November 5, 2026

Dear Members of the Search Committee,

I love Louisiana Tech.

I am applying to serve as Tech's next president. A two-time Tech graduate, I worked seven years in industry and have spent the last 20 years in higher education as a professor, department chair, and university research leader. I know how a university works from the classroom up: how to recruit and support faculty, balance budgets, grow research, and help students find good jobs. I understand the pressures on Louisiana's public universities, from state funding and tuition to enrollment and retention. I believe that a university has to earn its future, from students who choose Tech, sponsors who fund competitive research, and alumni who give because they believe in us. And I have built working relationships with the universities, companies, and government agencies that can help Tech grow. I would bring all of that experience home.

I arrived in Ruston in 1989, the youngest of seven children from Pineville, following my brother to a school that was the right fit. That first winter quarter, I failed trigonometry. I decided that if I was going to stay at Tech, I would work to be the best student in every class and truly learn the fundamentals instead of just memorizing for the test. A month into the spring quarter, Professors Griffin and Marion found out I was taking calculus without the prerequisite. Normally, they told me, I would have to drop calculus, but they let me stay because I was their top student. I have never forgotten how they held me to a high standard and believed in me at the same time. Those two professors, and more than 20 others, shaped who I am today.

I have stayed close to Tech over the years. I have worked with Tech faculty on research, and since 2022 I have served on Tech's Chemical Engineering Advisory Board, where I review senior design projects and program outcomes with the faculty. I have watched with pride as Tech's faculty, staff, and leadership have achieved record freshman classes and steady enrollment growth, and as Tech has joined the Sun Belt Conference. I want to keep that momentum going while protecting what makes Tech special: small classes, faculty who know their students by name, a safe and welcoming campus, and the small-town Louisiana values of hard work and family.

I joined the LSU faculty in 2006 and earned tenure and promotion to full professor through the same faculty review Tech's professors go through. Along the way, I have served as a principal, co-principal, or senior investigator on more than $37 million in sponsored research, published 48 peer-reviewed papers, and received 10 U.S. patents. In 2022, I received the LSU Distinguished Faculty Award. But the most meaningful recognition I receive comes from former students in the form of their gratitude. As a professor, I followed the example my professors at Tech set for me. I invested time in my students' future through every lecture, every homework assignment, every hands-on lab, and every test.

For eight years, I chaired the Cain Department of Chemical Engineering, which had more than 900 undergraduates, 60 graduate students, and 25 faculty members. As a leader, I focused on strong faculty hires, balanced budgets, and growing our endowments. Faculty are recruited in a national market, with startup packages, laboratories, and graduate students, and I have hired and retained outstanding faculty. As a faculty member and department chair, I learned that shared governance with the faculty is how a university makes good decisions and keeps them. I

judged our success by how our students did in the real world. I worked with our administration and faculty to change the teaching schedule to offer required courses every semester so students could co-op without losing a year, added a co-op course, and hired a retired industry expert to place students with regional companies. By the end of my time as department chair, 90% of our students had co-op or internship experience, 90% had jobs at graduation, and the average starting salary was over $90,000. That is the kind of outcome I want for every Tech student.

For the last three years, I have served as LSU's associate vice chancellor for research in science and engineering. I oversee several of LSU's major research units, including the LSU Energy Institute, where I am executive director. I have also built partnerships with the Department of Energy, its national laboratories, and the Department of Defense. As part of LSU's research leadership, I helped grow annual research spending across LSU from $366 million to a record $601 million, including about $300 million a year on the Baton Rouge campus. Nearly all research money is restricted to what the sponsor funded, so I know research alone cannot close an operating gap. It strengthens the core budget through indirect cost recovery, graduate tuition, and the state funding formula. Our team also launched the statewide $160 million NSF Regional Innovation Engine (FUEL), the largest research award in NSF and LSU history. FUEL's more than 50 partners include Louisiana Tech and colleges and universities across the state.

After earning my B.S. and M.S. at Tech and my Ph.D. at Georgia Tech, I spent seven years at IBM's Watson Research Center and Motorola's research labs developing chip-manufacturing processes, including multi-chip packaging. As a project manager in the semiconductor industry, I made business decisions affecting hundreds of millions of dollars in investment and billions in revenue. That job taught me to manage resources carefully and to tie every investment to clear goals and measurable results. I have taught, led research, and worked in industry. Tech's future runs through all three.

I have also seen firsthand what one manufacturing plant can do for a community. My father was an engineer for Procter & Gamble and helped start the Pineville plant in the late 1960s. That plant still provides jobs for Central Louisiana families today. He also served as an Air Force Reserve pilot out of Barksdale. Watching him, I learned what it means to provide for a family and to serve.

Northwest Arkansas is a good example of what happens when a university, industry, local government, and community grow together. North Alabama offers another model, where universities and research institutions anchor aerospace, defense, and advanced technology. I believe North Louisiana has the same potential, with Tech at the center. Louisiana is seeing more industrial investment than at any time I can remember, and I-20 links our region to Dallas and its large technology market. Tech can provide the talent, applied research, advanced manufacturing, and suppliers that technology companies will need. As industry grows, the region will need a larger, more skilled workforce. That means more engineers and technical experts, but also more nurses, health care professionals, and teachers. Growing towns will also need affordable homes and communities where families want to live.

Louisiana Tech is ranked among the top tier of national universities. Like the best universities in the country, Tech has to earn its own future. About three-quarters of its operating budget is self-generated, mostly tuition from students who choose Tech. That comes with an obligation: to deliver a strong return on their investment by graduating students on time with valuable skills and good jobs.

As Tech's president, I would hold myself accountable for three goals:

- **Student success:** Raise first-year retention and six-year graduation rates into the top tier of Tech's national peer group, and make sure our students have good jobs when they graduate, with little or no debt. These results are central to Tech's mission, and they help Tech earn its state funding. To get there, I would work with faculty and staff to improve student engagement and academic support. I would also stay close to the employers who hire our graduates.
- **Regional growth and partnerships:** Build partnerships with employers and federal agencies that pay their full costs, give students paid co-ops and hands-on research, and bring jobs to North Louisiana. Employers could also invest in their own workforce through Tech, strengthening its enrollment and revenue.
- **Financial strength:** End each year with an unrestricted operating surplus and rebuild unrestricted cash to at least 60 days, paying raises and other recurring costs only from recurring revenue. That means growing revenue and managing costs, while protecting the academic core. I would focus on three things Tech can control: tuition, efficiency, and enrollment. I would use the new tuition authority carefully and protect students with financial need by returning part of each increase to need-based aid. Efficiency means making sure our resources go first to students, teaching, and research. Enrollment growth starts with retention, the least expensive way to grow, and new students should first fill the classes and residence halls we already have.

  Within 90 days of taking office, I would work with Tech faculty and the University of Louisiana System to define a clear plan that includes a multi-year budget tied to the goals, specific targets, and a fair, funded path for faculty and staff pay. I would make regular raises a priority. I would report to the Board every quarter on the System's financial warning indicators, and I would keep faculty and staff informed about where the university stands and involve them in shaping its future.

To build the region's workforce and strengthen the North Louisiana economy, I would focus on four areas:

- **Technology, semiconductors, and advanced manufacturing.** Radiance Technologies is building a secure chip packaging facility in Ruston. Amazon Web Services and Meta are building data centers across North Louisiana. Having spent my industry career in the technology field, I know what these companies look for when they hire.
- **Health care.** Hospitals and clinics are among North Louisiana's largest employers. Tech prepares nurses, mental health professionals, and many other health specialists, and its new research partnership with LSU Health Shreveport brings medicine together with Tech's strengths in engineering and technology. I would work with the region's health systems to grow these programs in areas like rural health and telemedicine.
- **Cybersecurity and defense.** Barksdale Air Force Base is one of the most important strategic bases in the country. Tech's Cyberspace Research Laboratory and the Louisiana Tech Research Institute give us a strong foundation for making the I-20 corridor from Ruston to Shreveport-Bossier a national hub for cybersecurity and defense research.
- **Education.** Every growing town needs good teachers, and Tech has prepared them since 1894. Tech's College of Education and Human Sciences has one of the nation's top-rated

teacher preparation programs. I would work with school districts to prepare more math, science, and computing teachers and to expand dual enrollment for high school students.

These four areas are a starting point. Business, the sciences, agriculture and forestry, the liberal arts, and aviation all matter as the region grows. In every area, I would start with our faculty and then engage employers to learn their workforce and technology needs. Tech should also do this work alongside its sister universities, Louisiana Economic Development, local communities, and economic developers across the region.

I have always been a Tech fan. Growing up, while my brother was a Tech student, I cheered for the Lady Techsters during their 1980s championship runs. As a student myself, I was on the front row watching stars like Venus Lacy, Willie Roaf, and P.J. Brown. Athletics is a big part of Tech's identity, and that should continue. I believe Tech's move to the Sun Belt, along with revenue sharing, NIL, and the transfer portal, calls for athletics, academics, partners, and Tech fans to be more closely aligned. With that in mind, I would support our coaches and student-athletes and work with donors and alumni to grow athletics revenue. Tech should compete to win, and athletics should be on solid financial footing.

Finally, we are a Tech family. My brother, sister-in-law, and nephew are all alumni, and my wife, Shirley, graduated from Tech's College of Education and Human Sciences. She has been an award-winning fourth-grade teacher in Louisiana and Georgia.

Shirley and I would love to make Ruston our home. Serving on Louisiana Tech's faculty and as its 16th president would be the honor of my life. Tech shaped who I am, and I would devote the rest of my career to giving every student the same chance it gave me.

Ever Loyal,



John Flake

John Flake

Associate Vice Chancellor for Research, Professor of Chemical Engineering
Executive Director, LSU Energy Institute
Louisiana State University, Baton Rouge, Louisiana • john.flake@gmail.com • LinkedIn • Google Scholar

LEADERSHIP PROFILE

Chemical engineering professor with more than two decades of leadership spanning university research and advanced-technology industry. As an Associate Vice Chancellor in LSU's Office of Research & Economic Development (ORED) and Executive Director of the LSU Energy Institute, helped guide the institution through three consecutive years of record research growth and helped secure and steward transformational federal investments, including the NSF Regional Innovation Engine (FUEL), worth up to $160 million, and an EDA Tech Hub designation. Oversees the CAMD synchrotron light source, the Advanced Microscopy and Analytical Core (AMAC), and the LSU Energy Institute, including the Louisiana Geological Survey. Experienced in leading major initiatives and in partnering with federal agencies and the congressional delegation to advance nationally competitive research capabilities in energy and defense. Combines a strong scholarly record (48 peer-reviewed publications, 2,600+ citations, and 10 issued U.S. patents) with executive experience in partnerships, fundraising, faculty leadership, budgets, and large multi-institution programs.

RESEARCH LEADERSHIP & ADMINISTRATION

- **Research centers, staff & budgets:** Lead three major research units: the J. Bennett Johnston Sr. Center for Advanced Microstructures and Devices (CAMD), LSU's synchrotron light source, with accelerator, scientific, operations, vacuum, and clean-room groups; the Advanced Microscopy and Analytical Core (AMAC), including development of its $10 million aberration-corrected scanning transmission electron microscope; and the LSU Energy Institute, including the Louisiana Geological Survey and the energy policy group.
- **Federal research strategy & enterprise growth:** As part of the ORED senior leadership team, contributed to LSU's rise to a record $601 million in annual research expenditures (FY2024–25), an approximately 11% year-over-year increase and the latest in a multi-year record streak (up from $366 million in FY2021, a compound growth rate over 10%).
- **NSF Regional Innovation Engine – FUEL ($160M):** Helped develop and launch Future Use of Energy in Louisiana (FUEL), the LSU-led 50+ partner coalition awarded up to $160 million in 2024 — the largest research award in both NSF and LSU history — advancing carbon capture, hydrogen, CO_2 utilization, and industrial decarbonization.
- **EDA Tech Hub designation:** Supported the LSU-led consortium named one of 31 national EDA Regional Technology and Innovation Hubs, unlocking competitive federal funding to strengthen Louisiana manufacturing and U.S. economic and national security.
- **Federal-agency, congressional & industry engagement:** Lead LSU's engagement with DOE, DOD, the Louisiana congressional delegation, national laboratories, and industry to position the state for major investments in critical minerals and mineral processing, hydrogen, carbon management, and nuclear energy; developed the strategy and case for a DOE-designated user facility for chemical and mineral processing at LSU. This work includes input on DOE-related authorizations and appropriations.
- **Academic leadership:** As Department Chair (2015–2023), led the Cain Department of Chemical Engineering through faculty recruitment, fundraising, and sustained growth in research activity. By 2023, 90% of students had co-op or internship experience, 90% had jobs, and the average starting salary exceeded $90,000.

PROFESSIONAL EXPERIENCE

Associate Vice Chancellor for Research — 2023 – Present

Office of Research & Economic Development, LSU

Science & Engineering of Natural and Built Environments. Jesse Coates Professor and Jay Affolter Professor, Cain Department of Chemical Engineering. Baton Rouge, LA.

- Lead 58 scientists, engineers, and staff across the CAMD synchrotron, the Advanced Microscopy and Analytical Core (AMAC), and the LSU Energy Institute.
- Executive Director of the LSU Energy Institute (2026–present), founded with a $27.5 million investment from Shell; lead its energy policy, Louisiana Geological Survey, Minerals Processing Research Institute, education and outreach, and communications groups, and advance LSU's energy priorities across the research enterprise.
- Develop and steward large multi-institution federal programs and agency and industry partnerships. Established Argonne and Oak Ridge National Laboratory Days, bringing more than two dozen national-lab leaders to Baton Rouge and leading to two grants under the Department of Energy's Genesis Mission, dozens of new collaborations, and student internships.

Jay Affolter Professor & Department Chair — 2015 – 2023

Cain Department of Chemical Engineering, LSU

- Provided strategic leadership, management, and fundraising for a department of 25 faculty, 8 staff, 900+ undergraduates, and 60 graduate students; grew research activity and recruited faculty across priority areas. To expand student access to co-ops, transitioned required course offerings from annual to every semester so students could take a fall or spring co-op without losing a year; created a co-op recruiting position and a co-op course, and hired an industry expert to secure placements with regional companies.

Associate Professor (with tenure) — 2010 – 2015

Cain Department of Chemical Engineering, LSU

- Director of Chemical Engineering Graduate Studies (2011–2014); led graduate program strategy, recruitment, and curriculum.

Associate Professor — 2006 – 2010

Cain Department of Chemical Engineering, LSU

Principal Staff Scientist — 2000 – 2006

Motorola / Freescale Semiconductor, Austin, TX and Crolles, France

- Led metallization, electrodeposition, and CMP process development across three technology nodes with alliance partners AMD, NXP, and STMicroelectronics; responsible for 2.5D multichip packaging.

Research Staff Member — 1999 – 2000

IBM T. J. Watson Research Center, Yorktown Heights, NY

- Led research and development of polysilicon devices and liquid crystal display processing.

EDUCATION

- **Ph.D., Chemical Engineering** — Georgia Institute of Technology, 1999
- **M.S., Chemical Engineering** — Louisiana Tech University, 1994
- **B.S., Chemical Engineering** — Louisiana Tech University, 1993

SPONSORED RESEARCH & FUNDING

Principal, co-principal, or senior investigator on more than $37 million in sponsored research from federal agencies and industry, including NSF, DOE, EDA, DOD, and the Semiconductor Research Corporation. Selected awards:

- **NSF EPSCoR RII Track-2 FEC** (with the University of Delaware) — $4.0M (Principal Investigator)
- **EDA Build Back Better** — $6.2M (Co-Principal Investigator)
- **DOE Energy Frontier Research Center —** Center for Atomic-Level Catalyst Design (CALCD), LSU-led multi-institution EFRC, 2009–2014 — $13.2M (Senior Investigator)
- **Industry-sponsored research** — Entegris, Intel, and SRC — $1M+ (Principal Investigator)
- **NSF SBIR** — Phase I & II, Electrochemical Materials, LLC (founder; silicon anodes for lithium-ion batteries); Phase I, Encore CO_2 (co-founder; CO_2 electrolysis)
- **Large multi-institution programs** — leadership / co-investigator roles on FUEL (NSF Engines, up to $160M, LSU-led consortium); see Research Leadership.

SELECTED HONORS & AWARDS

- 2022 LSU Distinguished Faculty Award — one of LSU's highest faculty honors, recognizing sustained excellence in teaching, research, and service.
- 2018 SEC Academic Leadership Development Program Fellow — leadership-development program preparing faculty for senior higher-education roles. Included cohort visits to the University of Kentucky and the University of Tennessee and case studies on university finances, philanthropy, athletics, public–private partnerships, and other institution-wide issues.
- Motorola Bravo Award; Motorola Outstanding Patent Award
- AIChE Outstanding Paper Award

PEER-REVIEWED PUBLICATIONS

Peer-reviewed journal articles (2,600+ citations, Google Scholar).

1. Dauda, M. O.; Bello, M. O.; Hendershot, J. C.; Agbadan, I. K.; Lombardo, N.; Noor, S. B.; Sprunger, P.; Yao, K. P. C.; Engler, A.; Flake, J. C. Electrolytic Reduction of CO_2 in a Flowing Electrolyte Interlayer MEA Cell. Journal of The Electrochemical Society 2026, 173 (17), 174502. https://doi.org/10.1149/1945-7111/ae9b74.

2. Adebayo, D.; Flake, J.; Mandalika, A.; Narra, S.; Upton, G. Blue Hydrogen and U.S. Tax Credit Policy: An Economic Assessment of 45Q and 45V Incentives under a Changing Federal Policy. Energy Policy 2026, 216, 115401. https://doi.org/10.1016/j.enpol.2026.115401.

3. Mishra, M.; Obetta, E.; Dauda, M. O.; Flake, J.; Yao, K. P. C. Raman Evidence for the Mechanism of Enhanced C–C Coupling during CO_2RR on CuSnx Bimetallic Electrocatalysts at Dilute Sn Levels. Journal of The Electrochemical Society 2025, 172 (12), 124501.

4. Park, J.; Agbadan, I.; Dauda, M.; Bello, M.; Hendershot, J.; Tasnim, S.; Oduyebo, O.; Park, S.; Engler, A.; Williamson, J.; Mathew, V.; Atalay-Oral, C.; Flake, J. C. Copper-Epoxy Interface Engineering for High-Frequency Chip-to-Chip Interconnects. ECS Journal of Solid State Science and Technology 2025, 14 (11), 111004. https://doi.org/10.1149/2162-8777/ae170a.

5. Bello, M.; Dauda, M. O.; Hendershot, J.; et al.; Plaisance, C.; Flake, J. C. Anolyte Buffering and CO Coverage Effects in the Electrochemical Reduction of CO at Cu Electrocatalysts. ACS Applied Energy Materials 2025.

6. Dauda, M. O.; Bello, M.; Hendershot, J.; et al.; Flake, J. C. Highly Selective Electrolytic Reduction of CO_2 to Ethylene. ACS Applied Energy Materials 2025, 8 (18), 13607–13619.

7. Hendershot, J.; Dauda, M.; Tasnim, S.; et al.; Flake, J. Anion Exchange Membrane Transport and Accelerated Lifetime Testing of Membrane Electrode Assembly Cells for the Electrochemical Reduction of CO_2-to-C2 Products. Journal of The Electrochemical Society 2025, 172 (9), 094509.

8. Minnie, I.; Kim, H. K.; Flake, J.; Liu, D. Intermittent CO_2 electrolysis needs its time in the sun. Chem Catalysis 2025, 5 (1).

9. Noor, S. B.; Hendershot, J. C.; Kizilkaya, O.; Flake, J.; Sprunger, P. T. Precipitation and Binder Effectiveness in the Electrochemical Reduction of CO_2 at Cu Electrocatalysts in Zero-Gap MEA Cells. Electrochimica Acta 2025, 146559.

10. Park, J.; Dauda, M.; Bello, M.; et al.; Flake, J. C. Fundamental Insights into Copper-Epoxy Interfaces for High-Frequency Chip-to-Chip Interconnects. ACS Applied Materials & Interfaces 2025, 17 (1), 2480–2490.

11. Dauda, M.; Hendershot, J.; Bello, M.; et al.; Flake, J. C. Activity and Selectivity in the Electrochemical Reduction of CO_2 at CuSnx Electrocatalysts Using a Zero-Gap Membrane Electrode Assembly. Journal of The Electrochemical Society 2024, 171 (8), 084503.

12. Dauda, M.; Hendershot, J.; Bello, M.; Park, J.; Orduz, A. L.; Lombardo, N.; Kizilkaya, O.; Sprunger, P.; Engler, A.; Plaisance, C.; Flake, J. C. Electrochemical reduction of CO_2: a common acetyl path to ethylene, ethanol or acetate. Journal of The Electrochemical Society 2024, 171 (3), 034501.

13. Park, J.; Xu, J.; Engler, A.; Williamson, J.; Mathew, V.; Park, S.; Flake, J. C. Extending Copper Interconnects and Epoxy Dielectrics to Multi-GHz Frequencies. IEEE Transactions on Components, Packaging and Manufacturing Technology 2024, 14 (6), 984–992.

14. Venugopalan, G.; Bhattacharya, D.; Andrews, E.; et al.; Flake, J.; Arges, C. G. Electrochemical Pumping for Challenging Hydrogen Separations. ACS Energy Letters 2022, 7 (4), 1322–1329.

15. McKay, F.; Fang, Y.; Kizilkaya, O.; et al.; Flake, J. C.; Shelton, W. A.; Xu, Y. CoCrFeNi High-Entropy Alloy as an Enhanced Hydrogen Evolution Catalyst in Acidic Solutions. The Journal of Physical Chemistry C 2021, 125 (31), 17008–17018.

16. Ofoegbuna, T.; Peterson, B.; da Silva Moura, N.; Nepal, R.; Kizilkaya, O.; Smith, C.; Jin, R.; Plaisance, C.; Flake, J. C.; Dorman, J. A. Modifying Metastable Sr1–xBO3−δ (B = Nb, Ta, and Mo) Perovskites for Electrode Materials. ACS Applied Materials & Interfaces 2021, 13 (25), 29788–29797.

17. Peterson, B. B.; Andrews, E. M.; Hung, F.; Flake, J. C. Carbonized metal-organic framework cathodes for secondary lithium-bromine batteries. Journal of Power Sources 2021, 492, 229658.

18. Xu, W.; Liu, C.; Ren, S.; Lee, D.; Gwon, J.; Flake, J. C.; Lei, T.; Baisakh, N.; Wu, Q. Cellulose Nanofibers-Polyacrylamide Hydrogel Based on Co Electrolyte System for Solid-State Zinc Ion Batteries to Operate at Extremely Cold Temperatures. Journal of Materials Chemistry A 2021.

19. Li, G.; Fang, Y.; Arges, C.; Plaisance, C.; Flake, J. Electrocatalytic Coupling of Methane at Platinum Oxide Electrodes in Superacids. Journal of The Electrochemical Society 2020, 167, 155503.

20. Abedin, R.; Shen, Y.; Flake, J. C.; Hung, F. R. Deep Eutectic Solvents Mixed with Fluorinated Refrigerants for Absorption Refrigeration: A Molecular Simulation Study. The Journal of Physical Chemistry B 2020, 124 (22), 4536–4550.

21. Fang, Y.; Cheng, X.; Flake, J. C.; Xu, Y. CO_2 electrochemical reduction at thiolate-modified bulk Au electrodes. Catalysis Science & Technology 2019.

22. Andrews, E.; Fang, Y.; Flake, J. Electrochemical reduction of CO_2 at CuAu nanoparticles: size and alloy effects. Journal of Applied Electrochemistry 2018, 48, 435–441.

23. Fang, Y.; Flake, J. Electrochemical Reduction of CO_2 at Functionalized Au Electrodes. Journal of the American Chemical Society 2017, 139 (9), 3399–3405.

24. Abedin, R.; Heidarian, S.; Flake, J.; Hung, F. Computational Evaluation of Mixtures of Hydrofluorocarbons and Deep Eutectic Solvents for Absorption Refrigeration Systems. Langmuir 2017, 33 (42), 11611–11625.

25. Andrews, E.; Flake, J. Electrocatalytic Reduction of CO_2 at Au Nanoparticle Electrodes: Effects of Interfacial Chemistry on Reduction Behavior. Journal of The Electrochemical Society 2015, 162 (12), F1373–F1378.

26. Qu, G.; Weinman, C. J.; Ghosh, T.; Flake, J. C. Nonaqueous Halide-Free Flux Reactions with Tin-Based Solders. Journal of Electronic Materials 2015.

27. Liang, T.; Cheng, Y.-T.; Nie, X.; Luo, W.; Asthagiri, A.; Janik, M. J.; Andrews, E.; Flake, J.; Sinnott, S. B. Molecular dynamics simulations of CO_2 reduction on Cu and Cu/ZnO using charge optimized many body potentials. Catalysis Communications 2014.

28. Spivey, J. J.; …; Flake, J. C.; et al. Synthesis, Characterization, and Computation of Catalysts at the Center for Atomic-Level Catalyst Design. The Journal of Physical Chemistry C 2014, 118 (35).

29. Luan, X.; Chen, L.; Zhang, J.; Qu, G.; Flake, J. C.; Wang, Y. Electrophoretic deposition of reduced graphene oxide nanosheets on TiO2 nanotube arrays for dye-sensitized solar cells. Electrochimica Acta 2013.

30. Andrews, E.; Ren, M.; Wang, F.; Zhang, Z.; Kurtz, R.; Sprunger, P.; Flake, J. Electrochemical Reduction of CO_2 at Cu Nanocluster / (10-10) ZnO Electrodes. Journal of The Electrochemical Society 2013, 160 (11).

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38. Xu, W.; Flake, J. C. Composite Silicon Nanowire Anodes for Secondary Lithium-Ion Cells. Journal of The Electrochemical Society 2010, 157 (1), A41–A45.

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ISSUED U.S. PATENTS

Inventor on 10 issued U.S. patents in interconnects, thin-film devices, semiconductor processing, and electrochemical reactors.

- US 11,591,699 B2 (February 28, 2023). Electrochemical reactor for upgrading methane and small alkanes to longer alkanes and alkenes (LSU).
- US 7,989,347 B2 (August 2, 2011). Process for filling recessed features in a dielectric substrate (Freescale Semiconductor).
- US 7,579,279 B2 (August 25, 2009). Method to passivate conductive surfaces during semiconductor processing (Freescale Semiconductor).
- US 7,456,105 B1 (November 25, 2008). CMP metal polishing slurry and process with reduced solids concentration (Advanced Micro Devices).
- US 7,387,970 B2 (June 17, 2008). Method of using an aqueous solution and composition thereof (Freescale Semiconductor).
- US 7,188,630 B2 (March 13, 2007). Method to passivate conductive surfaces during semiconductor processing (Freescale Semiconductor).
- US 7,001,498 B2 (February 21, 2006). Electroplating apparatus and four mask TFT array process with electroplated metal (IBM).
- US 6,866,791 B1 (March 15, 2005). Method of forming patterned nickel and doped nickel films via microcontact printing and uses thereof (IBM).
- US 6,620,719 B1 (September 16, 2003). Method of forming ohmic contacts using a self doping layer for thin-film transistors (IBM).
- US 6,495,005 B1 (December 17, 2002). Electroplating apparatus (IBM).

PROFESSIONAL SERVICE & LEADERSHIP

- **The Electrochemical Society:** Honors & Awards, Ways & Means, Dielectric Science & Technology, and Publications subcommittees; EFRC Young Fellows Mentor.
- **Symposia leadership:** Organizing Chair, ECS Interconnect Symposia (2008–2012); Organizing Co-Chair, 2016 ECS PRiME Meeting; Session Chair, ECS Interconnect and Electrocatalysis symposia.
- **Editorial / review:** Manuscript reviewer for Science, Nature, JACS, Langmuir, AIChE Journal, Journal of The Electrochemical Society, Journal of Power Sources, Catalysis Today, and other journals; proposal reviewer for NSF, DOE, and the Netherlands Organization for Scientific Research.
- **University service:** Chancellor’s Fellow Advisor; Chair, Materials Science Education and Cleanroom Committees; numerous college- and university-level search committees.
- **Louisiana Tech:** Member, Louisiana Tech Chemical Engineering Advisory Board (2022–present); review senior design projects, program metrics, and outcomes, and provide external guidance aligned with ABET accreditation criteria.

RESEARCH TRAINING & MENTORSHIP

Advised 24+ graduate students and postdoctoral researchers; alumni hold positions in industry (Intel, Micron, Dow, BASF, ExxonMobil, DuPont, Honeywell, SAFT, Hanwha) and academia.

Former Thesis Advisees & Postdoctoral Researchers

Researcher	Degree	Year	Current Position
J. Ngunjiri	Post-Doctoral	2008	DuPont
J. Bugayong	M.S.	2010	U. Nebraska
W. Xu	Ph.D.	2010	Professor
M. Le	M.S.	2011	ExxonMobil
P. Narayanan	Ph.D.	2012	Micron
S. Vegunta	Ph.D.	2012	Micron
J. Fussell	M.S.	2012	Honeywell
M. Ren	Post-Doctoral	2012	Dow Chemical
J. Nguyen	UG	2014	Dow Chemical
R. Gauthier	UG	2015	BASF
Y. Fang	Ph.D.	2017	Intel Corporation
E. Andrews	Ph.D.	2018	SAFT
G. Qu	Ph.D.	2018	Self-employed
B. Peterson	Ph.D.	2018	U. North Dakota
G. Li	Post-Doctoral	2019	Professor
J. Xu	Post-Doctoral	2024	Self-employed
R. Goncalves	Post-Doctoral	2025	Self-employed
J. Park	Ph.D.	2025	Hanwha

Current Advisees & Postdocs

Researcher	Degree	Expected
Cigdem Oral	Post-Doctoral	2028
Jing Xie	Post-Doctoral	2028
Monsuru Dauda	Ph.D.	2026
Ignace Agbadan	Ph.D.	2027
Elizabeth Oduyebo	Ph.D.	2028
Uche Eberechukwu	Ph.D.	2029
Ayo Moses	Ph.D.	2029
Nazanin Esmaeili	Ph.D.	2029
Lillian Odonkor-Teye	Ph.D.	2029