
DANIEL **SANCHEZ CARRETERO**

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Summary

Environmental and energy data specialist with 5+ years of interdisciplinary experience in clean energy systems, electrochemistry, and sustainability analytics. Skilled in Python, Energy+, AWS, and ArcGIS. Proven success in technical reporting, academic publishing, and cross-sector collaboration.

Skills

- **Programming & Data:** Python, MATLAB, Fortran, SAS, GitHub, AWS, Coiled
 - **Modeling & Simulation:** Energy+, JEPlus, OpenStudio, CrystalMaker, Gaussian
 - **Tools & Platforms:** KNIME, ArcGIS, SEM, TEM/FIB, XRD, XPS, HPLC
 - **Soft Skills:** Interdisciplinary collaboration, Technical writing, Policy research
 - **Languages:** English, Spanish, Catalan (fluent); German, Russian, Japanese (basic)
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Experience

Research Lead **09/2022 to Current**
Foundation for Renewable Energy and the Environment **Remote**

- Assessment of clean energy and energy efficiency potential in urban areas. Interdisciplinary work with Energy and Environmental Policy as well as Engineering backgrounds. Solar energy potential in cities through building rooftop analysis using ArcGIS as well as energy efficiency potential using Energy+ and JEPlus. Big data management using KNIME, Python, AWS.

Research Assistant **08/2018 to 09/2022**
Foundation for Renewable Energy & Environment, University Of Delaware **Newark, DE**

- Assessment of clean energy and energy efficiency potential in urban areas. Interdisciplinary work with Energy and Environmental Policy as well as Engineering backgrounds. Solar energy potential in cities through building rooftop analysis using ArcGIS as well as energy efficiency potential using Energy+ and JEPlus. Big data management using KNIME.

Research Assistant **08/2014 to 09/2022**
University Of Delaware **Newark, DE**

- Research on a wide variety of topics ranging from electrochemical methods applied to CO2 reduction to sustainable ways of managing/recycling hydraulic fracturing water.

Physics Teacher Assistant **08/2013 to 05/2014**
University Of West Georgia **Carrollton, GA**

- Lecturing and grading astronomy to college freshmen and sophomore students.

Research Assistant **01/2011 to 05/2014**
University of West Georgia **Carrollton, GA**

- Application of forces at resonant frequencies Applied Euler-Bernoulli beam theory.
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Education and Training

Ph.D.: Civil And Environmental Engineering **09/2022**
University of Delaware **Newark, DE**

- Completed coursework in Material Science, Chemistry and Chemical Engineering in addition to Civil and Environmental Engineering classes.

Workshop Coordinator: Ecohydrology **11/2018**
University of Delaware **Newark, DE**

- Interdisciplinary workshop coordinator. 20 professors from all over the world as well as 6 students from different departments (Geography, Energy and Environmental Policy, Disaster Research Center, Plant

and Soil Sciences, Civil and Environmental Engineering). The workshop sought to generate the research questions for the field of Ecohydrology in the next decade (2018-2028 UN-Water, Water Action Decade).

Bachelor of Science: Physics, Economics
University of West Georgia

05/2014
Carrollton, GA

- Major in Physics
 - Minor in Economics
 - Conference: Determinants of State Investment on Renewable Energy
- Academy of Economics and Finance-Chattanooga, TN
- Conference: SAS Analytics Summit
- Georgia Academy of Science-Valdosta, GA
- Conference: Simulation of a Vibrating Beam

Certificate: SAS Certificate
University of West Georgia

05/2014
Carrollton, GA

Summer Course: Physics
University of Barcelona

06/2010
Barcelona, Spain

Topics in physics summer course.

Summer Course: Astronomy
Center For Talented Youth, Johns Hopkins University

06/2008
Baltimore, MD

Activities and Honors

- American Chemical Society
- MENSA International
- Student of Distinction (2019)
- Honors College, Dean's List (2010-2014), UWG
- The National Society of Collegiate Scholars
- Alpha Lambda Delta, Phi Kappa Phi, Honors Fraternities
- Boyd Award in Physics (2014), UWG
- Multicultural Achievement Award (2014), UWG
- International Student Club, Membership Chair, UWG
- Physics and Engineering Club, UWG

Publications

Peer Reviewed Journals

- Li, W., Jen Shih, Y., Sanchez Carretero, D., & Huang, C.-P. (2022). The electrochemical oxidation of chloride on Pt-Ni-Co-G electrodes and its application in in-situ disinfection of water. *Chemical Engineering Journal*, 428, 132069. <https://doi.org/10.1016/J.CEJ.2021.132069>
- Carretero, D. S., Huang, C., Tzeng, J.-H., & Huang, C. (2020). The Recovery of Sulfuric Acid from Spent Piranha Solution over a Dimensionally Stable Anode (DSA) Ti-RuO₂ Electrode. *Journal of Hazardous Materials*, 406(November 2020), 124658. <https://doi.org/10.1016/j.jhazmat.2020.124658>
- Levia, D. F., Creed, I. F., Hannah, et al. (2020). Homogenization of the terrestrial water cycle. *Nature Geoscience*, 13(October), 656–658.
- Guswa, AJ, Tetzlaff, D, Selker, JS, et al. Advancing ecohydrology in the 21st century: a convergence of opportunities. *Ecohydrology*. 2020

Technical Reports

- Byrne, J., Taminiau, J., Cristinzio, D., Grover, D., Sanchez Carretero, D. (2022) Low-Carbon Planning for A Solar Energy Future. <https://dx.doi.org/10.2139/ssrn.4237776>

- Byrne, J., Taminiau, J., Sanchez Carretero, D., & Shin, S. (2021). Developing a Building-by-Building Estimate of City-wide Electricity Savings Potential: An Early Trial for the City of Wilmington, Delaware. <https://papers.ssrn.com/abstract=3914143>
- Byrne, J., Taminiau, J., Carretero, D., and Cristinzio, D. (2020). City-wide Energy Efficiency Assessment: Case Study of Newark, DE. Newark, DE: CEEP, University of Delaware.
- Byrne, J., Taminiau, J., Carretero, D., Shin, S., and Xu, J. (2019). Risk Mitigation in Energy Efficiency Retrofit Projects Using Automated Monitoring and Verification Techniques. Technical report prepared for the Delaware General Assembly. Newark, DE: CEEP, University of Delaware

Conferences

- Huang M, Tzeng JH, Carretero D, Huang CP (2019). Water reclamation from hydraulic fracturing wastewater using a coupling water electrolysis and galvanic fuel-cell process. CSAWWA.
- Carretero D, Huang CP (2019). Recovery of sulfuric acid from piranha solution over a dimensionally stable anode (DSA) Ti-RuO₂ electrode and beyond. ACS Fall 2019 National Meeting & Exposition in San Diego, CA.
- Daniel Sanchez Carretero (2013). Simulation of a vibrating beam. Georgia Journal of Science. ISSN 0147-9369. p.31

Book Chapters

- Taminiau, J., Byrne, J., Carretero, D. S., Shin, S., Xu, J. Risk Mitigation in Energy Efficiency Retrofit Projects Using Automated Performance Control. DOI: <http://dx.doi.org/10.5772/intechopen.89476>