CV date	20/1/2025

Part A. PERSONAL INFORMATION

First name	David		
Family name	Amabilino		
Gender	Male	Birth date	11/07/1966
NIE	X2075648J	URL Web	https://icmab.es/amabilino-david-brian
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Open Researcher and Contributor ID (ORCID)		0000-0003-1674-8462	

A.1. Current position

Position	Research Professor and Director		
Initial date	2/11/2021 and 31/1/2023		
Institution	Consejo Superior de Investigaciones Científicas (CSIC)		
Department/Center	Institut de Ciència de Materials de Barcelona (ICMAB)		
Country	Spain	Teleph. number	+34 93 580 1853
Key words	Energy, Molecular Materials, Organic Synthesis, Sustainable Chemistry		

A.2. Previous positions

Period	Position/Institution/Country/Interruption cause
October 2014 — October 2021	EPSRC/GSK Professor of Sustainable Chemistry, University of Nottingham, UK. Resigned to take up present post.
April 2009 — August 2014	Research Professor, ICMAB-CSIC, took leave under Spanish Civil Service law to join the University of Nottingham.
June 2006 — March 2009	Research Scientist, ICMAB-CSIC, Promoted
April 1999 — June 2006	Tenured Scientist, ICMAB-CSIC, Promoted
January 1996 — March 1999	Postdoctoral Fellow, ICMAB-CSIC, with J. Veciana, Promoted
October 1994 — December 1995	Postdoctoral Fellow, Université Louis Pasteur, Strasbourg with Jean-Pierre Sauvage, End of contract
October 1991 — October 1994	Postdoctoral Fellow, University of Birmingham, UK with J. Fraser Stoddart, End of contract

A.3. Education

Qualification	University / Country	Year
PhD in Chemistry "*An Investigation of the Synthesis and Properties of some novel Dendritic Macromolecules*"	Royal Holloway and Bedford New College (University of London) UK	1991
Bachelor of Science with First Class Honours (B.Sc. (Hons.))	Royal Holloway and Bedford New College (University of London), UK	1988

Part B. CV SUMMARY

My present research interests focus on the green synthesis of new molecules designed to give sustainable functional materials when organised appropriately. This research covers monolayers, thin films and bulk materials, from small molecules to polymers, focussing on the effects of light on the behaviour of the materials, and the characterisation of materials by multiple microscopies, spectroscopies and diffraction techniques, as well as thermal and electrical characterisation.

Research highlights in the last ten years include the recent Nature Chemistry paper (part C1), describing the effects of light on molecular mobility, the discovery of the self-assembly mechanism in a surfactant molecule in mixed water-ethanol solutions (Chem. Sci., 2019) that showed the importance of entropic and enthalpic effects in the process, and the use of additives in 3D printing formulations (Materials & Design, 2021). Thus, soft materials are an area of particular focus, and one of the most important and pioneering initial works (Angew. Chem. 2007) showed that molecular conducting films could be prepared from a surfactant-like molecule. The collaborative aspects of my research are hugely important, including with Mariano Campoy-Quiles for the present application, where we have looked at gradients in films deposited using microfluidics (Adv. Energy Mater., 2020), with L. Pérez-García (Universitat de Barcelona) in the cited gel work, with R. Wildman, P. Beton and F. Rawson (University of Nottingham) and that with R. Raval (University of Liverpool) with whom pioneering research was done on covalent linking on surfaces (ACS Nano, 2014) and molecular motion on surfaces (Angew. Chem. 2015). Overall, I have co-authored well over 200 research papers, and authored the RSC book "Supramolecular Chemistry at Surfaces" (2016).

I re-joined the Institut de Ciència de Materials de Barcelona – Consejo Superior de Investigaciones Científicas (ICMAB-CSIC) – as Research Professor in 2021 to direct my research towards materials applications of the chemistry from my group after 7 years at the University of Nottingham to explore the area of sustainable chemistry applied to energy and materials, where I worked on materials for the photothermal capture of sunlight and photovoltaic energy conversion, areas where research is ongoing.

I have been PI and Co-I on projects whose total budget is around 40 million euros. I am PI of three projects presently, including the Severo Ochoa Excellence Award for ICMAB-CSIC (CEX2023-001263-S). A large part being the University of Nottingham Beacon of Excellence Propulsion Futures and the EPSRC Future Formulations project. I have led Marie-Sklodowska Curie initiatives, hosted postdoctoral fellows and coordinated two European projects (CHEXTAN RTN and the collaborative project RESOLVE).

I have helped train twenty Doctoral researchers – two of which received the Catalan Chemical Society Prize, and another who obtained the UAB Doctoral Prize – who now work in academe and industry – one is an ICREA researcher at the University of Barcelona, one a lecturer at the Polytechnic University of Catalunya, another in the CNRS, others work in industries such as Johnson Matthey, Intel, Persán and Illumina. I have also trained about two dozen Masters students and several postdocs.

Now Director, I was deputy director of the ICMAB-CSIC (2008-2014), Member of the Chemistry Commission of the Spanish Evaluation Agency (ANEP) 2008-2011, and have been on the panel judging the Ramón y Cajal awards (2021). I was on the Board and Director of Research for the University of Nottingham Beacon of Excellence Propulsion Futures (2017-2021), and the University of Nottingham Energy Institute (2016-2021). I was a member of the Royal Society of Chemistry Materials Division Council (2015-2021).

At conferences and workshops, I have presented around 60 invited oral contributions in total. I have helped organise several scientific meetings, notably as co-Chair of the Conference "Chiral Functional Materials" Imperial College London (11 January 2019), the Faraday Discussion "Complex Molecular Surfaces and Interfaces" Sheffield, UK (24 - 26 July 2017) and the International Conference "A Golden Age for Chemistry" Nottingham, UK (25-28 June 2017). Outreach activities include "Pint of Science" events and the MAGNET programme with a school in Catalonia.

In 2022 I was part of the team winning the Royal Society of Chemistry Materials Chemistry Division Horizon Prize: Stephanie L Kwolek Award for the discovery of chiral organic materials that allow high control of photon and electron spin and in 2011 I was awarded the Hermanos Elhuyar-Hans Goldschmidt Lectureship (Spanish and the German Chemical Societies) for my work on molecular materials. I was Associate Editor of Chemical Society Reviews, am referee for many Internationally renowned journals (from the American Chemical Society, Nature, Wiley and Royal Society of Chemistry editorials) and Fellow of the Royal Society of Chemistry.

Part C. RELEVANT MERITS

C.1. Publications Ten original publications in last ten years (Total publications approx. 240, and approx. 100 in last ten years, h-index 53 according to the Web of Science, 58 in Google Scholar).

1. Film thickness dependence of nanoscale arrangement of a chiral electron donor in its blends with an achiral electron acceptor, G. Pancotti, C.E. Killalea, T.W. Rees, L. Liirò-Peluso, S. Riera-Galindo, P.H. Beton, M. Campoy-Quiles, G. Siligardi, D.B. Amabilino, *Nanoscale*, 2025, DOI 10.1039/D4NR04269G.
2. Wireless electrical–molecular quantum signalling for cancer cell apoptosis, A. Jain, J. Gosling, S.C. Liu, H.W. Wang, E.M. Stone, S. Chakraborty, P.-S. Jayaraman, S. Smith, D.B. Amabilino, M. Fromhold, Y.-T. Long, L. Pérez-García, L. Turyanska, R. Rahman, F.J. Rawson, *Nature Nanotech*., 2024, **19**, 106-114.
3. Conducting poly(3,4-ethylenedioxythiophene) materials with sustainable carrageenan counter-ions and their thermoelectric properties. Z. Duan, J. Phillips; L. Liirò-Peluso, S. Woodward, O. Makarovsky, M.P. Weir, H. J. Pereira, D.B. Amabilino, *Mater. Adv*., 2023, **4**, 5573-5584
4. Highly electron deficient diketopyrrolopyrroles. J. Humphreys, F. Malagreca, P. Hume, E. S. Davies, S. Argent, T. D. Bradshaw, D. B Amabilino, *Chem. Commun*., 2023, **59**, 1613-1616.
5. Self-Assembled Surfactant-Polyoxovanadate Soft Materials as Tuneable Vanadium Oxide Cathode Precursors for Lithium-Ion Batteries, R. McNulty, K. Penston, S. Amin, S. Stal, J. Y. Lee, M. Samperi, L. Pérez-García, J. Cameron, L. Johnson, D.B. Amabilino, G.N Newton, *Angew. Chem. Int. Ed*., 2023, **62**, e202216066
6. Light-controlled micron-scale molecular motion. M. Samperi, B. Bdiri, C.D. Sleet, R. Markus, A.R. Mallia, L. Pérez-García, D.B. Amabilino, *Nature Chemistry,* 2021, **13**, 1200.
7. Natural optical activity as the origin of the large chiroptical properties in π-conjugated polymer thin films. J. Wade, J.N. Hilfiker, J.R. Brandt, L. Liirò-Peluso, L. Wan, X. Shi, F. Salerno, S.T.J. Ryan, S. Schöche, O. Arteaga, T. Jávorfi, G. Siligardi, C. Wang, D.B. Amabilino, P.H. Beton, A.J. Campbell, M.J. Fuchter, *Nature Comm*., 2020, **11**, 6137.
8. Microfluidic-Assisted Blade Coating of Compositional Libraries for Combinatorial Applications: The Case of Organic Photovoltaics. X. Rodríguez-Martínez, Se. Sevim, X. Xu, C. Franco, P. Pamies-Puig, L. Córcoles-Guija, R. Rodriguez-Trujillo, F. Javier del Campo, D. Rodriguez San Miguel, A. J. deMello, S. Pané, D.B. Amabilino, O. Inganäs, J. Puigmartí-Luis, M. Campoy-Quiles, *Adv. Energy Mater.*, 2020, **10**, 2001308.
9. Ground and excited states of bis-4-methoxybenzyl diketopyrrolopyrroles: Spectroscopic and Electrochemical Studies. A.S. Murphy, C.E. Killalea, J. Humphreys, P.A. Hume, M.J. Cliffe, G.J. Murray, E.S. Davies, W. Lewis, D.B. Amabilino, *ChemPlusChem*, 2019, **84**, 1413.
10. Bottom-Up Hierarchical Self-Assembly of Chiral Porphyrins through Coordination and Hydrogen Bonds. C. Oliveras-González, F. Di Meo, A. González-Campo, D. Beljonne, P. Norman, M. Simón-Sorbed, M. Linares, D.B. Amabilino, *J. Am. Chem. Soc*., 2015, **137**, 15795-15808

C.2. Congresses. Of the more than 60 oral presentations at international conferences and centres of research, 10 recent highlights follow.

1. Telluride Science Research Centre Workshop on Molecular Rotors, Motors, and Switches, 12-16 August 2024, Telluride, Colorado, USA,
   "Lights, Camera, Action: Moving Molecules in Gels" D.B. Amabilino (Invited)
2. Lu Jiaxi lecture in the College of Chemistry, 5 May 2023, Xiamen University, China,
   "Light Responsive Self-Assembled Gel Systems" D.B. Amabilino (Plenary)
3. International Conference Science and Technology of Synthetic Metals, 17-22 July 2022, Glasgow, Scotland. "New materials for organic solar cells and their imaging" D.B. Amabilino (Invited)
4. Solvay Workshop : From 2D to 3D Crystals. 21-23 March 2022, Brussels, Belgium.
   "Low dimensional crystals as paths for minimalist moving molecules" D.B. Amabilino (Invited).
5. 22nd American Conference on Crystal Growth and Epitaxy (ACCGE-22) 2-4 August 2021 Online.
   "Twisted crystals of diketopyrrolopyrroles" D.B. Amabilino (Invited)

6. IISERTVM-Royal Society of Chemistry Symposium on Advances in Chemical Sciences, 4 February, 2020, IISER-TVM, India "Self-Assembling Amphiphiles and Dyes: Fundamental Thermodynamics, Exotic Architectures and Responsive Supramolecular Systems" D.B. Amabilino (Invited)
7. Chirality at the Nanoscale, 13-17 October 2019, Ascona, Switzerland, "Chiral and achiral functional dyes that assemble into morphologically chiral crystals" D.B. Amabilino (Invited)
8. MRS Fall Meeting, 1-6 December 2019, Boston, USA
"Twisted Crystals of Chiral and Achiral Functional Materials" D.B. Amabilino (Invited)
9. RSC Macrocyclic and Supramolecular Chemistry, 17-18 December 2018, Lancaster, UK, "Supramolecular materials chemistry in dyes and gels" D.B. Amabilino (Plenary).
10. Solvay Workshop "Chiral Symmetry Breaking at Molecular Level" 28-30 November, 2018, Brussels, Belgium, "Emergence of morphological chirality in crystals" D.B. Amabilino (Invited).

C.3. Research projects. I have been PI on a total of ten projects (combined budget around 12 million euros) and worked actively as Co-I on several others, with a total budget of over 40 million euros. Five highlights from the last FIVE years are:

1. "Materials Transition for Tomorrow´s World (MATRANS42)" MICIU-AEI Severo Ochoa Excellence Award CEX2023-001263-S, Institut de Ciència de Materials de Barcelona (CSIC), 1 April 2024 - 30 March 2028. PI D.B: Amabilino € 5,660,000.
2. "Combinatorial discovery of functional interfaces for stable and efficient organic photovoltaic cells (COMFIOPV)" MICIU-AEI TED2021-131911B-I00. Institut de Ciència de Materials de Barcelona (CSIC), 1 December 2022 - 31 November 2024. Co-Pis D.B: Amabilino and M. Campoy-Quiles € 333,500.
3. "Light induced phase change energy storage in supramolecular materials systems (LIPCES)" MICIU-AEI PID2021-123873NB-I00. Institut de Ciència de Materials de Barcelona (CSIC), 1 September 2022 - 31 August 2025. Co-Pis D.B: Amabilino and K. Moth-Poulsen € 205,700.
4. "Wireless communication with cells towards bioelectronic treatments of the future" EPSRC, Swindon, UK, EP/ R004072/1, University of Nottingham, 9 April 2018 – 8 April 2023, PI F.J. Rawson, Co-I D.B. Amabilino £ 974,695
5. "Propulsion Futures Beacon of Excellence" University of Nottingham, UK (Internal competitive funding), 2 May 2017-30 April 2023, PI D. Grant, Co-I and Board Member D.B. Amabilino £ 12,000,000

C.4. Contracts, technological or transfer merits

While at the University of Nottingham (2015-2021), I acted as academic supervisor for industrial year students at Unilever Research and Development PLC, Lubrizol Ltd., GlaxoSmithKline, Reckitt Benckiser Health Care UK Ltd. and Oxford Nanosystems Ltd., interacting directly with the industrial supervisor in overseeing the projects. An interaction with Croda (a supplier of bio-based phase change materials) concerning gel based systems was also developed, and is continuing now.

In the Propulsion Futures Beacon of Excellence (University of Nottingham) I was responsible for links with Lubrizol Ltd., Solvay BV, and BNNT, LLC, and organised an Industry-Academic forum in Sustainable approaches to composites for aerospace.

Amabilino is co-inventor on two Patents (one Spanish, one British).

The project NMP4-SL-2008-214340 RESOLVE European Community (that ended in 2012) involved the company SYNCOM BV (Groningen, The Netherlands) as a partner, with whom three publications were written. While at the ICMAB-CSIC in 2012 I was contracted by a judiciary court as an expert witness in a case of industrial infringement of patent, giving experimental evidence in the case.

C.5. Outreach

I actively participate in local school events every year, including: Researchers Night, Pint of Science and "DeCiencia" in primary schools. I also instigated and participate in the ICMAB's MAGNET alliance with a primary school in Martorell aimed at improving societal inclusion through science. I am active on X, BlueSky and LinkedIn where part of the content concerns dissemination activities to all publics.