



CURRICULUM VITAE (CVA)

IMPORTANT – The Curriculum Vitae cannot exceed 4 pages. Instructions to fill this document are available in the website.

Part A. PERSONAL INFORMATION

CV date	January 2023
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First name	Blanca		
Family name	Bauluz Lázaro		
Gender (*)	Female	Birth date	
ID number			
e-mail	bauluz@unizar.es	https://sideral.unizar.es/sideral/CV/blanca-bauluz-lazaro	
Open Researcher and Contributor ID (ORCID) (*)		0000-0002-4970-6333	

(*) Mandatory

A.1. Current position

Position	Full Professor of Crystallography and Mineralogy		
Initial date	21/05/2019		
Institution	Universidad de Zaragoza		
Department/Center	Earth Sciences	Faculty of Sciences	
Country	Spain	Telephone	
Key words	Clays, geochemistry, industrial minerals, mineralogy, paleoclimate.		

A.2. Previous positions (research activity interruptions, art. 14.2.b)

Period	Position/Institution/Country/Interruption cause
19/12/2001	Tenured Professor (Titular de Universidad). Univ. Zaragoza
01/10/1995	Associate professor (Profesor Asociado TC). Univ. Zaragoza
01/10/1991	Pre-doctoral fellow (Becario Pre-doctoral). Univ. Zaragoza

A.3. Education

PhD, Licensed, Graduate	University/Country	Year
PhD in Geological Sciences	Universidad de Zaragoza (Spain)	1997
Degree in Geological Sciences	Universidad de Zaragoza (Spain)	1991

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

I am Full Professor and researcher at the Earth Sciences Department of the University of Zaragoza. I have gained recognition for four “six-year periods” of research activity (last one in 2018) and for six “five-year periods” of teaching activity (last one in 2021).

I have been responsible of four research projects granted by competitive tendering financed by the Spanish ministry of Science, two scientific dissemination projects financed by FECTY, and six contracts financed by private companies. I have also been the main researcher of the Government of Aragon consolidated group “*Mineral resources*” during the 2011-2014 period. Now I belong to the Excellence research group “*Aragosaurus: Geological resources and Paleoenvironments*”.

Throughout my career, I have published 66 JCR articles in collaboration with researchers from Spanish and foreign universities (thirty-three Q1 and twenty-five Q2). I have supervised three PhDs.

Currently, I am involved in the following research lines:

- *Mineral transformations in low-temperature environments.*

I am interested in the crystallization of phyllosilicates and associated phases in sedimentary environments, diagenesis, very low-grade metamorphism and hydrothermal processes. Currently, with my research group I am focused on the investigation of clay-rich paleosoils with Spanish researchers (Drs. Aurell and Badenas, UZ) and from other countries (Drs. Do Campo, del Papa and Brlek). Our studies clearly show that clays are a powerful tool to infer paleoclimate conditions in Mesozoic materials as we show in different studies on the Jurassic-Cretaceous boundary in NE Iberian Peninsula, Paleocene-Eocene boundary in N Argentina and Paleocene in Dinaric Alps (eg. Do Campo et al., 2018, 2021, Laita, 2020, 2021a, 2021b, Brlek et al., 2021, Yuste et al., 2020).

- *Crystal chemistry of clays.* I am interested on the structure of the clays and its relation with their crystallization in different geological environments. For these studies, we have used high-resolution TEM in order to define the presence of interlayering and intergrowths among different clays (Bauluz et al., 2021, Nieto et al., 2021).

- *Industrial clays and ceramics.* I am skilled in the characterization of industrial clays and ceramic products. Collaboration with mining companies makes me to specialize in these subjects to solve specific problems during the manufacturing process, since the crystal chemical characteristics of the clays control the plasticity of the raw materials and the manufacturing processes. We have also investigated the ceramic behavior of aluminium-rich clays in order to evaluate their refractory properties. We have concluded that both the firing temperature and the clay content play an important role in the refractory potential of the mixtures, since samples mixed with illite- and kaolinite-rich clay present similar properties at lower temperatures to those of the fired commercial bauxites (Laita & Bauluz, 2018, Laita et al., 2019, 2021).

- *Biominerals: Crystallization and composition.*

The collaboration with paleontologists of the University of Zaragoza (Prof. Canudo group) resulted in an interesting research line. The aim of this line is to deepen in the understanding of biomineralization processes and subsequent changes from the analysis of vertebrate fossils remains. In order to develop this line, we have applied in addition to scanning and transmission electron microscopy, backscattered electron diffraction (EBSD) to investigate the crystallography of biominerals and their crystallization. The crystallization patterns in biominerals are specific of species and subspecies and give information about their paleobiology. This is an excellent tool for taxonomy and paleobiology (Moreno-Azanza, 2016, 2017, Moya et al., 2017, 2019a,b).

For our research, we use different techniques such as XRD, FESEM, HRTEM, electron microprobe, spectroscopies IR and Raman, XRF and ICPMs, and isotopic geochemistry.

I have been the main researcher of two scientific dissemination projects financed by FECTY (FCT-15-9866, FCT-16-10906) entitled "Crystallization contest in Aragón". In these projects, Secondary education students elaborate crystallization projects supported by the organizers of the activity. Exhibitions of these projects were organized in Zaragoza (Natural Sciences Museum), Huesca (Planetarium) and in Teruel (Chamber of Commerce) that were open to the general public.

Additionally, I organize talks and activities with Primary and Secondary education students related with the identification of minerals and their uses.

Part C. RELEVANT MERITS

C.1. Publications (see instructions)

Do Campo, M., Bauluz, B., Papa del, C., Payrola, P., Yuste, A., Mayayo, M.J. (2021). Terrestrial record of cyclic early Eocene warm-humid events in clay mineral assemblages from the Salta basin, Northwestern Argentina. *Sedimentary Geology*, 425 (Q1, 2020, *Geology*).

Bauluz, B., Mayayo, M.J., Laita, E., Yuste, A. (2021). Micro- and Nanotexture and Genesis of Ball Clays in the Lower Cretaceous (SE Iberian Range, NE Spain). *Minerals* (in press). Q2 (2020 *Mining & Mineral processing*), Q2 (2020 *Mineralogy*).

Brlek, M., Gaynor, S.P., Mongelli, G., Schaltegger, U. (2021): Karst bauxite formation during Miocene Climatic Optimum (central Dalmatia, Croatia): mineralogical, compositional and geochronological Perspectives. *International Journal of Earth Sciences*, 110, 2899–2922. Number of authors: 16. Bauluz posición nº 4. (Q3, 2020, *Geosciences*, *Multidisciplinary*).

- Laita, E., Bauluz, B., Mayayo, M.J., Yuste, A. (2021a). Mineral and textural transformations in mixtures of Al-rich Al-K-rich clays with firing: Refractory potential of the fired products. *Ceramics International*, 47, ISSN 0272-8842. 14527–14539. (Q1, 2020, Materials Science, Ceramics).
- Laita, E., Bauluz, B., Aurell, M., Bádenas, B., Yuste, A. (2021b). Weathering events recorded in uppermost Hauterivian–lower Barremian clay-dominated continental successions from the NW Iberian Range: climatic vs. tectonic controls. *J of Iberian Geology*. DOI: 10.1007/s41513-021-00181-0. Q2 (2020 *Geology*).
- Nieto, F., Abad, I., Bauluz, B., Reolid, M. (2021): Textural and genetic relationships between glauconite and celadonite at the nanoscale: two different structural-compositional fields. *Eur. J. Mineral.*, 33, 503–517. (Q2, Mineralogy).
- Do Campo, M., Bauluz, B., Nieto, F. (2021). Widespread hydrothermal alteration overprinting epizonal Ordovician rocks in the Puna region of Argentina (Salta and Jujuy provinces). *Applied Clay Science*, in press.
- Laita, E., Bauluz, B., Aurell, M., Bádenas, B., Canudo, J., Yuste, A. (2020). A change from warm/humid to cold/dry climate conditions recorded in lower Barremian clay-dominated continental successions from the SE Iberian Chain (NE Spain). *Sedimentary Geology*, 403, pp.105673 1-17. ISSN 0037-0738. (Q1, 2020, *Geology*).
- Yuste, A., Camacho, I., Bauluz, B., Mayayo, M.J., Laita, E. (2020). Palaeoweathering events recorded on siliciclastic continental deposits (Albian, Lower Cretaceous) in NE Spain. *Applied Clay Science*, 190, pp.105598 1-16. ISSN 0169-1317. Q1 (2019, Mineralogy).
- Laita, E., Bauluz, B., Yuste, A. (2019). High-Temperature Mineral Phases Generated in Natural Clinkers by Spontaneous Combustion of Coal. *Minerals*, 9 (4), 213. (Q2 *Mining & Mineral processing*, Q2 (Mineralogy)).
- Moya, R., Cuenca, G., Bauluz, B. (2019a). Methodology for the reconstruction of micromammals from fossils. Two study cases: the skulls of *Beremendia fissidens* and *Dolinasorex glyphodon*. *Plos One*. <https://doi.org/10.1371/journal.pone.0213174>. (Q1_Multidisciplinary Sciences).
- Moya, R., Bauluz, B., Cuenca, G. (2019b). Structure and composition of the incisor enamel of extant and fossil mammals with tooth pigmentation. *Lethaia*. DOI 10.1111/let.12318. Q1 (*Paleontology*).
- Do Campo, M., Bauluz, B., del Papa, C., White, T., Yuste, A., Mayayo, M.J. (2018). Evidence of cyclic climatic changes recorded in clay mineral assemblages from a continental Paleocene-Eocene sequence, northwestern Argentina. *Sedimentary Geology*, 368 (2018) 44–57. Q1 (*Geology*).
- Laita, E., Bauluz, B. (2018). Mineral and textural transformations in aluminium-rich clays during ceramic firing. *Applied Clay Science*, 152, 284-289. Q1 (*Material Science, Multidisciplinary*), Q1 (*Mineralogy*), Q2 (*Chemistry, Physical*).
- Moya, R., Cuenca-Bescos, G., Bauluz, B., Rofes, J. (2017). Structure and composition of tooth enamel in quaternary soricines. *Quaternary International*, <http://dx.doi.org/10.1016/j.quaint.2017.04.039>. Q1 (*Geosciences, Multidisciplinary*).
- Yuste, A., Bauluz, B., Mayayo M.J. (2017). Origin and geochemical evolution from ferrallitized clays to karst bauxite: An example from the Lower Cretaceous of NE Spain. *Ore Geology Reviews*, 84, 67-79. Q1 (*Geology*), Q1 (*Mineralogy*), Q1 (*Mining & Mineral processing*).
- Moreno-Azanza, M., Bauluz, B., Canudo, J.I., Mateus, O., (2017). The conservative structure of the ornithopod eggshell: electron backscatter diffraction characterization of *Geugoolithus turolensis* from the Early Cretaceous of Spain. *Journal of Iberian Geology*, 43-2, 235-253, Q2 (*Geology*).
- Moreno-Azanza, M., Bauluz, B., Canudo, J.I., Gasca, J.M., Torcida Fernández-Baldor, F. (2016). Combined Use of Electron and Light Microscopy Techniques Reveals False Secondary Shell Units in *Megaloolithidae* Eggshells. *Plos One*. <http://dx.doi.org/10.1371/journal.pone.0153026>. (Q1, *Multidisciplinary Sciences*).

C.2. Congress and conferences

Bauluz, B. (2021): “Analysis of clay-rich paleosoils: from the macro- to the nanoscale”. VII Argentinian meeting of Sedimentology – VIII Sedimentological Latin American, Paraná (Argentina). Invited Conference, September 2021.

Bauluz, B., Nieto, F. (2017). “Ammonium-rich illites in very low-grade metapelites: Microtexture and composition”. XVI International Clay Conference, Granada, Spain. Oral presentation, July 2017.

Bauluz, B., Mayayo, M.J., Yuste, A. (2016). "Microtexture and genesis of kaolin minerals in sedimentary environments of the Lower Cretaceous in NE Spain". 2nd European Mineralogical Conference, Rimini, Italy. July 2016. Invited Keynote.

Bauluz, B. (2020). "Electron Microscopy on Clay Science". Technical University of Darmstadt. Invited Conference, January 2020.

Bauluz, B. (2021). "Written on the rocks". Natural Sciences Museum, Invited conference, January 2021.

C.3. Research projects

Mineral and Chemistry characterization clay rich paleosols: Paleoclimatic and Industrial implications. Ministry of Science and Innovation 2019-2021 (3 years). RTI2018-093419-B-I00. Participant entities: Universidad de Zaragoza. Funding: 84700 Euros. Research group + Work team: 3 + 3 Main researcher: B. Bauluz.

Excellence Group E18_17R-Aragosaurus: Geological Resources and Paleoenvironments. Funding institution: Gobierno de Aragón. Term: 2018-2019 (2 years). Number of participant researchers: 18. Main researcher: J. I. Canudo_ Universidad de Zaragoza. Funding: 47771€.

Phyllosilicate analysis in the study of continental sedimentary facies: Geological, Paleoclimatic and Industrial implications. Funding: Ministry of Economy and competitiveness. CGL2013-46169-C2-1-P. Participant entities: Universidad de Zaragoza (coordinator) - Universidad de Sevilla. Term: 2014-2017 (3 years). Main researcher: B. Bauluz. Number of UZ participant researchers: 6. Funding: 55650€.

Excellence Group E18_17R-Aragosaurus: Geological Resources and Paleoenvironments. Funding institution: Gobierno de Aragón. Term: 2020-2022. Number of participant researchers: 20. Main researcher: J. I. Canudo_ Universidad de Zaragoza. Funding: 26553€.

Deposits of kaolinitic clays (Weald facies) in the Maestrazgo Basin: Mineralogy, physico-chemistry, microstructure and formation of phyllosilicates. Funding: Ministry of Science and Innovation. CGL2009-07574. Participant entities: Universidad de Zaragoza. Term: 2009-2012 (3 years). Main researcher: B. Bauluz. Number of participant researchers: 4. Funding: 45.000€

Consolidated Project 45-Mineral Resources. Funding institution: Gobierno de Aragón. Term: 2013-2014 (2 years). Number of participant researchers: 10. Main researcher: B. Bauluz. Universidad de Zaragoza. Funding: 4863€

Consolidated Project 45-Mineral Resources. Funding institution: Gobierno de Aragón. Term: 2011-2012 (2 years). Number of participant researchers: 8. Main researcher: B. Bauluz. Universidad de Zaragoza. Funding: 11428€.

C.4. Contracts, technological or transfer merits

Field Emission microprobe with four WDS and spectrometer to determine oxidation states in transition metals. Funding Ministry of Science and Innovation. EQC2021-007154-P. Participant entities: Universidad de Zaragoza. Main Researcher: B. Bauluz. Number of UZ participant researchers: 6. Funding: 1499228.52€

Laser diffraction system. Funding Government of Aragon. Main researcher: B. Bauluz. Universidad de Zaragoza. Funding: 41322.31€. Term: 2021.

XTALEGGS -Applying Microtextural Analysis and Geochemistry to Explore Phylogeny and Functional Adaptation in Archosaurian Eggshells. Funding: Nova ID FCT - Associação para a Inovação e Desenvolvimento Da Fct. Participant entities: Universidad de Zaragoza (coordinator) and NoV ID FCT (Lisboa). Term: October 2019- August 2021. Main Researcher: B. Bauluz. Number of UZ participant researchers: 2. Funding: 9800€.

Crystal size and textural analysis of fibrous clays. Funding: Sociedad Anónima de Minería y tecnología en arcillas (MYTA). Participant entities: Universidad de Zaragoza. Term: December 2019- December 2021. Main Researcher: B. Bauluz. Number of UZ participant researchers: 3. Funding: 6000€.

Mineral analysis and its control in the properties of industrial clays. Research and development contract. Funding company: Aragón Minero S.A. Participant entities: Universidad de Zaragoza. Term: 01/01/2014-31/12/2014. Main researcher: B. Bauluz. Number of participant researchers: 3. Funding: 6000€.