MINISTERIO DE CIENCIA E INNOVACIÓN

Cofinanciado por la Unión Europea

AGENCIA ESTATAL DE INVESTIGACIÓN

CURRICULUM VITAE ABREVIADO (CVA)

***IMPORTANT* – This Curriculum Vitae cannot exceed 5 pages.**

Part A. PERSONAL INFORMATION

First name	Eduardo		
Family name	Ruiz-Hitzky		
Gender (*)	Male	Birth date (dd/mm/yyyy)	29/04/1947
Social Security, Passport, ID number	DNI 01353088K		
e-mail	eduardo@icmm.csic.es	URL Web https://www.icmm.csic.es/en/ruiz-hitzky-eduardo	
Open Researcher and Contributor ID (ORCID) (*)		http://www.researcherid.com/rid/G-2727-2010 ORCID 0000-0003-4383-7698	

(*) Mandatory

A.1. Current position

Position	*Ad Honorem* Research Professor		
Initial date	29/04/2017		
Institution	Agencia Estatal Consejo Superior de Investigaciones Científicas (CSIC)		
Department/Center	Instituto de Ciencia de Materiales de Madrid (ICMM)		
Country	Spain	Phone number	+34917166556
Keywords	Nanoarchitectured functional materials, Hybrid & Biohybrid nanomaterials, clay silicates, bionanocomposites, healthcare materials		

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

Period	Position/Institution/Country/Interruption cause
1988-2017	Profesor de Investigación (*Senior Research Professor*) CSIC
1985-1988	Investigador Científico (*Senior Research Scientist*) CSIC
1974-1985	Colaborador Científico (*Tenured Scientist*) CSIC
1971-1974	Boursier-Chercheur (*Fellow*), UCL-Universty of Louvain, (Belgium)
1969-1971	Becario (*Fellow Student*), Organic Chemistry Institute, CSIC, Madrid (Spain)
1966-1971	Associated Professor of Chemistry & Physics, ICAI Technical School, Madrid (Spain)

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
PhD in Chemistry	Complutense University of Madrid	1979
Docteur en Sciences	Université Catholique de Louvain (Belgium)	1974
Graduate in Chemistry	Complutense University of Madrid	1970

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

Eduardo Ruiz Hitzky is *Ad Honorem* Research Professor (*Emeritus Professor*) at the Consejo Superior de Investigaciones Científicas, CSIC (*National Research Council of Spain*), belonging to the Hybrid, Biohybrid and Porous Nanostructured Materials team at the Materials Science Institute of Madrid (ICMM-CSIC) (Prof. Dr. Eduardo Ruiz-Hitzky – Nanostructured Hybrid, Biohybrid and Porous Materials Group (csic.es). Licensed and Graduate in Chemistry at the Universidad Complutense, Madrid (1969 & 1970, respectively); Docteur ès Sciences, Université Catholique de Louvain, Belgium (1974), and Doctor en Ciencias Químicas, Universidad Complutense, Madrid, (1979).

Founder and First Director of several Departments at the CSIC the last one being: “New Architectures in Materials Chemistry Department”, created in 2010 at the ICMM-CSIC.

Professor Ruiz-Hitzky, chemist and nanotechnologist is working on a strong interdisciplinary approach, at the interface of fundamental research and industrial, environmental and biomedical applications. He is author or co-author of more than 300 publications and 20 patents (some of them transferred to industry for commercialization), mainly related to the following research topics: Nanostructured Functional Materials; Hybrid, Biohybrid, Intercalation Compounds & Nanocomposites; Bionanocomposites for Healthcare applications, etc.

Singular activity led together Prof. J.M. Serratosa, was the EU Peace Campus Program (project aiming "To contribute to the establishment of peace in the Middle East Region") starting in 1993 with the coordination on behalf of the EU and bringing together in Cairo researchers from Israel and Arab countries, including Palestinians (Gaza), Jordanians and Egyptians, facilitating the exchange of researchers including PhD graduation at the University of Jerusalem of a Palestinian student from Gaza, which was at that moment a precedent of great social and political impact. Another singular project participating E. Ruiz-Hitzky as Coordinator involves the European Central Bank and the Bank of Spain (2018-2022), investigating on EURO banknotes security features, and whose 2nd phase is currently in progress (these projects are classified as confidential/secret).

Editor of the book entitled "Bio-inorganic Hybrid Nanomaterials" (ISBN: 978-3-527-31718-9, 2007, Wiley). He was invited to write several book chapters by prestigious publishers including Wiley, Elsevier, Springer and American Scientific, being Guest Editor of Special Issues including top journals such as Advanced Materials ("Materials Science in Madrid", 2011), Progress in Polymer Science ("Progress in Bionanocomposites: From green plastics to biomedical applications", 2013) and Advanced Functional Materials (“Functional Hybrid Materials”, 2018).

He was in 2011 Invited Professor at the Collège de France, Paris (France) participating with several conferences in the seminar on Chimie des Matériaux Hybrides chaired by Professor Clément Sanchez (http://www.college-de-france.fr/site/clement-sanchez/guestlecturer-2011-10-11-17h00.htm). Senior Fellow at the National Laboratory of Nanotechnology, CNPEM Campinas (Brazil) in 2015, Invited Speaker at the Waseda University (Tokyo) in 2012 and 2014, and Invited Lecturer at the MIT, Cambridge (MA, USA), in 2017.

Management positions: Member of the Direction Committee of the Inorganic Chemistry Specialized Group (GEQI) at the Spanish Royal Society of Chemistry (RSEQ), Vice-President and President of the Spanish Clay Society, Member of the Direction Committee of the ICMM-CSIC.

Editorial activities: Editor-in-Chief of the journals: *Recent Patents in Nanotechnology*, and Associated Editor of *Current Nanoscience* (2010-2020). Member of the Editorial Board of various SCI journals.

Awards: He was awarded by the Académie Royal des Sciences, des Lettres et Beaux Arts de Belgique, (Brussels, 1976); the Association des Chimistes de l’Université de Louvain (Louvain 1976); the Ministry of Sugar (Havana, 1995); the National Academy of Sciences (Havana, 2008, 2017, 2020 and 2022); the AIPEA Medal (Tokyo, 2005), the Guillaume Budé Medal (Collège de France, Paris 2011), the Josep Lleal Medal (Expoquimia, Barcelona 2011), Honorary Member of the Spanish Clay Society (Spain, 2017), the AENTA Award 2019 (Agency for Nuclear Energy and Advanced Technologies of Cuba), the Marilyn & Sturges W. Bailey Distinguished Member Award, the Clay Minerals Society (USA, 2020) as well as various distinctions at the CSIC.

Part C. RELEVANT MERITS *(sorted by typology)*
C.1. Publications

Publications >300 papers; H index= 74, citations: *ca.* 20,000 (Google Scholar: Eduardo Ruiz-Hitzky - Google Académico. March, 2025 (searched as: "Ruiz-Hitzky E* OR Ruizhitzky E*"). Part of his research has been published in top journals of high impact factor (IF) like Nature (IF= 50,5), Chem. Soc. Rev. (IF=40,4), Progr. Polym. Sci. (IF= 26.4), Adv. Mater. (IF=27,4), Adv. Funct. Mater. (IF=19), Angew. Chemie (IF= 16.6), Adv. Healthcare Materials (IF=10), etc.

5 selected papers:

[1] Ruiz-Hitzky, E., Casal, B., Crown ether intercalations with phyllosilicates. **Nature**, 276, 596- 597 (1978).

[2] Ruiz-Hitzky, E., Rojo, J.M., Intracrystalline grafting on layer silicic acids. **Nature**, 287, 28- 30 (1980).

[3] Ruiz-Hitzky, E., Aranda, P., Polymer-salt intercalation complexes in layer silicates, **Adv. Mater**. 2, 545-547 (1990).

[4] Ruiz-Hitzky, E.; Aranda, P., Darder, D., Rytwo, G., "Hybrid materials based on clays for environmental and biomedical applications", **J. Mater. Chem**. 20, 9306-9321 (2010).

[5] Ruiz-Hitzky, M. Darder, B. Wicklein, C. Ruiz-García, R. Martín-Sampedro, G. del Real, P. Aranda, "Nanotechnology responses to COVID-19", **Adv. Healthc. Mater.** 9, 2000979 (26 p) (2020)

C.2. Congress, indicating the modality of their participation

Organization of International conferences (only after 2000)

Organizer, Co-organizer or General Chair of several international conferences such as the:

- 5th Materials Discussions of the Royal Society of Chemistry, UK (Madrid, 2002)
- Spanish-Japanese Symposium on Advanced Hybrid Materials based on Clays, Nagoya (Japan), 2005
- E-MRS Symposium on Synthesis, Characterization and Applications of Mesostructured Thin Layers, Estrasbourg 2005
- American-Japanese-Spanish Trilateral Meeting on Clay Minerals (Madrid & Seville, 2010)
- 4th International Conference on Multifunctional, Hybrid and Nanomaterials (Sitges, Spain, 2015).
- 2013, 2016, 2018 and 2021Annual Meetings of The American Chemical Society (PMSE-ACS)
- The Clay Minerals Society (USA), Clay Minerals in Healthcare Applications (virtual 2021).

Selection of representative invited presentations in diverse forums (only after 2000):

- International Symposium on Nanotechnology and Materials for the Environment, Yokohama (Japan) 2003 (opening lecture)
- 12th Ostwald Kolloquium (Honouring Prof. G. Lagaly), Kiel (Germany), 2004 (invited lecture)
- 13th International Clay Conference, Tokyo (Japan), 2005 (invited lecture)
- 3rd Mid-European Clay Conference, Opatija 2006 (opening lecture)
- XIV International Sol-Gel Conference, Montpellier 2007 (invited lecture)
- 3rd NanoAfrica conference, Pretoria 2009 (invited lecture)
- 14th International Clay Conference, Castellaneta Marina 2009 (June 2009) (invited lecture)
- Matériaux 2010, Nantes 2010 (invited introductory lecture)
- Graduate School of Creative Science and Engineering, University of Waseda, Tokyo 2011 (invited lecture)
- 5th Waseda GCOE International Symposium on "Practical Chemical Wisdom" Tokyo 2011 (plenary lecture)
- E-MRS 2011 Spring & Bilateral Meeting, held in Nice, 2011 (invited plenary lecture)
- 3rd International Workshop on Polymer Engineering and Processing, and 2nd Seminar of the Research Center for Highly Environmental and Recyclable Polymers, JAIST, Japan, 2011 (Invited Conference)
- E-MRS 2012 Spring Meeting, Strasbourg (France) 2012 (Invited Conference).
- 2nd Asian Clay Conference, Seoul (South Korea) 2012 (Plenary Inaugural Conference)
- SPIE Nanosystems in Engineering and Medicine, Incheon (South Korea) 2012 (Invited Conference).

- 245th ACS National Meeting, New Orleans (USA), 2013 (Invited Conference)
- PACCON2014 Conference, Khon Kaen (Thailand) 2014 (Invited Conference)
- GRAPCHINA 2015, (Qingdao, China) 2015 (invited Conference)
- PACCON2016, Bangkok 2016 (Keynote)
- Vidyasirimedhi Institute of Science and Technology (VISTEC)Symposium on Hybrids and biohybrids: past, present and future, Rayong (Thailand) 2016 (Invited Conference)
- 251st ACS National Meeting & Exposition "Symposium on Clay/Polymer Composites-3: Nanoclays and Other Natural Nanoparticles", San Diego, USA, 2016
- NANOTECH France 2016 "Joint Symposium on on Functional Hybrids and Clay Nanomaterials", Paris, France 2016
- Middle Europe Clay Conference MECC 2016, Kosice (Slovakia) (Plenary Lecture)
- International Symposium on Macroporous Materials 2016, Paris, France (Invited Conference)
- Colloque Carbones et Materiaux Carbonés: du Design aux Applications 2017, Paris, France (Invited Conference)
- XVI Internat. Clay Conference 2017, Granada, Spain (Plenary Lecture)
- 30th Fall Meeting of the Ceramic Society of Japan, Kobe 2017 (Invited Conference)
- 2017 Annual Meeting of the Clay Science Society of Japan, Toyama 2017 (Invited Conference)
- The 3rd Symposium of the Center for Nature-derived Materials (Excellent Core) & to The 4th International Symposium for Green-Innovation Polymers (GRIP2017), JAIST, Ishikawa 2017 (Plenary Lecture)
- 4th China International Composites Technology Conference (CCCM-4) Zhuhai (Guangdong, China) 2019 (keynote)
- FULLBRIGTH ASSOCIATION, Spain, On line 2020 (Invited Conference)
- IMAGINENANO 2020, Bilbao, Spain (keynote)
- NanoSpain Conference 2023, Tarragona, Spain (Invited Conference)

C.3. Research projects, indicating your personal contribution.

Selection of representative projects acting as Principal Investigator (after 2000):

2000-2003. "Materiales inorgánicos y derivados organo-inorgánicos para baterías de ion litio y pilas de combustible". CICYT, MAT2000-1585-C03-01.
2001-2004. "Materiales organofílicos derivados de arcillas". CICYT, MAT2000-0096-P4-02
2003-2004. "Materiales híbridos nanoestructurados para el desarrollo de sensores inteligentes: aplicación al análisis clínico". Comunidad de Madrid, 07N/0070/2002.
2003-2006. "Materiales organo-inorgánicos nanoestructurados para dispositivos electroquímicos y otras aplicaciones avanzadas". CICYT, MAT2003-06003-C02-01.
2004-2005. "Liposomas organo-inorgánicos: un nuevo concepto en la administración dirigida de sustancias bioactivas". Proyecto Intramural de Frontera (PIF) del CSIC ref. 200460F0321.
2006-2009. "Materiales híbridos y bio-hibridos nanoestructurados basados en sólidos porosos y polimeros funcionales para sensores y otras aplicaciones avanzadas" CICYT, MAT2006-03356.
2008-2010. "Nuevos sistemas bio-híbridos aplicables a vacunas y a biosensores virales". Proyecto Intramural de Frontera (PIF) del CSIC ref. PIF08-018-2.
2010-2012. "Nuevos materiales híbridos y bio-híbridos nanoestructurados basados en sólidos porosos de naturaleza silícica para aplicaciones avanzadas". CICYT, MAT2009-09960.
2013-2016. "Materiales porosos, híbridos y bio-híbridos nanoestructurados basados en silicatos (NANOSIL)". CICYT, MAT2012-31759.

C.4. Contracts, technological or transfer merits, Include patents and other industrial or intellectual property activities (contracts, licenses, agreements, etc.) in which you have collaborated. Indicate: a) the order of signature of authors; b) reference; c) title; d) priority countries; e) date; f) Entity and companies that exploit the patent or similar information, if any

1. **Selection of contracts with companies (acting E. Ruiz-Hitzky as Leader, Coordinator or Principal Investigator (only after 2000)**:

2023-2025. Non-disclossed title (confidential). Project OTiO2. European Central Bank and National Bank of Spain (Banco de España)

2018-2022. Non-disclossed title (confidential). Project OL2. European Central Bank and National Bank of Spain (Banco de España)

2014-2017. "Estudio de sepiolitas para aplicaciones reológicas" (34 months). Sepiolsa-CSIC Contract,

2010-2011 "Adsorptive materials for big scale separation processes" (43 months). Süd-Chemie, (now Clariant-Germany) – CSIC Contract.

2006-2007 "Nanocomposites with advanced mechanical properties" (12 months). Airbus S.L.-Universidad Carlos III de Madrid Contract, Leader: Prof. Juan Baselga Llidó, (leader at the ICMM-CSIC: Prof. Eduardo Ruiz-Hitzky),.

2004 "Assays to confine and immobilize dye molecules in porous materials" (6 months). Kansai Paint Ltd. (Japan) Co.-CSIC Contract.

2001-2004 "Estudio de mercaptanos en sepiolita y desarrollo de materiales desodorantes y autocontrolables" (39 months). TOLSA S.A.-CSIC Contract.

2. **Patents (after 2000, only patents transferred to Industry):**

1. E. Ruiz-Hitzky, P. Aranda, A. Gómez-Avilés, "Materiales composites micro- y nano- estructurados basados en hidróxidos dobles laminares de tipo hidrotalcita y silicatos de la familia de las arcillas"; Holder: CSIC. Spanish patent: P. 200803642 (22/12/2008). Published ES2341637B1 (23/05/2011). Extended to PCT: ES2009/070535 (27/11/2009). European phase: "Micro- and nano-structured composite materials based on laminar double hydroxides of hydrotalcite type and silicates of the clay family"; Holder: CSIC. European Patent EP09834157.1 (15/07/2011). Licensed to Süd-Chemie (now Clariant-Germany).

2. E. Ruiz-Hitzky, P. Aranda, Y. González-Alfaro, "Procedimiento de obtención de materiales con comportamiento superparamagnetico"; Holder: CSIC; Spanish patent: P. 201030333 (08/03/2010). Published: ES2365082B1 (08/08/2012). Extended to PCT: ES2011/070145 (07/03/2011) Extended to USA ("Method for obtaining materials with superparamagnetic properties", US 2013/0062286A1, 14/03/2013), Australia, Brazil, Mexico, Colombia & Chili. Licensed to NanoBiomatters Industries S.L.

3. C. Ruiz-García, P. Aranda, Francisco M. Fernandes, E. Ruiz-Hitzky, "Procedimiento de preparación de xerogeles de sepiolita, productos obtenidos y utilización"; Holder: CSIC; Spanish patent: P. 201330615 (29/04/2013). Extended to PCT: ES2014/070375 (29/04/2014). Licensed to NanoBiomatters Industries S.L.

4. B. Lebental, B. Ghaddab, V. Gaudefroy, E. Ruiz-Hitzky, P. Aranda, C. Ruiz-García, B. Hennings, " Dispositif d'acquisition, procédé de fabrication de celui-ci, procédé de mesure de force", Holders: IFSTTAR-CSIC; French patent: FR20140052842 (31/03/2014). Extended to PCT: FR2015/050805 (27/03/2015). Published WO 2015/150676A1 (08/10/2015). Extended to Brazil, Canada, China, South Korea, USA, India, Japan, Malaysia, Russia & South Africa. Licensed to Altaroad (France; https://www.altaroad.com/).

Signed in Madrid, March 31, 2025

RUIZ HITZKY EDUARDO - 01353088K

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Eduardo Ruiz-Hitzky