

Part A. Personal Information

DATE	31/05/2019
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Surname(s)	JIMÉNEZ MILLÁN	
Forename	JUAN	
Social Security, Passport, ID number	24207913E	
Sex	Male	
Age	53	
Researcher codes	WoS Researcher ID (*)	L-6066-2017
	SCOPUS Author ID(*)	
	Open Researcher and Contributor ID (ORCID)	0000-0003-3350-219X

(*) At least one of these is mandatory

A.1. Current position

Post/ Professional Category	Catedrático de Universidad / Full Professor	
UNESCO Code	250611	
Key Words	Phyllosilicates, low temperature, fluid mineral interaction	
Name of the University/Institution		
	Department/Centre	Centro de Estudios Avanzados en Ciencias de la Tierra
	Full Address	Edificio B-3. Campus Las Lagunillas
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	Phone Number	664448477
Start date	10/07/2009	

A.2. Education (title, institution, date)

Year	University	Degree	Title
1989	Universidad de Granada	First degree	Licenciado en Ciencias Geológicas
		Masters (if appropriate)	
1993	Universidad de Granada	PhD	Doctor en Ciencias Geológicas

A.3. Indicators of Quality in Scientific Production (See the instructions)

Research periods: 4 (last-2015)
Total cites last 5 years: 121 (SCI)
Average cites/year: 21 (SCI)
H Index: 9 (SCI)

Part B. Free Summary of CV (Max. of 3.500 characters, including spaces)

I started my doctoral training in the Department of Mineralogy and Petrology of the University of Granada studying metamorphic manganese lithologies. This stage allowed me to acquire a basic formation in the main methods of work in Mineralogy, Petrology and Geochemistry. I obtained a broad view of the crystalchemistry of the main silicates, oxides and carbonates groups. The small grain size of the minerals allowed me to start and consolidate my knowledge of high resolution mineral techniques. My doctoral stays at the United States Geological Survey (Reston, Virginia, USA) and the University of Perugia (Italy) were important to understand that the study of the origin of these lithologies needed the use of rare earth geochemistry. My

postdoctoral career was focused on the mineral transformations of phyllosilicates in low temperature sedimentary and metamorphic environments. My connection to the study of sedimentary environments is a consequence of my collaboration with the stratigraphy researchers of the Department of Geology of the University of Jaén. The application of my mineralogical and geochemical formation contributed to the clarification of the origin of Fe and Mn crusts and peloids of glauconite in different sequences of the Betic Cordillera. The study of phyllosilicates in low temperature metamorphic environments constituted the continuation of my doctoral training supervised by Professor Fernando Nieto, a pioneer in this field in Spain. The problem of the sequences studied made my research specialize in low temperature hydrothermal processes associated with igneous intrusions and shear zones, revealing the importance of retrohydrothermal processes in mineral paragenesis and the importance of the genesis of clay minerals in active faults and their effect on seismogenic processes. For the development of this line of research I have made three research stays at the University of Liverpool in collaboration with Professors Faulkner and Mariani in the field of mineral friction and microstructural characterization experiments using EBSD. This line of research has allowed me to have an overview of the mineral transformations of phyllosilicates in low-temperature sediment-fluid interaction environments, the main objective of the four research projects of the National R & D Plan I have been responsible. On the other hand, my research work has been linked to the socio-economic environment by carrying out activities in the field of ceramic and plastic industry, directing two doctoral theses in this field. Lastly, I have held different positions of responsibility in R & D Management within the framework of the Vice-Rectorate of Research at the University of Jaén.

Part C. Relevant accomplishments

C.1. Publications

Jimenez-Millan J, Abad I, Jimenez-Espinosa R, Yebra-Rodriguez A (2018). Assessment of solar panel waste glass in the manufacture of sepiolite based clay bricks. *Materials Letters* 218: 346–348

Sánchez-Roa C, Bauluz B, Nieto F, Abad I, Jiménez-Millán J, Faulkner DR (2018) Micro- and nano-scale study of deformed phyllosilicate-rich gouges from the Galera Fault Zone (Betic Cordillera, SE Spain). *American Mineralogist* 103 10.2138/am-2018-6316.

Sánchez-Roa C, Vidal O, Jiménez-Millán J, Nieto F, Faulkner DR (2018) Implications of sepiolite dehydration for earthquake nucleation in the Galera Fault Zone: a thermodynamic approach. *Applied Geochemistry* 89: 219-228.

Sánchez-Roa C, Faulkner DR, Boulton C, Jiménez-Millán J, Nieto F, (2017) How phyllosilicate mineral structure affects fault strength in Mg-rich fault systems. *Geophysical Research Letters* 44: 5457-5467.

Abad I, Jiménez-Millán J, Schleicher AM, van der Pluijm BA (2017) Mineral characterization, clay quantification and Ar-Ar dating of faulted schists in the Carboneras and Palomares Faults (Betic Cordillera, SE Spain). *European Journal of Mineralogy* 27: 17-34.

Sánchez-Roa C, Jiménez-Millán J, Abad I, Faulkner DR, Nieto F, García-Tortosa FJ (2016) Fibrous clay mineral authigenesis induced by fluid-rock interaction in the Galera fault zone (Betic Cordillera, SE Spain) and its influence on fault gouge frictional properties. *Applied Clay Science* 134: 275-288.

Jimenez-Espinosa R, Jimenez-Millan J, Garcia-Tortosa FJ (2016) Upper-Pleistocene terrace deposits in Mediterranean climate: geomorphological and source-rock control on mineral and geochemical signatures (Betic Cordillera, SE Spain). *Journal of Iberian Geology* 42: 187-200.

Hernandez-Puentes P, Jimenez-Espinosa R, Jimenez-Millan J (2015) Geochemical patterns of groundwater from the Palomares-Carboneras active fault area aquifers (SE Spain): determination of a network of sensitive sites indicators of seismic events. *Environmental Earth Sciences* 73: 6341-6354.

Jimenez-Millan J, Abad I, Hernandez-Puentes P, Jimenez-Espinosa R, (2015) Influence of phyllosilicates and fluid–rock interaction on the deformation style and mechanical behaviour of quartz-rich rocks in the Carboneras and Palomares fault areas (SE Spain). Clay Minerals 50: 619-638.

Yebra-Rodriguez A, Fernandez-Barranco C, La Rubia MD, Jimenez-Millan J, Rodriguez-Navarro A (2014) Thermooxidative degradation of injection-moulded sepiolite/polyamide 66 nanocomposites. Mineralogical Magazine 78: 1227-1239

C.2. Research Projects and Grants

Transformaciones minerales en zonas de falla: neoformación, nanodeformación y flujo de fluidos. MINECO. PGC2018-094573-B-I00

IPs: M^a Isabel Abad Martínez y Juan Jiménez Millán. 2019-2021.

Comportamiento reológico complejo de zonas de falla activas en secuencias carbonatadas multicapa: aplicaciones a la estimación de riesgo sísmico y la explotación de recursos hídricos. IP Rosario Jiménez Espinosa. UJA2015/07/10 2016/00035. Universidad de Jaén. 1/01/2016 - 31/12/2017. 30000 €

Modelización cinemática de las zonas de falla activas de Baza y Galera. Una aproximación multidisciplinar. IP: Francisco Juan García Tortosa. UJA2014/06/17. 1/04/2015 - 31/03/2017. 9687,5 €.

Caracterización mineral e hidrológica de zonas de fallas ricas en arcillas: Modelización experimental y termodinámica. IP: Juan Jiménez Millán. CGL2011-30153-C02-01. MINECO. 1/1/2012 - 31/12/2015.

84700 €

IP.

Asociaciones y fábricas de minerales de la arcilla desarrolladas en rocas de falla: implicaciones en la estructura de la permeabilidad, flujo de fluidos y comportamiento mecánico de zonas de falla. IP: Juan Jiménez Millán. CGL2007-66744-C02-02/BTE. MEC. 1/10/2007 - 30/09/2011.)

84700 €

IP.

Changes in phyllosilicate mineral structure and chemistry in prograde and retrograde metamorphic processes. IP: Juan Jiménez Millán. y Peter Arkai. HH2006-0030. MEC. Joint Action Spain-Hungary. 1/01/2007 - 31/12/2008

19330€

IP.

C.3. Contracts

Informes Mineralógicos y Petrográficos sobre muestras procedentes de canteras. IP: Francisco Juan García Tortosa. UJA3460. 10/2016-Actualidad.

C.4. Patents and other IPR

C.5 PhD supervised (last five years)

Caracterización mineral de zonas de falla ricas en arcillas fibrosas: modelización experimental y termodinámica. Diana Catalina Sánchez Roa. July 2017

Caracterización de nanocomposites poliamida 66/sepiolita y su comportamiento tras la degradación. Cristina Fernández Barranco. February 2015.

C.6 Research stays (last five years)

School of Environmental Sciences. University of Liverpool

“Mineralogy and rheology of active faults: significance in the seismic potential estimation”.

Period: 09/07/2016 – 18/08/2016.

School of Environmental Sciences. University of Liverpool

“Mineral and hydrological characterization of clay-rich fault zones: Experimental and thermodynamic modelling”.

Period: 05/04/2014 – 09/08/2014.

C.7 R&D activities organization (last five years)

Scientific session “P12 Genesis and behaviour of minerals involved in fault rocks: implication for natural hazard”. II European Mineralogical Conference (Rimini, 2016).

Coordination. J Jimenez-Millan, M Buatier y C Viti

International Meeting of Young Researchers on Heritage - PatrimoniUN10. Organized by Universidad de Jaén and UNIA. Baeza, November 2014. Coordination

“Curso de competencias transversales para doctorandos de la Universidad de Jaén”. Years 2013 y 2014. Coordination

Coordination of “Jornadas Doctorales de la Universidad de Jaén”. Years 2013 y 2014.

Workshop Ciencia y Tecnología de la Tierra y del Medio Ambiente: Espectroscopias Raman e IR en Ciencia y Tecnología de la Tierra y del Medio Ambiente. Coordination: Juan Jiménez Millán and María Isabel Abad Martínez. Universidad de Jaén-Sociedad Española de Mineralogía. 2015.

Workshop Ciencia y Tecnología de la Tierra y del Medio Ambiente: Difracción de rayos X: introducción al método de Rietveld. Coordination: Juan Jiménez Millán y África Yebra Rodríguez. Universidad de Jaén. 2017.

Scientific committee of Reuniones de la de la Sociedad Española de Mineralogía 2005-2018.

Scientific Coordinator of the Scanning electron microscope unit (Universidad de Jaén) since 1995.

C.8 Scientific Societies

SOCIEDAD ESPAÑOLA DE MINERALOGÍA. President 01/01/2015 - 31/12/2018

Vice-president 01/01/2013-31/12/2014