



## Victor Awosiji

Earth and Planetary Sciences  
Stanford Doerr School of Sustainability  
Stanford University

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### EDUCATION

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#### – Stanford University

*Ph.D. in Earth and Planetary Sciences*

2023 – present

#### – Stanford University

*M.Sc. in Geological Sciences (Distinction)*

2021 – 2023

#### – The Federal University of Technology, Akure

*B.Sc. in Applied Geology (First-Class Honors)*

2015 – 2019

### ACADEMIC RESEARCH EXPERIENCE

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#### – Stanford University — Doerr School of Sustainability

*Research Assistant*

*August 2021 – present*

Stanford, California

- Conducting original research on natural hydrogen systems, subsurface modeling, and data-driven exploration frameworks.
- Developed the Blind Hydrogen System (BHS) framework and Transformer-based models for hydrogen prospectivity.
- Convener of the Natural Hydrogen Session at AGU 2024; collaboration with national labs and industry partners.
- Publications, invited talks, and peer recognition supporting sustained research impact.

#### – The Federal University of Technology, Akure — School of Earth and Mineral Sciences

*Research Assistant*

*2016 – 2019*

Ondo State, Nigeria

- Conducted Geological mapping, petrology and geochemical evaluation of Precambrian metasedimentary Ilesha Schist belt
- Independent project on petrophysical and rock physics analysis in the classification of fluids and lithology in the Bovi field, offshore Niger-Delta

### PUBLICATIONS IN REFEREED JOURNALS

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- Awosiji, V., Graham, S., Mukerji, T. (2025). The concept of a Blind Hydrogen System. *International Journal of Hydrogen Energy*, 158, 150492. <https://doi.org/10.1016/j.ijhydene.2025.150492>
- Mathur, Y., Awosiji, V., Mukerji, T., Hosford Scheirer, A., Peters, K. E. (2024). Soil geochemistry of hydrogen and other gases along the San Andreas fault. *International Journal of Hydrogen Energy*, 50(B), 411–419. <https://doi.org/10.1016/j.ijhydene.2023.09.032>

### PEER-REVIEWED ORAL CONFERENCE PRESENTATIONS

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- Awosiji, V. (2025). *Geological and Geophysical Evaluation of Natural Hydrogen: Insights from the Blind Hydrogen System*. **Invited oral presentation**, Drilling for Hydrogen Conference, September 15–16, 2025.
- Awosiji, V. (2025). *Understanding Geologic Hydrogen Production from First Principles*. **Invited abstract and oral presentation**, California Hydrogen Convention – Technical Conference, California, USA, March 18, 2025.
- Awosiji, V., & Mukerji, T. (2024). *The Concept of Blind Hydrogen Systems*. **Peer-reviewed competitive oral presentation** (Session NS41A-09; 9 oral presentations selected), American Geophysical Union (AGU) Fall Meeting, Washington, DC, USA.

### POSTER PRESENTATIONS (PEER-REVIEWED AND INVITED)

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- Awosiji, V., Mathur, Y., & Mukerji, T. (2024). *The Curious Case of Geologic Hydrogen: Evidence from Western California*. Poster presentation, Stanford Government Energy Summit, Stanford University, Stanford, CA, USA, January 29–30, 2024.
- Awosiji, V. (2024). *Natural Hydrogen Systems: Geological Controls and Exploration Implications*. Poster presentation, Stanford Doerr School of Sustainability Research Symposium, Stanford University, CA, USA.
- Awosiji, V. (2023). *Geologic Controls on Natural Hydrogen Occurrence*. Poster presentation, Stanford Earth Graduate Research Symposium, Stanford University, CA, USA.

## INVITED TALKS AND SCIENTIFIC LEADERSHIP

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- Awosiji, V. (2026). *Hydrogen Beneath Our Feet: Multimodal AI for Geologic Hydrogen Discovery*. **Selected research presentation**, Stanford Sustainability Forum (Ideas Hall), Stanford Doerr School of Sustainability, Stanford University, Stanford, CA, USA, April 29–30, 2026.
- Awosiji, V. (2025). *Natural Hydrogen as a Critical Resource*. **Invited lecture**, Economic Geology & Critical Resources Speaker Series, Montana State University, Bozeman, MT, USA, November 17, 2025.
- Awosiji, V. (2025). *Natural Hydrogen: A Potential Value-Added Product for California Resources Corporation*. **Invited internal technical presentation**, Company-wide Community of Practice (CoP) Meeting, California Resources Corporation, October 2025.
- Awosiji, V. (2025). *The Role of Geological Hydrogen in the Energy Transition*. **Invited panelist**, Drilling for Hydrogen Conference, September 15, 2025.
- Awosiji, V. (2025). *Natural Hydrogen Exploration Techniques*. **Invited internal technical presentation**, Community of Practice (CoP) Meeting, California Resources Corporation, March 2025.
- Awosiji, V. (2025). *Unlocking Natural Hydrogen's Potential: A Game-Changer for the Energy Industry?* **Invited technical presentation**, Nigerian Association of Petroleum Explorationists (NAPE), North America Chapter, February 26, 2025 (Virtual).
- Yuan, Q., Mukerji, T., **Awosiji, V.**, Yedinak, E., & Frery, E. (2024). **Convener**, *NS016: Unravelling the Mystery of Natural Hydrogen Occurrence and Unlocking Its Potential for Energy Transition*. American Geophysical Union (AGU) Fall Meeting, Washington, DC, USA, December 9–13, 2024.
- Awosiji, V. (2024). *Advanced amine solvents and absorber column cost reduction for cost-effective decarbonization of natural gas power plants*. Technical presentation, Telluride Impact Summit (OpenMinds NextGen CCUS), Telluride, CO, September 26–29, 2024.
- Awosiji, V. (2024). *Advanced amine solvents and absorber column cost reduction for cost-effective decarbonization of natural gas power plants*. Technical presentation, Clean Energy Founder Forum, Telluride Venture Network, Telluride, CO, September 25, 2024.
- Awosiji, V. (2023). *Bettering Human Lives: Perspectives on Energy, Climate & Poverty*. **Invited technical panelist**, Energy Dialogues e-Dialogues (National Energy Policy Webinar Series), featuring **Chris Wright (U.S. Secretary of Energy; then CEO, Liberty Energy)**, November 29, 2023.

## PEER REVIEW AND JUDGE

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- **Reviewer**, *International Journal of Hydrogen Energy* (Elsevier), 2024–2026.  
Reviewed 5 manuscripts, including full-length research articles and short communications. <https://orcid.org/0000-0001-9319-9837>
- **Abstract Reviewer**, *American Geophysical Union (AGU) Fall Meeting*, August 2024.  
Reviewed and evaluated conference abstracts for Session NS016: *Unravelling the Mystery of Natural Hydrogen Occurrence and Unlocking Its Potential for Energy Transition*.

## PROFESSIONAL EXPERIENCE

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- **California Resources Corporation** *Los Angeles, California*  
*Geoscientist and Hydrogen Expert* Dec. 2024 – Oct. 2025
  - Developed new exploration methodology for natural hydrogen exploration in California.
  - Combined machine learning, geological and geophysical methods to select the most prospective hydrogen regions in the Areas of Interest
  - Presented and shared developed methodologies at company-wide Community of Practice (CoP) meetings, contributing to cross-team knowledge transfer and technical standardization.
- **Aramco Americas** *Houston, Texas*  
*Geoscience Innovation Intern* June – September 2023
  - Developed novel techniques for natural hydrogen exploration along the Red Sea Arabian margin.
  - Pioneered first-of-kind natural hydrogen exploration techniques adopted across Aramco operations in the United States and Saudi Arabia.
- **TotalEnergies** *Lagos, Nigeria*  
*Geoscience Intern* September 2018 – February 2019
  - Created a comprehensive drilling database for 5 exploratory and 35 injector/producer wells.
  - Integrated reservoir characterization and uncertainty analysis of turbidite reservoirs in the Egina Field, offshore Niger Delta (475 km<sup>2</sup>).
  - Supported offshore drilling operations as a wellsite geologist on a J-type producer well.
- **Danvic Petroleum International** *Lagos, Nigeria*  
*Subsurface G&G Intern* June – August 2018
  - Conducted hydrocarbon evaluation of a Niger Delta field using seismic interpretation and attribute analysis.
  - Estimated reservoir properties, including water and gas saturation, and evaluated oil-in-place volumes.
  - Identified exploration leads and prospects through integrated subsurface analysis.

## TEACHING EXPERIENCE

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- **Stanford University**, Doerr School of Sustainability  
**Teaching Assistant**, EPS 251: Sedimentary Basins Fall 2025  
Graduate-level core course on sedimentary basin analysis and tectonic evolution, covering depositional systems, burial history, stratigraphic architecture, and basin development through geologic time.
  - Served as Teaching Assistant for Stanford’s flagship graduate course in sedimentary basin analysis.
  - Delivered invited guest lecture on "Resources Associated with Rift Basins."
  - Led and designed lab sessions and technical reviews for graduate students.
  - Led one of the required field trips for the class.
  - Mentored students on stratigraphic interpretation, burial history reconstruction, and subsurface uncertainty analysis.
- **Stanford University**, Doerr School of Sustainability  
**Teaching Assistant**, EPS 102: Introduction to Sedimentology and Stratigraphy Spring 2024  
Undergraduate course focused on sedimentary rocks as records of Earth’s surface processes, covering clastic sedimentology, facies analysis, fluid transport, and links between climate, tectonics, erosion, and deposition.
  - Assisted with instruction for lectures and laboratory sessions in sedimentology and stratigraphy.
  - Led and supported field-based instruction, including two half-day field trips and one full-day Saturday field trip.
  - Guided students in facies interpretation, depositional environment analysis, and stratigraphic reconstruction.
  - Provided academic mentoring and grading support for undergraduate students.
- **Stanford University**, Doerr School of Sustainability  
**Teaching Assistant**, GEOLSCI 1: Introduction to Geology (EARTHSYS 11) Spring 2022  
Introductory undergraduate course covering plate tectonics, rock cycles, Earth history, natural resources, and surface processes through lectures, laboratories, and applied activities.
  - Assisted with instruction for lectures and hands-on laboratory sessions.
  - Supported student learning through in-class activities and applied geologic problem-solving.
  - Contributed to grading, academic mentoring, and instructional support for a large-enrollment introductory course.

## ORIGINAL CONTRIBUTIONS OF MAJOR SIGNIFICANCE

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- Developed the *Blind Hydrogen System (BHS)*, a first-principles exploration framework for identifying natural hydrogen systems, now cited in peer-reviewed literature and adopted in industry-facing research.
- Pioneered first-of-kind natural hydrogen exploration methodologies implemented at California Resources Corporation and Aramco Americas.
- Introduced transformer-based deep learning models for hydrogen prospectivity mapping, integrating geologic, geophysical, and geochemical data.

## GRANTS, FELLOWSHIPS, AWARDS AND SPONSORED RESEARCH

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- **Bob Compton Field Fund**, Stanford Doerr School of Sustainability, March 31, 2026.  
Prestigious field-research award supporting Earth science research, field data collection, and geologic sample analysis.
- **The Richard H. Jahns Fellowship** Fund in Field Geology, 2025-26 academic year
- **Lawrence W. Funkhouser Named Grant, Grants-in-Aid**, American Association of Petroleum Geologists (AAPG), May 2023.  
Competitive, named research grant awarded to support graduate research in petroleum geology and subsurface energy systems.
- **Geological Society of America (GSA) Graduate Research Grant**, 2023.  
Competitive research grant awarded to support graduate-level geoscience research.
- **McGee and Levorsen Fellowship**, Stanford Doerr School of Sustainability, May 2023.  
Competitive research fellowship awarded for outstanding research ideas, selected based on research merit, impact, academic and professional achievements, and execution ability. Awarded for research on geologic hydrogen exploration methods.
- **I-Scholar Initiative Award**, Nigeria.  
Merit-based award recognizing top Nigerian undergraduate students for academic excellence.
- **Second Runner-Up**, International Petroleum Technology Conference (IPTC) Education Week, Saudi Arabia, January 2020.  
Awarded for outstanding performance in a competitive international petroleum education program.
- Institutional Research Support, Stanford University, 2021–present. Doctoral research support for subsurface modeling, geologic hydrogen systems, and data-driven exploration.
- **NAPE Grant-in-Aid Award**, Nigerian Association of Petroleum Explorationists (NAPE), September 2019.  
Competitive cash grant awarded to support undergraduate research in petroleum geology.

- **Dr. D. K. Olukoya Academic Award of Excellence**, Mountain of Fire and Miracles Ministries (Campus Fellowship), Nigeria, August 2024.  
Awarded for graduating with First-Class Honors at the bachelor's level (2019); recognition conferred in 2024 by state governors of Lagos, Ogun, and Delta States.
- **Best Paper Presentation – The Future of Geosciences**  
Nigerian Mining and Geoscience Society (NMGS), FUTA Geoscience Conference, June 2019.
- **Dean's List Award**, Federal University of Technology, Akure (FUTA), Nigeria, 2017–2019.  
Awarded for achieving a semester GPA of  $\geq 4.5/5.0$ . Received **5 times across 10 semesters**, reflecting sustained academic excellence at the undergraduate level.

## MEDIA AND INSTITUTIONAL RECOGNITION

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- **Expert commentary featured in New Scientist**. “*Are vast amounts of hydrogen fuel hidden below Earth's surface?*” International science magazine article quoting **Awosiji, V.** for expert insights on natural (geologic) hydrogen systems and subsurface hydrogen generation. New Scientist, 2024.  
newscientist.com
- “Geologic hydrogen in Western California,” featured research project at Jasper Ridge Biological Preserve, Stanford University, highlighting work by **Awosiji, V.** and Mathur, Y. on natural hydrogen exploration and soil gas sampling, Stanford University, 2023–2024.  
jrpbp.stanford.edu/geologic-hydrogen-western-california
- **International competition recognition featured by Federal University of Technology, Akure (FUTA)**.  
Official university news coverage recognizing **Awosiji, Victor Akinbola** for leading a team that won **Bronze** at the 12th International Petroleum Technology Conference (IPTC) Education Week, Dhahran, Saudi Arabia (January 2020). Coverage highlights selection among the top 100 students globally and participation in a competition attended by over 18,000 industry professionals from 70+ countries.  
futa.edu.ng

## SELECTED TECHNICAL PROJECTS AND ACADEMIC PRESENTATIONS

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- Ajani, M., & **Awosiji, V.** (2025). *Accelerating CO<sub>2</sub> Storage Optimization with Deep Learning-Based Surrogates*. Technical project presentation, Stanford University, CS230: Deep Learning, December 2025.
- **Awosiji, V.**, & Mukerji, T. (2025). *Preliminary Insights into Natural Hydrogen Exploration and Prospectivity in California*. Oral presentation, 8th Annual Stanford Center for Earth Resource Forecasting (SCERF) Meeting, Menlo Park, CA, USA, May 21–22, 2025.
- **Awosiji, V.**, & Mukerji, T. (2025). *Uncertainty in the Use of Electrochemical Sensors for Natural Hydrogen Exploration*. Oral presentation, 8th Annual Stanford Center for Earth Resource Forecasting (SCERF) Meeting, Menlo Park, CA, USA, May 21–22, 2025.
- **Awosiji, V.**, Graham, S., Mukerji, T. (2024). *Blind Geologic Hydrogen System*. Oral presentation, 7th Annual Stanford Center for Earth Resource Forecasting (SCERF) Meeting, Stanford, CA, USA, May 22–23, 2024.
- **Awosiji, V.**, Mathur, Y., Peters, K., Scheirer, A.S., Mukerji, T., Graham, S. (2024). *Concept of a Blind Hydrogen System: A case for Western California*. Oral presentation, 16th Annual Basin Processes and Subsurface Modeling (BPSM) Industrial Affiliate Meeting, Santa Cruz, CA, USA, November 13 – 14, 2023.
- **Awosiji, V.**, Burdeau, P., Schüler, Y., & Boness, N. L. (2023). *Executive Summary of the 2023 Stanford Natural Gas Initiative Annual Symposium*. Stanford Natural Gas Initiative, Stanford University, Stanford, CA, November 8–9, 2023.

## PROFESSIONAL AFFILIATIONS AND MEMBERSHIPS

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- American Association of Petroleum Geologists
- American Geophysical Union
- European Association of Geoscientists and Engineers
- Geological Society of London
- Geological Society of America
- Nigerian Association of Petroleum Explorationists
- Nigerian Mining and Geoscience Society
- North American Gas Forum
- OpenMinds
- Society of Petroleum Engineers