CV Date	27/07/2021

Part A. PERSONAL INFORMATION

First Name *	Elena		
Family Name *	Hernández Sánchez		
Sex *	Female	Date of Birth *	29/08/1991
ID number Social Security, Passport *	45920888-P	Phone Number	(0034) 645987661
Email Address *	elena.hdez.schez@gmail.com		
Researcher's identification number	Open Researcher and Contributor ID (ORCID)*	0000-0001-5737-0035	
	Researcher ID	Q-9012-2017	
	Scopus Author ID	57196024807	

* Mandatory

A.1. Previous positions

Period	Job Title / Name of Employer / Country
January-April/2021	Researcher / Universidad de Castilla-La Mancha / Spain
2016 - 2020	Predoctoral researcher / Universidad de Castilla-La Mancha / Spain
2019 - 2020	Associated professor / Universidad de Castilla-La Mancha / Spain
2014 - 2015	Becaria Punto de Información al Estudiante / Universidad de Granada /Spain

A.2. Education

Degree/Master/PhD	University / Country	Year
Doctorate in Nanoscience and Nanotechnology (International PhD mention)	Universidad de Castilla-La Mancha / Spain	2021
Master degree in Advanced Materials and Nanotechnology	Universidad Autónoma de Madrid / Spain	2016
Degree in Physics	Universidad de Granada / Spain	2015

A.3. General indicators of quality of scientific production

- 11 JCR articles, 6 in Q1, 2 of them in D1
- Total Citations: 98 (Scopus), 121 (Scholar)
- h index: 4 (Scopus), 5 (Scholar)
- Supervision of three Erasmus trainees (Massimiliano Murgia, Francesca Airaldi, Chiara Olla)
- 8 oral communications and 5 posters in international conferences since 2016, including in APS and ACS Meetings

Part B. CV SUMMARY

Graduated in Physics at Universidad de Granada in 2015, then I studied a Master in Advanced Materials and Nanotechnology at Universidad Autónoma de Madrid. I carried out my Master's final project about synthesis and characterization of single- and multi- core magnetic nanoparticles at the Instituto de Ciencia de Materiales de Madrid (ICMM-CSIC) under the supervision of Prof. María del Puerto Morales. I published my first paper as a resultof this research. I started my Ph.D. studies at Universidad de Castilla-La Mancha in 2016.I carry out my thesis concerning the synthesis and characterization of magnetic anisotropy nanostructures for energy and magnetic sensor applications at the Instituto Regional de Investigación Científica Aplicada (IRICA, Ciudad Real) and the Instituto de Nanociencia, Nanotecnología y Materiales Moleculares (INAMOL, Toledo). I have performed pre-doctoral stays at the University of Liverpool under the supervision of Prof. Liam O'Brien and at the University of Cagliari under the supervision of Prof. Carlo Ricci. I have attended European School on Magnetism 2019 organized by The European Magnetism Association.

Since 2016, I have participated in several research lines about magnetic nanoparticles, studying the interparticle interactions and superspin glass behavior of dense random assemblies of particles, and magnetic thin films, working on the synthesis and studying the magnetization reversal processes involved and the uniaxial magnetic anisotropy. Moreover, Ihave learned synthesis techniques as magnetron sputtering and vapor phase deposition, anda wide range of characterization techniques: x-ray diffraction, scanning electron microscopy, magneto-optical microscopy, atomic force microscopy and SQUID magnetometry.

Part C. RELEVANT ACCOMPLISHMENTS

C.1. Publications

1 M. Villanueva; E. H. Sánchez; P. Olleros-Rodriguez; et al; A. Bollero. **2021**. Effective control of the magnetic anisotropy in ferromagnetic MnBi micro-islands. *Journal of Alloys and Compounds*, 825, 156731.

2 E. H. Sánchez; G. Rodriguez-Rodriguez; R. Aragón; M. A. Arranz; E. Rebollar; M. Castillejo; J. M. Colino. **2020**. Anisotropy engineering of soft thin films in the undulated magnetic state. *Journal of Magnetism and Magnetic Materials*. 514, 167149. (Scopus 1, Scholar 3)

3 M. Ghoshani; E.H. Sánchez; S.S. Lee; et al; P.S. Normile. **2020**. On the detection of surface spin freezing in iron oxide nanoparticles and its long-term evolution under ambient oxidation. *Nanotechnology*, 32, 065704. (Scopus 1, Scholar 1)

4 J.C.S. Terra; A. Desgranges; C. Monnereau; E. H. Sánchez; J. A.De Toro; Z. Amara; A. Moores. **2020**. Photocatalysis meets magnetism: designing magnetically recoverable supports for visible-light photocatalysis. *ACS Applied Materials & Interfaces*, 12, 24895-24904. (Scopus 4, Scholar 5)

5 E. H. Sánchez; M. Vasilakaki; S. Seong Lee; et al; J. A. DeToro. **2020**. Simultaneous individual and dipolar collective properties in binary assemblies of magnetic nanoparticles. *Chemistry of Materials,* 32, 969-981. (Scopus 9, Scholar 11)

6 J. Soler-Morala; E. M. Jefremovas; L. Martínez; A. Mayoral; E. H. Sánchez; J. A. De Toro; E. Navarro; Y. Huttel. **2020**. Spontaneous Formation of Core@shell Co@Cr Nanoparticles by Gas Phase Synthesis. *Applied Nano,* 1, 87-101.

7 M. A. Arranz; E. H. Sánchez; E. Rebollar; M. Castillejo; J. M. Colino. **2019**. Form and magnetic birefringence in undulated Permalloy/PET films. *Optics Express*, 27, 21285-21294. (Scopus 2, Scholar 2)

8 E. H. Sánchez; P. S. Normile; J. A. De Toro; R. Caballero; J. Canales-Vázquez; E. Rebollar; M. Castillejo; J. M. Colino. **2018**. Flexible, multifunctional nanoribbon arrays of palladium nanoparticles for transparent conduction andhydrogen detection. *Applied Surface Science,* 470, 212-218. (Scopus 3, Scholar 7)

9 T. Polek; E. H. Sánchez; J. M. Colino; et al; T. Endo. **2018**. Temperature-dependent magnetic and resistive switching phenomena in (La,Ba)MnO_3/ZnO heterostructure. *Superlattices and Microstructures*, 120, 525-532. (Scopus 2, Scholar 2)

10 H. Gavilán; E. H. Sánchez; M. E. F. Brollo; et al; L. Gutiérrez. **2017**. Formation mechanism of maghemite nanoflowers synthesized by polyol mediated process. *ACS Omega*, 2, 7172-7184. (Scopus 39, Scholar 48)

11 J. A. De Toro; M. Vasilakaki; S. S. Lee; M. S. Andersson; P. S. Normile; N. Yaacoub; P. Murray; E. H. Sánchez; et al; J. Nogués. **2017**. Remanence Plots as a Probe of Spin Disorder in Magnetic Nanoparticles. *Chemistry of Materials*, 29, 8258-8268. (Scopus 37, Scholar 42)

C.2. Conferences and meetings

1 J. C. S. Terra; A. Desgranges; C. Monnereau; E. H. Sánchez; J. A. De Toro; Z. Amara; A. Moores. Photocatalysis meets magnetism: designing magnetically recoverable supports for visible-light photocatalysis. 48th World Chemistry Congress & 104th Canadian Chemistry Conference and Exhibition. IUPAC CCCE 2021. **2021**. Participatory - poster.

2 M. Villanueva; E. H. Sánchez; P. Pedraz; P. S. Normile; C. Navío; J. Camarero; J. A. De Toro; A. Bollero. MnBi thin film micromagnets with tunable anisotropy for high temperatureapplications. 2021 TMS Annual Meeting & Exhibition. The Minerals, Metals & Materials Society. **2021**. United States of America. Participatory - invited/keynote talk.

3 R. Delgado Garcia; E. H. Sánchez; F. Galvez; G. Rodriguez Rodriguez; J. M. Colino. Permalloy thin films on V-groove patterned substrates for sensoring and biological applications. 15th Young Science Symposium. Universidad de Castilla-La Mancha. **2021**. Spain. Participatory - oral communication.

4 E. H. Sánchez; R. Aragón; M. A. Arranz; G. Rodriguez Rodriguez; E. Rebollar; M. Castillejo; J. M. Colino. Anisotropy engineering of soft thin films in the undulated magnetic state. Joint European Magnetic Symposia 2020. The European Magnetism Association. **2020**. 'Participatory - poster.

5 E. H. Sánchez; M. Vasilakaki; S. S. Lee; P. S. Normile; G. Muscas; M. Murgia; M. S. Andersson; G. Singh; R. Mathieu; P. C. Ricci; D. Peddis; K. N. Trohidou; J. Nogués; J. A. De Toro. Simultaneous individual and dipolar collective properties in binary assemblies of magnetic nanoparticles. Joint European Magnetic Symposia **2020**. The European Magnetism Association. 2020. 'Participatory - poster.

6 E. H. Sánchez; G. Rodriguez Rodriguez; R. Aragón; M. A. Arranz; E. Rebollar; M. Castillejo; J. M. Colino. Experimental and modelling results of Permalloy thin films in the undulated magnetic state. Joint Conference of the Condensed Matter DIvisions of EPS-CMD and RSEF-GEFES (CMD2020GEFES). European Physical Society. **2020**. 'Participatory - poster.

7 E. H. Sánchez; P. S. Normile; J. A. De Toro; R. Caballero; E. Rebollar; M. Castillejo; J. M. Colino. Nanoribbon arrays of palladium nanoparticles on flexible substrates for transparent conduction and hydrogen detection. Joint Conference of the Condensed Matter DIvisions of EPS-CMD and RSEF-GEFES (CMD2020GEFES). European Phisical Society. **2020**. Participatory - oral communication.

8 M. Villanueva; E. H. Sánchez; P. Pedraz; P. Olleros-Rodríguez; L. Zha; P. Perna; J. Camarero; J. B. Yang; P. S. Normile; J. A. De Toro; C. Navío; A.Bollero. Stripe domain patterns in MnBi micro-islands with perpendicular anisotropy. Joint Conference of the Condensed Matter DIvisions of EPS-CMD and RSEF-GEFES (CMD2020GEFES). European Physical Society. **2020**. 'Participatory - poster.

9 C. Muñoz Rodríguez; M. Villanueva; L. Feng; E. H. Sánchez; J. Rial; J. Camarero; C. Navío; E. M. Palmero; T. Mix; T. Woodcock; P. S Normile; J. A. De Toro; A. Bollero. Mn-based permanent magnets: from thin film micromagnets to bulk magnets obtained by hotpressingof gas-atomized powder. 2020 TMS Annual Meeting & Exhibition. The Minerals, Metals& Materials Society. **2020**. United States of America. Participatory - invited/keynote talk.

10 E. H. Sánchez; R. Aragón; M. A. Arranz; G. Rodriguez Rodriguez; E. Rebollar; M. Castillejo; J. M. Colino. Large amplitude, nanoripple array of soft magnetic film grown on pre-patterned polymer foils: surface morphology and uniaxial magnetic anisotropy. JornadaDoctoral de Jóvenes Investigadores en Magnetismo. Club Español de Magnetismo (CEMAG). **2019**. Spain. Participatory - oral communication.

11 M. Vasilakaki; E. H. Sánchez; N. Daffé; A. Juchin; J. A. De Toro; J. Nogués; K. Trohidou. Magnetic behavior of binary assemblies of nanoparticles: A multiscale modeling study. Joint European Magnetic Symposia (JEMS). The European Magnetism Association. **2019**. Sweden. Participatory - invited/keynote talk.

12 M. Villanueva; E. H. Sánchez; P. S. Normile; J. A. De Toro; J. Camarero; C. Navío; A. Bollero. Tuning the magnetic anisotropy of high-coercive MnBi thin films. Joint European Magnetic Symposia (JEMS). The European Magnetism Association. **2019**. Sweden. Participatory - oral communication.

13 M. Villanueva; E. H. Sánchez; P. S. Normile; J. A. De Toro; J. Camarero; C. Navío; A. Bollero. Effective control of the magnetic anisotropy direction in MnBi thin films during film growth. 9th Early Stage Researchers Workshop in Nanoscience (ESRW). FUNDACIÓN IMDEA NANOCIENCIA. **2019**. Spain. Participatory - oral communication.

14 M. Villanueva; E. H. Sánchez; P. S. Normile; J. A. De Toro; J. Camarero; C. Navío; A. Bollero. High-coercivity MnBi ultra thin films grown on MgO (001). 10th International Symposium on Metallic Multilayers (MML 2019). FUNDACIÓN IMDEA NANOCIENCIA. **2019**. Spain. 'Participatory - poster.

15 E. H. Sánchez; P. S. Normile; J. A. De Toro; R. Caballero; J. Canales Vázquez; E. Rebollar; M. Castillejo; J. M. Colino. Flexible, multifunctional nanoribbon arrays of palladium nanoparticles for transparent conduction and hydrogen detection. XIII Young Science Symposium. Universidad de Castilla-La Mancha. **2019**. Spain. Participatory - oral communication.

16 E. H. Sánchez; P. S. Normile; M. S. Andersson; R. Mathieu; P. Nordblad; D. Peddis; J. A. De Toro. Influence of particle anisotropy on the collective freezing temperatureof dense assemblies of oxide particles. International Conference on Fine Particle Magnetism (ICFPM 2019). Universidad de Oviedo. **2019**. Spain. Participatory - oral communication.

17 E. H. Sánchez; M. Vasilakaki; P. S. Normile; S. S. Lee; M. Murgia; M. S. Andersson; G. Singh; R. Mathieu; P. Nordblad; P. C. Ricci; K. N. Trohidou; J. Nogués; J. A. De Toro. Random binary compacts of magnetic oxide nanoparticles: rethinking the meaning of collective behaviour. International Conference on Fine Particle Magnetism (ICFPM 2019). Universidad de Oviedo. **2019**. Spain. Participatory - oral communication.

18 E. H. Sánchez; P. S. Normile; M. S. Andersson; R. Mathieu; P. Nordblad; D. Peddis; J. A. De Toro. Influence of particle anisotropy on the collective freezing temperature of dense assemblies of oxide particles. 12th European School on Molecular Nanoscience. Universidad Miguel Hernández de Elche. 2019. Spain. Participatory - oral communication.

19 F. Airaldi; E. H. Sánchez; S. Villa; A. Omelianchik; J. A. De Toro; F. Canepa; D. Peddis. Verwey transtion in bimagnetic multi-shell spinel iron oxide nanoparticles. XLVII Congress of the Physical Chemistry Division of the Italian Chemical Society. The Italian Chemical Society. **2019**. Italy. 'Participatory - poster.

20 E. H. Sánchez; G. Rodriguez Rodriguez; R. Caballero; J. M. Colino; P. Muñiz; P. S. Normile; J. A. De Toro; E. Rebollar; M. Castillejo. Planar arrays of nanoparticles ribbons onlaser induced surface patterns as a candidate for anisotropic transparent conductors. 2018Spring Meeting. European Materials Research Society. **2018**. France. Participatory - oral communication.

21 E. H. Sánchez; P. S Normile; M. S. Andersson; S. S. Lee; M. Vasilakaki; M. Murgia; R. Mathieu; K. N. Trohidou; J. Nogués; J. A. De Toro. Dipolar coupling effects on the coercivityof binary random compacts of oxide nanoparticles. 2018 Spring Meeting. European Materials Research Society. **2018**. France. 'Participatory - poster.

22 E. H. Sánchez; G. Rodriguez Rodriguez; R. Caballero; J. M. Colino; P. Muñiz; P. S. Normile; J. A. De Toro; E. Rebollar; M. Castillejo. Planar arrays of nanoparticles ribbons onLaser Induced Periodic Surface Structures (LIPSS) as a candidate system for anisotropic transparent conductor. Escuela Nacional de Materiales Moleculares 2018. Universidad de Málaga. **2018**. Spain. 'Participatory - poster.

23 E. H. Sánchez; P. S. Normile; M. S. Andersson; R. Mathieu; P. Nordblad; D. Peddis; J. A. De Toro. Role of the effective particle anisotropy on the magnetic properties of strongly interacting nanoparticle systems. 7th Early Stage Researchers Workshop in Nanoscience. FUNDACIÓN IMDEA NANOCIENCIA. **2017**. Spain. Participatory - oral communication.

24 E. H. Sánchez; P. S. Normile; M. S. Andersson; R. Mathieu; P. Nordblad; D. Peddis; J. A. De Toro. Role of nanoparticle magnetic anisotropy in the glass transition temperature of superspin glasses. Symposium on Magnetic Nanoparticles and Superspin Glasses. Uppsala University. **2017**. Sweden. Participatory - invited/keynote talk.

25 H. Gavilán; E. H. Sánchez; M. E. Brollo; C. J. Serna; Sabino Veintemillas Verdaguer; Lucía Gutiérrez; M Puerto Morales. Formation mechanism of flower-like magnetite nanoarchitectures. ICPMS. **2016**. Participatory - oral communication.

26 H. Gavilán; E. H. Sánchez; M. E. Brollo; C. J. Serna; Sabino Veintemillas Verdaguer; Lucía Gutiérrez; M. Puerto Morales. Polyol mediated synthesis to obtain single-core and flower-like shaped multi-core magnetite nanoparticles. 6th Early Stage Researchers Workshop. FUNDACIÓN IMDEA NANOCIENCIA. **2016**. Spain. Participatory - oral communication.

C.3. Research Stays

1 University of Cagliari. Physics Department / Optical Spectroscopy Group. Cagliari (Italy) 15/09/2019-16/11/2019.

2 University of Liverpool. Physics Department / Condensed Matter Physics Group. Liverpool (United Kingdom) 01/08/2019-01/09/2019.

3 Instituto de Química Física Rocasolano (IQFR-CSIC). Madrid (Spain) 21/05/2018-23/05/2018

4 Alba Synchrotron. Barcelona (Spain) 03/11/2017-04/11/2017

C.4. R&D and innovation projects and contracts

- Magnetic nanocomposites for energy and sensors applications (NANOESENS)
  Name principal investigator: José Miguel Colino García; José Ángel de Toro Sánchez
  Funding entity: MINECO [MAT2015- 65295-R] 01/01/2016 - 31/12/2020 Total amount: 121.000 €

C.5. Obtained grant and scholarships

- Name of grant: Erasmus + Traineeship Awarding entity: Universidad de Castilla-La Mancha
  Entity where activity was carried out: University of Cagliari Year: 2019 Duration: 3 months

C.6. Others

- Co-organizer of scientific congress: *4th Young Researchers in Magnetism 2020* - Club Español de Magnetismo (CEMAG), Spanish Chapter of the IEEE Magnetics Society
- Referee for *Physica Scripta* and *Journal of Physics: Condensed Matter.*
- Monitora durante la Jornada de puertas abiertas del Instituto Regional de Investigación Científica Aplicada (IRICA), Ciudad Real (2019)
- Seminario "Magnetismo en la materia", Escuela Técnica Superior de Ingenieros Agrónomos (Ciudad Real, 2019)
- Docencia en la Universidad de Castilla-La Mancha (2.2 créditos curso 2016/17, 2 créditos curso 2018/19, 1.2 créditos curso 2020/21)
- Animadora Científica en el Parque de las Ciencias de Granada (2012-2013)
- Monitora del "Taller de Astronomía" durante la 16ª Feria de la Ciencia y Jornada de Puertas Abiertas por el 18º Aniversario del Parque de las Ciencias, Granada (2013)
- Monitora durante la X Semana de la Ciencia, Universidad de Granada (2010)
- Monitora de la actividad "Los diez mejores experimentos de la Física" durante la IX Semana de la Ciencia, Universidad de Granada (2009)