstanding, "Cum laude", 2016) combining synthesis, NMR studies and computational models. Previously, I finished a M.Sc. in Neuroscience focused my research project on targeting MAO enzymes in neurodegenerative diseases with glycan-based pro-carriers. Moreover, before starting my PhD I joined the group of Prof. Jiménez-Barbero to gain knowledge on doing conformational analysis of glycans. During my PhD, I also carried out a short stay in the Galan's group at University of Bristol (2015) developing novel glycosylation tools by using Pd-based catalysts (*Angew. Chem. Int. Ed.* 2017, 56, 3640). Arguably this PhD allows me the capability of joining the frontier both organic and physical chemistry. My achievements as PhD candidate afforded the Extraordinary PhD Award (2015-16).

As a postdoc, I was member of the Organizing Committee of 13th International Conference of the European Chitin Society (EUCHIS) as well as member of Scientific Committee of a Young Symposium, its satellite meeting (Sevilla 2017). In addition, I was awarded the "2017 Bruker-University of Seville prize" to perform a NMR project entitled "Application of high resolution NMR to the study of root exudates".

The postdoctoral position hold at Autonomous University of Barcelona (2017-18) was especially valuable to highly expand my collaboration's network within Spain. In this position, I co-supervised two BSc. projects and participated as evaluator of BSc final projects of BSc in Nanotechnology. After that, I was awarded two competitive Spanish postdoctoral programs: Juan de la Cierva – "Training" and Juan de la Cierva – "Incoming". For the first one, I moved to Palma de Mallorca (2018/2019, first year JdlC) for completing my training on theoretical calculations in the group of Prof. Frontera. This postdoc was focused on non-covalent interactions. This position put my career into the international perspective being invited to participate in the *2021 PCCP Emerging Investigators Themed Issue* (Royal Society of Chemistry, UK). Once completed the first year, I thought about applying my acquired computational knowledge to cutting-edge projects in Chemical Biology but also increasing my knowledge on NMR methodology in the context of molecular recognition phenomena (CIC bioGUNE, Bilbao). I was providing my expertise within a global scientific project on exploring, understanding, and modulating glycan-lectin interactions of biomedical interests with the final aim of developing new therapeutics but always combining experimental and theoretical perspectives.

PROJECT ACTIVITY

Year	Project
2016-2019	Molecules and Macromolecules with multitarget activity against neurodegenerative diseases
2013-2016	Valorisation of agroalimentary wastes of Procambarus clarkii and transformation in chitosan and higly-valued derivatives

CONGRESSES AND SEMINARS

Date	Title	Place
2023	Unconventional non-covalent interactions between carbohydrates and lectins	XIII Spanish Carbohydrate Meeting, Barcelona
2023	Computational Approaches to unravel the structure, interactions and catalytic features in metal-free materials	The Solar2Chem Winter School, Valencia
2023	Paradigms in Glycosciences: Non-covalent interactions and their role on the molecular recognition of carbohydates	Sevillian Royal Academy of Sciences, Sevilla
2022	Monitoring Anomerization reactions by 119Sn NMR spectroscopy	11th Biennial NMR meeting, Almeria
2020	Carbohydrates, nanoparticles and modelling: A stirred, not shaken mixture	JIQ-RSEQ Merck Simposium, webinar
2018	Tunning the interaction between Chitosan and gold nanoparticles. A theoretical perspective	XV Young researcher simposium RSEQ, Toledo
2018	Interaction between carbohydrate-based capping agents and gold nanoparticles: A theoretical perspective	29th International Carbohydrate Symposium, Lisbon
2017	Can the glycosyl cation be non-covalently stabilized on π-acceptors? A theoretical Insight	19th European Carbohydrate Symposium, Barcelona
2017	Easy access to tailored N-chitosan derivatives	13th International Conference of European Chitin Society, Sevilla
2015	Synthesis of anchored Pyridinium-chitosan platforms to desing biomaterials with molecular NLO properties	12th International Conference of European Chitin Society, Münster.

PUBLICATIONS

Books
Recent advances on the application of NMR methodologies to analyse the conformation, dynamics and interactions of saccharides. In *Carbohydrate Chemistry: Chemical and Biological Approaches*, Royal Society of Chemistry, 2020.
Elucidation of the structure of carbohydrates and their interactions by nuclear magnetic resonance spectroscopy. In *Translational Glycobiology in Human Health and disease*, Academic Press (Elsevier), 2024.

Articles in reviews (selected 10 contributions)
New Glucosamine-Based TLR4 Agonists: Design, Synthesis, Mechanism of Action, and In Vivo Activity as Vaccine Adjuvants. *J. Med. Chem.* **2023**, *66*, 3010-3029.
NMR Investigation of Protein-Carbohydrate Interactions: The Recognition of Glycans by Galectins Engineered with Fluorotryptophan Residues. *Chem. Eur. J.* **2023**, *29*, e202202208.
Structures of the Inhibitory Receptor Siglec-8 in Complex with a High-Affinity Sialoside Analogue and a Therapeutic Antibody. *JACS Au* **2023**, *3*, 204-2015.
Oligosaccharide presentation modulates the molecular recognition of glycolipids by galectins on membrane

surfaces. *Pharmaceutics*, **2022**, *15*, 145.
Glycosyl Oxocarbenium Ions: Structure, Conformation, Reactivity, and Interactions. *Acc. Chem. Res.* **2021**, *54*, 2552-2564.
Synthesis, Conformational Analysis, and Complexation Study of an Iminosugar-Aza-Crown, a Sweet Chiral Cyclam Analog. *Org. Lett.* **2020**, *22*, 2344-2349.
Tacrine-O-protected phenolics heterodimers as multitarget-directed ligands against Alzheimer's disease: Selective subnanomolar BuChE inhibitors. *Eur. J. Med. Chem.* **2019**, *181*, 111550.
The Stabilization of Glycosyl Cations Through Cooperative Noncovalent Interactions: A Theoretical Perspective. *ChemPhysChem* **2018**, *19*, 659-665.
Fluoroacetamide Moieties as NMR Spectroscopy Probes for the Molecular Recognition of GlcNAc-Containing Sugars: Modulation of the CH–π Stacking Interactions by Different Fluorination Patterns. *Chem. Eur. J.* **2017**, *23*, 3957-3965.
Palladium-Catalysed Direct Stereoselective Synthesis of Deoxyglycosides from Glycals. *Angew. Chem. Int. Ed.* **2017**, *56*, 3640-3644.

Congress proceedings
Exploring synthetic ureidyl carbohydrates for potential human adenovirus inhibition. In *The 20th International Electronic Conference on Synthetic Organic Chemistry*, 2016. https://doi.org/10.3390/ecsoc-20-a011
Synthesis of fluorescent O-Coumarin glycosides as Potential drug delivery systems for MAO inhibitors. in The 19th International Electronic Conference on Synthetic Organic Chemistry, 2016. https://doi.org/10.3390/ecsoc-19-a024

Declarations given in the present curriculum must be considered released according to art. 46 and 47 of DPR n. 445/2000.

The present curriculum does not contain confidential and legal information according to art. 4, paragraph 1, points d) and e) of D.Lgs. 30.06.2003 n. 196.

Please note that CV WILL BE PUBLISHED on the University website and It is recommended that personal and sensitive data should not be included. This template is realized to satisfy the need of publication without personal and sensitive data.

Please DO NOT SIGN this form.

Place and date: Sevilla, 10th January 2024