CURRICULUM VITAE ABREVIADO (CVA)

Part A. PERSONAL INFORMATION

First name	ISABEL		
Family name	DIAZ		
Gender (*)	FEMALE	Birth date (dd/mm/yyyy)	22/11/1972
ID number	51406138B		
e-mail	idiaz@csic.es	https://icp.csic.es/profile/diaz-carretero-isabel/	
Open Researcher and Contributor ID (ORCID) (*)		0000-0002-3602-9812	

A.1. Current position

Position	Investigadora Científica de OPIs		
Initial date	10/06/2020		
Institution	CSIC		
Department/Center	INSTITUTO DE CATALISIS Y PETROLEOQUIMICA		
Country	SPAIN	Teleph. number	672723072
Key words	Zeolites, mesoporous materials, TEM, Catalysis		

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

Period	Position/Institution/Country/Interruption cause
Curso 1996/97	Beca de Ayuda a la Investigación-UAM Spain
Curso 1997/98	Beca de Tercer Ciclo-UAM, Spain
01/1998-12/2001	Beca FPI (PN-97)-MEC, CSIC
01/2002-06/2002	Beca Postdoctoral CSIC
09/2002-12/2003	Beca Fulbright/MECD, USA
01/2004-06/2005	Contrato Ramón y Cajal, ICP-CSIC
07/2005-06/2020	Científica Titular, IPC-CSIC
Agosto 2007-Marzo 2008	Baja maternidad y enfermedad hija
Enero 2009-Agosto 2009	Baja embarazo de riesgo y maternidad
10/2010-06/2016	Full Professor, Addis Ababa University, Ethiopia
Junio 2016-	Profesora Asociada, Addis Ababa University, Ethiopia
Junio 2020-	Investigadora Científica de OPIs, ICP-CSIC
05/2021- 03/2022	Colaboradora del Gabinete MICIN, Spain
Mayo 2022 (unos días)	Vicedirectora Técnica, ICP-CSIC
Mayo 2022-	Vicepresidenta Adjunta de Internacionalización y Cooperación del CSIC

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
Licenciatura	Universidad Autónoma de Madrid	1996
Grado (Tesina)	Universidad Autónoma de Madrid	1997
Doctorado Posdoctorado	Universidad Autónoma de Madrid University Massachusetts and Minnesota	2001 2002-2003

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

I got my PhD in Chemistry at UAM, Spain, in 2001 with Extraordinary Doctorate Award, and research leaves at University of St. Andrews (UK), Lund University (Sweden), and Tohoku University (Japan). I was Fulbright Fellow at University of Massachusetts and University of Minnesota during 2002 and 2003. In 2007 I was awarded with the “Premio de la Real Sociedad Española de Química a Jóvenes Investigadores”. In July 2005 I became Tenured Scientist of the ICP-CSIC, with two maternity leave periods in 2007 and 2009. In 2005 I was in charge of the purchase, installation and functioning of a Transmission Electron Microscopy Facility at the ICP-CSIC. I have been Scientist Responsible of the TEM service since then, with 1-2 Technicians providing service to users. My research career had a sharp turning point in 2010 when I moved to Addis Ababa University, Ethiopia, as a Full Professor to pursue research on

application of natural zeolites for environmental applications. Since 2016, back at the ICP-CSIC in Madrid, Spain, I remain as Adjunct Professor at Chemistry Department, Addis Ababa University, Ethiopia. One of my main objectives in Ethiopia was to strengthen the presence of the CSIC in the international cooperation bodies. My activities in scientific cooperation for development have served the Spanish Cooperation Agency (AECID) in several external advisory activities such as *Grupo Estable de Cooperación* where we develop the *Marco Asociación País (MAP) Etiopía.* In June 2020 I promoted to Senior Researcher. More recently I have broadened my profile getting involved in Managing and Gender Equality activities including leader of the Gender Equality Unit at ICP-CSIC, coordinator of the network of the Gender Equality Unit CSIC Institutes at the UAM Campus (10 centers). I was also external advisor of the Women in Science Unity of the Ministry of Science and Innovation (MICIN). I am also very active in outreach activities and public media: https://elpais.com/espana/madrid/2021-08-12/una-mirona-de-atomos-que-hizo-desaparecer-dientes-negros-de-etiopia.html

I have 4 *sexenios* and 1 *sexenios de transferencia*. I have supervised 11 PhD Thesis defended and 1 more ongoing, most of them of Ethiopian students, including the first woman with a PhD in Chemistry from Haramaya University in Ethiopia. The average production is of 4 Q1 publications per PhD student.

The synthesis of micro and mesoporous materials for catalysis and its study by transmission electron microscopy are two constant topics throughout my scientific career. In 2005 we initiated a new multidisciplinary research topic dedicated to the use of controlled porosity materials not only as catalysts, but also as enzyme supports, which allowed us to expand the field of application to biocatalysis. Given the hybrid nature of the silica-enzyme materials, the precise location of the macromolecules was a new challenge for the use of advanced electron microscopy techniques that we overcame recently in our group. With the experience acquired in the synthesis, doping and study of porous systems, we joined efforts in synergy with the growing interest of MOFs initiated in the group. In this new topic we proposed to prepare MOFs in benign conditions with metal phases of marked catalytic interest compatible with enzyme encapsulation. My background as a microscopist accompanies me throughout my career, always with the ultimate goal of locating active centers in porous matrices. In recent years, we have mastered imaging methods for highly sensitive materials to the electron beam. In 2010, I initiated a new research dedicated to scientific cooperation with Ethiopia. The main objective of our work has been to investigate the situation of the potential of its natural zeolites that are not exploited despite their abundance. We have managed to bring a chemical technology developed under scientific cooperation programs to a commercial product (http://tagua.es/portfolio/hindrop/). This technology allows the removal of excess fluoride (a geogenic contaminant) from drinking water, using a natural zeolite. Through an Explora Project, we also developed a technology based on natural zeolites to remove arsenic, another naturally occurring contaminant whose impact is catastrophic in developing countries. In a partnership with an ONG, we have implemented the fluoride technology in Ethiopia (https://www.youtube.com/watch?v=C752LT4eJGA) through different private funding and AECID Innovación call. At the moment we are teaming up with doctors and agronomists to build an European project that allows studying the reuse of the zeolites in agriculture and the impact of the technology in the wellbeing of the population. Finally, we are currently working with Fundación Vicente Ferrer to implement the same technology in India. I am Council Member of the International Mesoporous Association and the International Natural Zeolites Association. Recently I have been appointed Scientific Board of the AXA Research Fund.

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

C.1. Publications *(see instructions)*

1. N. R. Habib, R. Sainz, A. M. Taddesse, **I. Diaz**, *Catalysis Today* 390-391 (2022) 316–325 “The Effect of Non-ionic Surfactants on the Sustainable Synthesis of Selected MOFs”
2. N. R. Habib, E. Asedegbega-Nieto, A. M. Taddesse, **I. Diaz** *Dalton Transactions* (2021) *50, 10340-10353* ”Non-noble MNP@MOF: Synthesis and Applications to Heterogenous Catalysis”
3. F. Khanmohammadi, M. A. Molina, R. M. Blanco, S. N. Azizi, C. Márquez-Álvarez, **I. Díaz**, *Microporous and Mesoporous Materials* 309 (2020) 110527- 110533 “SBA-15 prepared in different conditions to obtain optimum supports for laccase immobilization”.

4. L. Presa, J. L. Costafreda, D. A. Martín, **I. Diaz** *Molecules* 25 (2020) 1220; "Natural Mordenite from Spain as Pozzolana"*.*
5. **Isabel Díaz**, Rosa María Blanco, Manuel Sánchez-Sánchez, Carlos Márquez-Álvarez "Biocatalysis on porous materials" Chapter 7 in Zeolites and Metal-Organic Frameworks. From Lab to Industry. Editors: Vincent Blay, Luis F. Bobadilla, Alejandro Cabrera-García. Publisher: Atlantis Press - Amsterdam University Pres ISBN 9789462985568 March 2018.
6. K. Guesh, C. Alves, A. Mayoral, M. Díaz-García, **I. Diaz**, M. Sánchez-Sánchez, *Crystal Growth and Design 17 (2017) 1806−1813* "Sustainable preparation of MIL-100(Fe) and its photocatalytic degradation of methyl orange dye in water".
7. **I. Díaz**, *Catalysis Today 285 (2017) 29-38* "Environmental uses of Zeolites in Ethiopia"
8. K. Guesh, A. Mayoral, C. Márquez-Álvarez, Y. Chebude, **I. Díaz** *Microporous Mesoporous Materials 225 (2016) 88-97* "Enhanced photocatalytic activity of TiO_2 supported on zeolites: Degradation of real waste waters from the textile industry of Ethiopia".
9. A. Mayoral, R. Arenal, V. Gascón, C. Márquez-Álvarez, R. M. Blanco, **I. Díaz**, *ChemCatChem 5 (2013) 903-909*. "Designing functionalized mesoporous materials for enzyme immobilization: location of enzymes using advanced TEM techniques."
10. A. Mayoral, T. Carey, P. A. Anderson, A. Lubk, **I. Diaz**, *Angewandte Chemie Int. Ed. 50 (2011), 11230-11233* "Atomic resolution analysis of Ag ion-exchanged zeolite A"

C.2. Congress

1. Plenary Speaker at Symposium 50 years of zeolites in Mexico on October 28, 2022.
2. Plenary Speaker at 8th International Workshop of Layered & Nanostructured Materials 2022 10-13 July, 2022, Toledo, Spain
3. Oral presentation 20th International Zeolite Association Conference (IZC) 3-8 July, 2022, Valencia, Spain. I. Diaz, Z. Bezu, A. M. Taddesse, F. A. Moreno-Arangüena, R. Sainz, L. Gómez-Hortigüela, J. Pérez-Pariente "Exhausted fluoride filter based on natural zeolites for agricultural use"
4. Keynote at Africa-Europe Science and Innovation Summit 14-18 June, 2021.
5. Plenary Speaker at Talent Woman España. 28 de noviembre 2019, en Málaga.
6. Oral presentation 8th Czech-Italian-Spanish Conference (CIS), 2019, 11-14 June in Amantea, Italy. R. Mahugo, A. Mayoral, M. Sánchez-Sánchez, I. Díaz "Observations of Silver clusters in MOF MIL-100(Fe) incorporated using different methods"
7. Oral presentation 10th International Mesoporous Materials Conference (IMMC), September 10-13, 2018, Los Angeles (EEUU). Y. Awoke, Y. Chebude and I. Díaz "SBA-15 and PMO with convenient particle morphology and tunable pore size for catalysis"
8. Plenary Speaker at Workshop on Water Defluoridation Technologies in Ethiopia: Challenges and Opportunities 17-18 December 2015, Adama, Ethiopia.
9. Plenary Speaker at Materials for Tomorrow 3-4 November 2015, Chalmers University of Technology, Goteborg, Sweden.
10. Keynote at the 69th Japanese Microscopy Society May 2013, Osaka, Japan.

C.3. Research projects.

1. AECID INNOVACION (2020/ACDE/000373) RiFaWater: Defluorización y reutilización de residuos mediante recursos naturales en el Valle del Rift: (01/05/21 -28/02/23) 100.000 €. **PRINCIPAL INVESTIGATOR (PI): Dra. Isabel Díaz**

2. CSIC I-COOPA-2019 Sustainable development of Non-Noble Metal@Porous Solids for Environmental Applications (01/01/2020 - 31/12/2021) 24.000 €. **PI: Dra. Isabel Díaz**

3. Red CYTED 318RT0552 Promotion of industrial Development. Lacasas inmovilizadas para la degradación de compuestos aromáticos en aguas residuales (2018-2021) IP: Prof. Roberto Parra Saldívar (Méjico). *Team member in the task of enzyme immobilization.*

4. MINECO (MAT2016-77496-R) Desarrollo de materiales cataliticos nanoporosos avanzados (30/12/2016 - 29/12/2018) 242.000 € IP:Dr. Enrique Sastre de Andrés y Dr. Carlos Márquez-Álvarez. *Team member leader of one particluar objective devoted to enzyme immobilization.*

5. CSIC I-COOP+-2016 Catalytic conversion of vernolic acid into added value chemicals (01/01/2017 - 31/12/2018) 19.000 €. **PI: Dra. Isabel Díaz Carretero**
6. Proyecto Explora CTM2015-72910-EXP Integración de procesos fotocatalíticos y de adsorción para la eliminación de arsénico en aguas destinadas al consumo humano (01/05/2017 - 30/04/2019) IP: Dra. María José López Muñoz, Universidad Rey Juan Carlos.
7. CSIC I-COOP+-2014 Metal Organic Frameworks (MOFs) and Heterojunction Nanocomposites: Synthesis, Characterization and Photocatalytic Applications (01/01/15-1/12/16). 20.000 €. **PI: Dra. Isabel Díaz Carretero**
8. CSIC I-COOP-H2O Elimination of fluoride from drinking waters using natural zeolites (01/08/13-31/12/14) 35.000 €. PI: **Dra. Isabel Díaz Carretero**
9. AECID PCI-2011 Elimination of Fluoride from the Rift Valley using natural Zeolites. (13/12/11- 12/12/14) 100.100 €. **PI: Dra. Isabel Díaz Carretero**
10. CSIC I-COOP0014 The role of zeolites in the conversion of Ethiopian biomass (01/07/11-30/06/13) 20.000 €. **PI: Dra. Isabel Díaz Carretero**

C.4. Contracts, technological or transfer merits,
1. Asesoría Científica en la implementación de la tecnología licenciada en el ámbito de la cooperación al desarrollo PI: **Isabel Díaz Carretero**. Empresa financiadora: TAGUA S. L. (23/11/2019-22/05/2022). Financiación: 11.500 €.
2. Sistema innovador de eliminación del fluoruro del agua en Etiopia. Fase II. IP: **Isabel Díaz Carretero**. Empresa financiadora: FUNDACIÓN JUAN ENTRECANALES DE AZCÁRATE, SPAIN. (05/06/2020-05/12/2021). Financiación: 40.000 €.
3. Implementation of a technology based on natural zeolites to eliminate the fluoride from drinking waters in rural communities of the Rift Valley in Ethiopia IP: **Isabel Díaz Carretero**. Entidad financiadora: STIFTUNG FREIE GEMEINSCHAFTSBANK, SWISS. (01/07/2017-30/06/2019). Financiación: 81.600 €.
4. Implementación de un sistema innovador de eliminación de fluoruro de aguas potables del Valle del Rift Etíope haciendo uso de zeolitas, un recurso natural IP: **Isabel Díaz Carretero**. Empresa financiadora: FUNDACIÓN JUAN ENTRECANALES DE AZCÁRATE, SPAIN. (08/02/2018-7/02/2019). Financiación: 35.000 €.
5. Desarrollo y optimización de materiales basados en zeolitas naturales para la reducción de la concentración de fluoruro presente en el agua. IP: **Isabel Díaz Carretero** y Luis Gómez-Hortigüela. Entidad financiadora: TAGUA S. L. (01/04/2014-29/02/2016). Financiación: 139.086 €.
6. P201330262/ WO2014131926A1/US20160016823/ MX20150011040. Luis Gómez-Hortigüela, Joaquín Pérez Pariente, **Isabel Díaz Carretero**, Yonas Chebude "Material compuesto de estilbita nanohidroxiapatita, procedimiento de preparación y utilización para la eliminación de fluoruro del agua" 26 de Febrero de **2013**, CSIC-Addis Ababa University. **PATENTE LICENCIADA A TAGUA SL 16 de Abril de 2014 con extensión EEUU, México.**
7. P201231968 Manuel Sánchez Sánchez, **Isabel Díaz Carretero**, Negash Getachew, Yonas Chebude "Procedimiento de preparación de compuestos metalo-orgánicos". Diciembre **2012**, CSIC-Addis Ababa University.
8. P201031392 (ES1641.828) Rosa Maria Blanco Martín, **Isabel Díaz Carretero**, Oscar Fernández Lago, Carlos F. Torres Olivares "Biocatalizadores basados en composites mixtos de metacrilato-sílice". Septiembre **2010**, CSIC.
9. P201030515 (ES1641.754) **Isabel Díaz Carretero**, Rosa Maria Blanco Martín "Biocatalizadores híbridos". Abril **2010**, CSIC.