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## EDUCATION

- 2016-2020 **PhD in Geochemistry** (Dr. rer. nat.) Summa Cum Laude, at the earth and environmental sciences department of the Ludwig Maximilians University (LMU), Munich, Germany.  
Supervisor: Prof. Dr. Donald Bruce Dingwell.  
Thesis: High temperature volcanic gas uptake by rhyolite.  
Funding: CONACYT (National council for science and technology)-DAAD (German academic exchange service)
- 2013- 2015 **Master in Geochmeistry**, at the volcanology department of the National Autonomous University of México (UNAM), México City, México.  
Thesis: Development of a methodology for sampling and analysis of sulfur species in Chichón volcano's crater lake trough Liquid Chromatography for volcanic monitoring.  
Supervisor: Prof. Dr. María Aurora Armienta Hernández  
Funding: CONACYT (Mexican national council for science and technology)
- 2008-2012 **Bachelor in Chemical Engineering**, Technological Institute of Tuxtla Gutiérrez (ITTG), Chiapas, México.

## PUBLICATIONS

- 2020 Maters, E.C., Cimarelli, C., **Casas, A.S.**, Dingwell, D.B., Murray, B.J. 2020. Volcanic ash ice-nucleating activity can be enhanced or depressed by ash-gas interaction in the eruption plume, *Earth and Planetary Science Letters*, 551, 116587. <https://doi.org/10.1016/j.epsl.2020.116587>.
- 2019 **Casas, A.S.**, H Adrian Hornby, Poetsch, C., Cimarelli, C., Dingwell, D.B. In preparation A multidisciplinary protocol for quantitative characterization of soluble salts on ash particles. For submission to *Chemical Geology*.  
**Casas, A.S.**, Wadsworth, F.B., Vasseur, J., Ayriss, P.M., Delmelle, P., Hess, K.-U., Kaliwoda, M., Cimarelli, C., and Dingwell, D.B. Submitted. Rapid iron oxidation during high-temperature reactions between glassy volcanic ash and SO<sub>2</sub> gas. Under consideration at *Chemical Geology*.  
**Casas, A.S.**, Wadsworth, F.B., Ayriss, P.M., Delmelle, P., Vasseur, J., Cimarelli, C., Dingwell, D.B. 2019. SO<sub>2</sub> scrubbing during percolation through rhyolitic volcanic domes, *Geochimica et Cosmochimica Acta*, 257:150-162. <https://doi.org/10.1016/j.gca.2019.04.013>.  
Tomašek, I. Damby, D.E., Horwell, C.J., Ayriss, P.M., Delmelle, P., Ottley, C.J., Cubillas, P., **Casas, A.S.**, Bisig, C., Petri-Fink, A., Dingwell, D.B., Clift, M.J., Drasler, B., Rothen-Rutishauser, B. 2019. Assessment of the potential for in-plume sulphur dioxide gas-ash interactions to influence the respiratory toxicity of volcanic ash. *Environmental Res.* Volume 179, Part A 108798. <https://doi.org/10.1016/j.envres.2019.108798>.
- 2018 Wadsworth, F., Unwin, H., Vasseur, J., Kennedy, B., Holzmueller, J., Scheu, B., Witcher, T., Adolf, J., Cáceres, F., **Casas, A.**, Cigala, et al. 2018. "Trashcano: Developing a quantitative teaching tool to understand ballistics accelerated by explosive volcanic eruptions", *Volcanica*, 1(2), pp. 107 - 126. <https://doi.org/10.30909/vol.01.02.107126>.
- 2017 Mueller, S. B., Ayriss, P. M., Wadsworth, F. B., Kueppers, U., **Casas, A. S.**, Delmelle, P., Taddeucci, J., Jacob, M., & Dingwell, D. B. 2017. Ash aggregation enhanced by deposition and redistribution of salt on the surface of volcanic ash in eruption plumes. *Scientific reports*, 7, 45762. <https://doi.org/10.1038/srep45762>.
- 2016 **Casas, A.S.**, Armienta, M.A., Ramos, S. 2016. Sulfur speciation with high performance liquid chromatography as a tool for El Chichón volcano, crater lake monitoring. *Journal of South American Earth Sciences*, 72, 241-249. <https://doi.org/10.1016/j.jsames.2016.09.001>.

## COURSES AND CONFERENCES

- 2020 **European geophysics union (EGU) General Assembly**, 4-8<sup>th</sup> May. Poster: The role of calcium diffusion on high temperature SO<sub>2</sub> uptake by volcanic glasses. Vienna, Austria.
- 2019 **American Geophysical Union Fall Meeting**, 9-13<sup>th</sup> December. Oral presentation: SO<sub>2</sub> scavenging potential of fractured permeable rhyolitic domes. San Francisco, USA.  
**11th Silicate Melt Workshop**, 30<sup>th</sup> Sept.-1<sup>st</sup> October. Oral presentation: SO<sub>2</sub> uptake by rhyolitic glasses. La petite pierre, France.  
**Volcanic Ash in the Earth System: Generation, Dispersal, Consequences**, 9-10<sup>th</sup> May. Oral Presentation: High temperature SO<sub>2</sub>-uptake by rhyolitic glasses. Munich, Germany.  
**Melts, Glasses, Magmas (MGM) Short course**, 3-7<sup>th</sup> June. Teaching. LMU Munich, Germany.
- 2018 **Short Course "High Temperature Gas-Solid Reactions in Earth and Planetary Processes"**, 11-12<sup>th</sup> August. Attendance. Boston, USA.  
**EGU General Assembly**, 8-13<sup>th</sup> April. Poster: SO<sub>2</sub> scavenging potential of fractured permeable rhyolitic domes. Vienna, Austria.  
**3<sup>rd</sup> Workshop on Physics of volcanoes**, 1-3<sup>rd</sup> March. Poster presentation: Insights on high temperature SO<sub>2</sub> scavenging. Kiel, Germany.  
**MGM Short course**, 2-6<sup>th</sup> June. Teaching. LMU. Munich, Germany.
- 2017 **EGU General Assembly**, 24-29<sup>th</sup> April. Poster: "In-plume gas scavenging: An Insight on gas adsorption, ash-surface chemistry and the role of water". Vienna, Austria.  
**3<sup>rd</sup> Workshop on Physics of volcanoes**, 8-9<sup>th</sup> March. Oral presentation: "In-plume gas scavenging: Insights on gas adsorption". Ludwig-Maximilians-Universität. Munich, Germany.  
**MGM Short course**, 10-14<sup>th</sup> Juli. Teaching. LMU, Munich, Germany.  
**Etna International Training School of Geochemistry**,. 23-26<sup>th</sup> July 2017: Remote and direct gas sampling at the volcano and soil degassing measurements. Catania, Italy.  
**IAVCEI 13<sup>th</sup> Gas Workshop**. 24<sup>th</sup> September -3<sup>rd</sup> October. Poster: High temperature ash-gas interactions. Quito, Ecuador.
- 2016 **First Annual Munich Earth Science Conference**, 10-12<sup>th</sup> June. Asisitance. Hinterris, Austria.  
**MGM Short course**, 13-17<sup>th</sup> June. Asistance. LMU. Munich, Germany.
- 2015 **EGU General Assembly**, 12-17<sup>th</sup> April. Poster: Geochemical monitoring of Chichón volcano trough sulfur speciation of the lake's water. Vienna, Austria.  
**Symposium 20 years of Popocatepetl's volcanic activity**, 12-13<sup>th</sup> February. Asisitance. Geophysics Institute, National Autonomous University of México (UNAM), México.
- 2014 **Mexican Geophysics Union Anual meeting**, 2-7<sup>th</sup> November. Poster: "Geochemical moitoring of Chichón volcano through the analysis of sulfur species in the crater lake's water". Puerto Vallarta, México.  
**Summer school on volcano monitoring**, 5-13<sup>th</sup> March. Oral Presentation: Sulfur speciation of Chichon volcano's crater lake". Copahue, Argentina.

## FIELD WORK

- 2014 **El Chichón volcano**. 29<sup>th</sup> March, 11<sup>th</sup> July and 3<sup>rd</sup> October. Objective: Sampling of crater lake's water, *in situ* measurements of physicochemical parameters (pH, Temperature, Electrical Conductivity) and overall observations of the crater. Chiapas, México.  
**Popocatepetl volcano**. 27-30<sup>th</sup> April. Objective: Remote measurements of volcanic gas emissions (SO<sub>2</sub> and CO<sub>2</sub>). Puebla, México.  
**Copahue volcano**. 5-13<sup>th</sup> March. Objective: Sampling of fumaroles from the volcano's flanks. Copahue, Argentina.
- 2011 **El Chichón volcano**. 2<sup>nd</sup> March. Objective: Soil sampling at different distances from the carter. Chiapas, México
- 2008 **Poás, Arenal, Irazú and Turrialba volcanoes**. 10<sup>th</sup> February. Objective: Volcano monitoring campaign. Costa Rica

## ANALYTICAL EXPERIENCE

Atomic emission spectroscopy, Ion chromatography, Raman spectroscopy, Scanning electron microscope, Electron probe micro-analyzer.

## LANGUAGES

**Spanish**, Native speaker  
**English**, TOEFL ITP B2 Level  
**German**, Goethe Zertifikat B2 Level