

Biographical Sketch
Dr. James Cale

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a. Professional Preparation

2001: **B.S.**, Electrical Engineering (*summa cum laude*), Missouri University of Science & Technology, Rolla, MO.

2003: **M.S.**, Electrical Engineering, Purdue University, West Lafayette, IN.

2007: **Ph.D.**, Electrical Engineering, Purdue University, West Lafayette, IN.

b. Appointments

07/2017–present: **Associate Professor**, Mechanical Engineering Department and Systems Engineering Program, CSU, Fort Collins, CO.

2011–2017: **Principal Engineer & Group Lead**, Integrated Devices & Systems Group, National Renewable Energy Laboratory (NREL), Golden, CO.

2010–2011: **Member of Technical Staff**, Photovoltaic Inverter Design Group, Advanced Energy Industries, Fort Collins, CO.

2007–2010: **Senior Electrical Engineer**, Research & Development Department, Orbital ATK, Independence, MO.

c. Products

1. J. Cale, E. Dall’Anese, B. Johnson, P. Young, G. Duggan, P. Bedge, D. Zimmerle, and L. Holton, “Mitigating communication delays in remotely connected hardware in the loop experiments,” *IEEE Transactions on Industrial Electronics*, 2018, (accepted, to appear).
2. B. Johnson, S. Dhople, J. Cale, A. Hamadeh, and P. Krein, “Oscillator-based inverter controls for islanded three-phase microgrids,” *IEEE Journal of Photovoltaics*, vol. 4, no. 1, pp. 387–395, 2014.
3. J. Cale, B. Palmintier, D. Narang, and K. Carroll, “Clustering distribution feeders in the Arizona Public Service territory,” in *Proceedings of the 40th IEEE Photovoltaic Specialist Conference (PVSC), 2014*, Denver, Colorado (USA), 2014, pp. 2076–2081.
4. P. Gotseff, J. Cale, M. Baggu, D. Narang, and K. Carroll, “Accurate power prediction of spatially distributed PV systems using localized irradiance measurements,” in *Proceedings of the Power and Energy Systems (PES) Conference, 2014 IEEE*, Washington, DC (USA), 2014, pp. 1–5.
5. J. Cale and D. Narang, “High-penetration PV deployment in the Arizona Public Service system, Phase 2 results and update on Phase 3,” in *Proceedings of the 39th IEEE Photovoltaic Specialist Conference (PVSC), 2013*, Tampa, Florida (USA), Jun. 2013, pp. 1711–1714.

Five other significant products:

1. J. Cale, E. Dall’Anese, B. Johnson, P. Young, L. Holton, and D. Zimmerle, “Mitigating latency errors in distributed systems,” U.S. Patent 2017/0 249 404 A1, Aug. 31, 2017.
2. J. Cale, S. Sudhoff, and J. Turner, “An improved magnetic characterization method for highly permeable materials,” *IEEE Transactions on Magnetics*, vol. 42, no. 8, pp. 1974–1981, Aug. 2006.
3. J. Cale, S. Sudhoff, and L. Tan, “Accurately modeling EI core inductors using a high-fidelity magnetic equivalent circuit approach,” *IEEE Transactions on Magnetics*, vol. 42, no. 1, pp. 40–46, Jan. 2006.
4. J. Cale, S. Sudhoff, and R. Chan, “A field-extrema hysteresis model for ferrimagnetic materials,” *IEEE Transactions on Magnetics*, vol. 44, no. 7, pp. 1728–1736, 2008.
5. J. Williams, J. Cale, N. Benavides, J. Wooldridge, A. Koenig, J. Tichenor, and S. Pekarek, “Versatile hardware and software tools for educating students in power electronics,” *IEEE Transactions on Education*, vol. 47, no. 4, pp. 436–445, Nov. 2004.

d. Synergistic Activities

1. **Society Activities:** i) Serve on international steering committee and local organizing committee (Americas Lead) for the international Microgrid Symposiums; ii) Senior member of IEEE, Power & Energy Society (PES), iii) member Tau Beta Pi, iv) member Colorado Renewable Energy Society (CRES).
2. **Invited speaker:** i) (Panel) Mass Adoption of Microgrids, Distributed Energy Conference, Denver, CO, (2018); ii) (Panel) Smart Grid Workshop, Texas A&M, (2015); iii) Power Systems Engineering Research Council (PSERC), Stevenson, WA (2015); iv) (Keynote) Clean Air Technologies and Energy Efficiency Conference, Dallas, TX (2014); v) Energy-Efficient Buildings Workshop, Fort Worth, TX (2014); vi) Microgrid Global Summit, Irvine, CA (2014); vii) Government & DoD Smart Grids & Alternative Energy Symposium, D.C. (2014).
3. **Accolades:** i) Prize Paper Award, IEEE Power and Energy Systems (PES) Conference 2014, ii) NREL Chairman’s Award (2014), iii) NREL President’s Award (2013).
4. **Editorial & Referee Duties:** i) Editor for the *IEEE Power and Energy Technology Systems Journal*; ii) referee for IEEE Transactions of Energy Conversion, IEEE Transactions on Sustainable Energy.
5. **Teaching:** i) Designed and taught graduate course at CSU on coupled electro-mechanical systems; ii) delivered a graduate course in engineering risk analysis (with applied probability), iii) delivered a graduate course in systems engineering processes and analysis (with queueing theory and Monte Carlo methods).