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Sofía Teresa Blanco Ariño is Graduate in Chemical Science (1992) and PhD in Science (1998). Since 2009 she is Physical Chemistry Reader (Profesora Titular) at the University of Zaragoza. She belongs to the Energy and CO₂ Research Group recognized as consolidated by the Regional Government. She has 4 periods of six years of research evaluated positively (sexenios) and 5 periods of five years of teaching evaluated positively (quinquenios). She is Vice Dean for Academic Affairs of the Faculty of Science and Coordinator of the PhD Program in Physical Chemistry. She is also member of The Quality Assurance Commission for the Degree in Chemistry of UZ.

Dr. Blanco has published 42 JCR articles (33 of them in Q1 journals) and has 37 conference contributions. She has participated in 27 projects funded from competitive calls, 9 of them from National Government, and in 6 research contracts. She has been main researcher of 4 projects and 1 contract obtaining more than 350,000 €. During the last 10 years, she has trained young researchers by supervising 16 final graduate projects, 6 final postgraduate projects and 2 PhD theses, in addition to being the head of 6 researchers hired in charge of research projects.

RELEVANT MERITS

Publications

1. Almazán, H; Fernández, J, Blanco ST. 2025. **Viability of the cocapture of CO₂ and impurities from oxy-fuel combustion and other processes in carbon capture and storage technology.** Energy and Fuels. DOI: 10.1021/acs.energyfuels.4c04818 Impact Factor: 5.2. Journal position: 36/171 (Q1)
2. Melendo, A; Berbés, R; Blanco, ST; Fernández, J. 2023. **Effect of the impurities O₂ or NO present in non-purified flue gas from oxy-fuel combustion processes for carbon capture and storage technology.** Process safety and environmental protection, 172, pp. 1120 - 1131. ISSN 0957-5820 DOI: 10.1016/j.psep.2023.02.086. Impact Factor: 6.9. Journal position: 22/171 (Q1)
3. Gimeno, B; Velasco, I; Fernandez, J; Blanco, ST. 2021. **Evaluation of the simultaneous presence of SO₂ and CO as impurities in the carbon capture and storage technology. CO₂/SO₂/CO cocapture.** Process safety and environmental protection, 153: 452-463. Impact Factor: 6.158. Journal position: 22/143 (Q1)
4. Gimeno, B.; Martínez-Casasnovas, S.; Velasco, I.; Blanco, ST; Fernández, J. 2019. **Thermodynamic properties of CO₂ + SO₂ + CH₄ mixtures over wide ranges of temperature and pressure. Evaluation of CO₂/SO₂ co-capture in presence of CH₄ for CCS.** Fuel, 255:115800-9. Impact Factor: 5.578. Journal position: 18/143 (Q1)
5. Gimeno, B.; Artal, M.; Velasco, I.; Fernández, J.; Blanco, ST. 2018. **Influence of SO₂ on CO₂ Transport by Pipeline for Carbon Capture and Storage Technology: Evaluation of CO₂/SO₂ Cocapture.** Energy Fuels, 32, 8641–8657. Impact Factor: 3.024. Journal position: 36/137 (Q2)
6. Gimeno, B.; Artal, M.; Velasco, I.; Blanco, ST.; Fernández, J. 2017. **Influence of SO₂ on CO₂ Storage for CCS Technology: Evaluation of CO₂/SO₂ co-capture.** Applied Energy. 206, pp. 172-180. Impact Factor: 7.182. Journal position: 4/135 (Q1)
7. Rivas, C.; Gimeno, B.; Artal, M.; Blanco, ST.; Fernández, J.; Velasco, I. 2016. **High-pressure speed of sound in pure CO₂ and in CO₂ with SO₂ as an impurity using methanol as a doping agent.** INTERNATIONAL JOURNAL OF GREENHOUSE GAS CONTROL. 54 -, pp. 737 - 751. ISSN 1750-5836. DOI: 10.1016/j.ijggc.2016.09.014. Impact Factor: 3.741. Journal position: 13/49 (Q2)
8. Rivas, C.; Gimeno, B.; Bravo, R.; Artal, M.; Fernández, J.; Blanco, ST; Velasco, M. I. 2016. **Thermodynamic properties of a CO₂ - Rich mixture (CO₂ + CH₃OH) in conditions of**

interest for carbon dioxide capture and storage technology and other applications. JOURNAL OF CHEMICAL THERMODYNAMICS. 98 -, pp. 272 - 281. ISSN 0021-9614 DOI: 10.1016/j.jct.2016.03. Impact Factor: 2.726. Journal position: 13/58 (Q1)

Congress

1. Almazán, H; Blanco ST; Fernández, J. **Viabilidad de la cocaptura CO₂/NO procedente de procesos de combustión en la tecnología CCS.** XI Jornada de Jóvenes Investigadores (Química y Física) de Aragón. 21/11/2024. Poster.
2. Blanco, ST; Melendo, A; Berbés, R; Fernández, J. **Evaluation of the Co-Capture CO₂/O₂ or NO as Impurities from Oxy-fuel Combustion Processes for CCS.** The 16th International Conference on Heat Transfer, Fluid Mechanics and Thermodynamics (HEFAT) and Editorial Board of Applied Thermal Engineering (ATE). VIRTUAL, Holanda. 10/08/2022. Oral contribution.
3. Martínez-Casasnovas, S.; Gimeno, B.; Fernández, J.; Blanco, ST. **Evaluation of CO₂ / SO₂ co-capture in the presence of CO for CCS technology (Carbon Capture and Storage).** I Congreso Nacional de TFG y TFM de temática ambiental. Burgos, 7th-9th November, 2019. Oral contribution.
4. Fernández, J; Blanco, S.T.; Díez, L.I.; Escudero, A.I.; **OXY-STEAM COMBUSTION: the effect of increasing the steam concentration in oxy-coal-fired reactors.** 2nd International workshop on oxyfuel combustion. Bochum, 14-02-2018. Poster.
5. Blanco, S.T.; Gimeno, B.; García, V.M.; Martínez, S.; Velasco, I.; Fernández, J. **Influence of SO₂ + CO or + CH₄ on CO₂ storage for CCS technology: Evaluation of CO₂/SO₂ co-capture.** 10th World Congress of Chemical Engineering. Barcelona, 1st-5th October, 2017. Poster
6. Rivas, C.; Gimeno, B.; Bravo, R.; Artal, M.; Fernández, J.; Blanco, S.T.; Velasco, M. I. **Thermodynamic properties of a CO₂-rich mixture CO₂+CH₃OH in conditions of interest for CCS technology and other applications.** 2nd International Forum on Recent Developments of CCS Implementations. Athens, 16th-17th December, 2015. Oral contribution.

Research projects

1. Project title: **PID2024- 157615OB-I00: Mitigación de contaminantes y descarbonización en motores alimentados con gas natural enriquecido con H₂ mediante la integración de captura de CO₂, EGR e inyección de H₂O (MIDENG-H₂).** Participación: Investigadora. Proyectos de Generación de Conocimiento. Ministerio de Ciencia e Innovación, Gobierno de España. Duración: 2025-2028. IP: Francisco Moreno y Eva Llera.
2. Project title: **PID2021-125137OB-I00: Descarbonización de sectores intensivos en energía. Captura de CO₂ en motores de gas para la circularización de combustibles sostenibles y almacenamiento viable de emisiones.** Participation: Main Researcher 2. Institution: Escuela de Ingeniería y Arquitectura - University of Zaragoza. Funding: AGENCIA ESTATAL DE INVESTIGACIÓN-UNION EUROPEA. 181.500 €. Date: 01/09/2022 - 31/08/2025.
- 3.-Project title: **RTI2018-094488-B-C22 Transition to oxy-fuel combustion of biomass with capture and storage of pollutants. Viability of the use of torrefied biomass and of the co-capture of CO₂ with pollutants.** Participation: Main Researcher 2. Institution: Faculty of Science - University of Zaragoza. Funding: FONDOS FEDER - AGENCIA ESTATAL DE INVESTIGACIÓN, 191,180 €. Date: 01/01/2019 - 30/09/2022.
- 4.-Project title: **ENE2013-44336-R Impact of the quality of anthropogenic CO₂ on CCS technology. Assessment of CO₂/SO₂ co-capture.** Participation: Researcher. Institution: Faculty of Science - University of Zaragoza. Main researcher: María Inmaculada Velasco Albillos. Funding: MINECO (MINISTERIO DE ECONOMIA Y COMPETITIVIDAD), 146,410 €. Date: 01/01/2014 - 31/12/2017.
- 5.-Project title: **CTQ2011-24875 Research advances for greenhouse gases emissions reduction: Carbon dioxide and refrigerants with high global warming power.** Participation:

Researcher. Institution: Faculty of Science - University of Zaragoza. Main researcher: María Inmaculada Velasco Albillos. Funding: MINISTERIO DE CIENCIA E INNOVACION, 14,520 €. Date: 01/01/2012 - 31/12/2012.

6.- Project title: CTQ2008-02037 Determination of high-pressure speeds of sound in petroleum fluids and alternative compounds to CFCs. Participation: Researcher. Institution: Faculty of Science - University of Zaragoza. Main researcher: María Inmaculada Velasco Albillos. Funding: MINISTERIO DE CIENCIA E INNOVACION, 145,200 €. Date: 01/01/2009 - 31/12/2011.