

EDUCATION

UNIVERSITY OF CALIFORNIA AT BERKELEY	DEC 2005
Ph.D. in Mechanical Engineering <i>Dissertation:</i> Flame Structure and Soot Formation in Inverse Diffusion Flames <i>Major:</i> Combustion. <i>Minors:</i> Fluid Mechanics and Air Quality <i>Advisor:</i> Professor A.C. Fernandez-Pello	
UNIVERSITY OF CALIFORNIA AT BERKELEY	MAY 2004
M.S. in Mechanical Engineering	
SAN FRANCISCO STATE UNIVERSITY	APR 1997
California Teaching Credential for Physics and Mathematics, <i>U.S. Peace Corps Fellow</i>	
BOSTON UNIVERSITY	MAY 1993
B.S. in Mechanical Engineering, <i>Cum Laude</i>	

PROFESSIONAL EXPERIENCE

PRODUCT MANAGER & MODELING SPECIALIST FOR SOLARFARMER <u>DNV GL, Oakland CA</u>	2017 – PRESENT
Lead product development of PV system performance model. Listen to and support customers. Plan and execute roadmap. Make forecasts and business plans. Create marketing, develop pipeline, and generate sales. Implement and validate algorithms. Write, debug, and review code. Present at conferences and publish in journals. Recruit and manage teammates. Organize backlog, sprints, and releases. Work cross organizationally to architect and adopt workflows and new technology. Coordinate with leadership and internal stakeholders to eliminate redundancy and digitalize processes and products. Partner with industry leaders to increase synergy.	
SENIOR STAFF RELIABILITY/PERFORMANCE ENGINEER <u>SunPower Corp., Richmond CA</u>	2010 – 2017
Develop models to predict energy and degradation of PV systems; conduct research on irradiance, cell, module and inverter performance; design software applications on various platforms, setup servers, databases, CI and SCM repositories, manage and organize projects and co-workers, present at conferences.	
SENIOR RESEARCHER, MODELING & PERFORMANCE <u>AREVA Solar (formerly Ausra), Mountain View CA</u>	2007 – 2010
Developed and validated dynamic multi-physics models for design and operation of direct steam solar thermal power system. Modeled solar thermal concentrating optics, heat losses, two-phase thermodynamics and fluid mechanics, and thermal storage systems. Analyzed performance tests.	
APPLICATIONS ENGINEER, HARDWARE <u>Pinnacle Technologies, San Francisco, CA</u>	1999 – 2000
Modified, assembled and repaired tiltmeter hardware for real-time monitoring of secondary recovery operations and subsidence in oilfields, as well as for detection of earthquake, landslide and volcanic activity. Developed prototypes and conducted testing for tiltmeter hardware development.	

RESEARCH EXPERIENCE

POST-DOCTORAL RESEARCHER 2006

University of California at Berkeley, Combustion Processes Laboratory

Researched fluidized catalytic nano-particle reactor for environmentally clean power generation.

GRADUATE STUDENT RESEARCHER 2000 – 2005

University of California at Berkeley, Microgravity Combustion Laboratory

Conducted experiments on and simulations of methane and ethylene inverse diffusion flames in normal-gravity and micro-gravity to study the formation of soot and carbon monoxide in underventilated fires. Mapped temperature with thermocouples. Sampled and analyzed CO and soot emissions. Measured radiant emission with radiometer. Used laser diagnostics to obtain species profiles. Project sponsored by NASA in collaboration with NIST and Sandia National Laboratory.

TEACHING EXPERIENCE

PHYSICS TEACHER 2006 – 2007

Lighthouse Community Charter High School, Oakland, CA

Started science department at new high school serving inner city students of mostly Hispanic background. Developed physics curriculum using expeditionary learning and standards based models.

GRADUATE STUDENT INSTRUCTOR 2002 – 2004

University of California at Berkeley, Department of Mechanical Engineering

Conducted discussions for undergraduate thermodynamics and heat transfer courses and corrected exams. Led laboratory section for undergraduate combustion course and corrected exams

ADJUNCT INSTRUCTOR 2004

University of California at Berkeley, Student Learning Center

Developed and taught lessons for undergraduate calculus adjunct course, corrected and graded exams.

MATH, PHYSICS, & GENERAL SCIENCE TEACHER 1997-1999

McAteer High School, S.F.U.S.D., San Francisco, CA

Created lessons meeting district standards and appealing to at-risk youth. Served as treasurer for Staff Development Committee.

MATH & PHYSICS TEACHER 1994 – 1996

United States Peace Corps/Tanzania (East Africa)

Taught high school math and physics to second language learners in English and Swahili. Organized health education for students and teachers. Led two successful student trips to summit Mt. Kilimanjaro.

COMPUTERS & CODE

LANGUAGES: Python, MATLAB, C/C++, C#, Java, FORTRAN, HTML, CSS, JS, SQL

PLATFORMS: Linux, Windows, Mac OS X, AWS, Azure, Heroku, PostgreSQL, MySQL, MSSQL, Git, Jupyter

OPEN SOURCE: SunPower [pvmismatch](#) (286), [pvlib](#) (44), [scipy](#) (115), NREL [rdtools](#) (6), [bifacialvf](#) (15)

PUBLICATIONS & CONFERENCE PRESENTATIONS

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SCOPUS ID: [6504156228](https://scopus.com/authorid/6504156228)

PUBLICATIONS

- W. F. Holmgren, C. W. Hansen, and M. A. Mikofski, “**pvlb python: a python package for modeling solar energy systems**,” *J. Open Source Softw.*, vol. 3, no. 29, p. 884, Sep. 2018. DOI: [10.21105/joss.00884](https://doi.org/10.21105/joss.00884)
- M. A. Mikofski, T. C. Williams, C. R. Shaddix, and L. G. Blevins, “**Flame height measurement of laminar inverse diffusion flames**,” *Combust. Flame*, vol. 146, no. 1–2, pp. 63–72, 2006. DOI: [10.1016/j.combustflame.2006.04.006](https://doi.org/10.1016/j.combustflame.2006.04.006)
- M. A. Mikofski, T. C. Williams, C. R. Shaddix, A. C. Fernandez-Pello, and L. G. Blevins, “**Structure of laminar sooting inverse diffusion flames**,” *Combust. Flame*, vol. 149, no. 4, pp. 463–478, Jun. 2007. DOI: [10.1016/j.combustflame.2007.01.006](https://doi.org/10.1016/j.combustflame.2007.01.006)

CONFERENCE PRESENTATIONS & POSTERS

- M. A. Mikofski, R. Darawali, M. Hamer, A. Neubert, and J. Newmiller, “**Bifacial Performance Modeling in Large Arrays**,” in *2019 IEEE 46th Photovoltaic Specialist Conference (PVSC)*. DOI: [10.1109/PVSC40753.2019.8980572](https://doi.org/10.1109/PVSC40753.2019.8980572)
- W. F. Holmgren, C. W. Hansen, J. S. Stein, and M. A. Mikofski, “**Review of Open Source Tools for PV Modeling**,” in *2018 IEEE 7th World Conference on Photovoltaic Energy Conversion (WCPEC) (A Joint Conference of 45th IEEE PVSC, 28th PVSEC & 34th EU PVSEC)*, 2018, pp. 2557–2560. DOI: [10.1109/PVSC.2018.8548231](https://doi.org/10.1109/PVSC.2018.8548231)
- M. A. Mikofski, *et al.*, “**Accurate Performance Predictions of Large PV Systems with Shading using Submodule Mismatch Calculation**,” in *2018 IEEE 7th World Conference on Photovoltaic Energy Conversion (WCPEC) (A Joint Conference of 45th IEEE PVSC, 28th PVSEC & 34th EU PVSEC)*, 2018, pp. 3635–3639. DOI: [10.1109/PVSC.2018.8547323](https://doi.org/10.1109/PVSC.2018.8547323)
- M. A. Mikofski, C. W. Hansen, W. F. Holmgren, and G. M. Kimball, “**Use of measured aerosol optical depth and precipitable water to model clear sky irradiance**,” in *2017 IEEE 44th Photovoltaic Specialist Conference (PVSC)*, 2017, no. July, pp. 110–116. DOI: [10.1109/PVSC.2017.8366314](https://doi.org/10.1109/PVSC.2017.8366314)
- B. Meyers and M. Mikofski, “**Accurate Modeling of Partially Shaded PV Arrays**,” in *2017 IEEE 44th Photovoltaic Specialist Conference (PVSC)*, 2017, pp. 3354–3359. DOI: [10.1109/PVSC.2017.8521559](https://doi.org/10.1109/PVSC.2017.8521559)
- M. Mikofski, A. Oumbe, C. Li, and B. Bourne, “**Evaluation and correction of the impact of spectral variation of irradiance on PV performance**,” in *2016 IEEE 43rd Photovoltaic Specialists Conference (PVSC)*, 2016, pp. 1357–1362. DOI: [10.1109/PVSC.2016.7749837](https://doi.org/10.1109/PVSC.2016.7749837)
- B. Meyers, M. Mikofski, and M. Anderson, “**A fast parameterized model for predicting PV system performance under partial shade conditions**,” in *2016 IEEE 43rd Photovoltaic Specialists Conference (PVSC)*, 2016, pp. 3173–3178. DOI: [10.1109/PVSC.2016.7750251](https://doi.org/10.1109/PVSC.2016.7750251)
- E. Hasselbrink *et al.*, “**Validation of the PVLife model using 3 million module-years of live site data**,” in *2013 IEEE 39th Photovoltaic Specialists Conference (PVSC)*, 2013, pp. 7–12. DOI: [10.1109/PVSC.2013.6744087](https://doi.org/10.1109/PVSC.2013.6744087)
- M. A. Mikofski *et al.*, “**PVLife: An Integrated Model for Predicting PV Performance Degradation over 25+ Years**,” in *2012 38th IEEE Photovoltaic Specialists Conference*, 2012, no. 3, pp. 1744–1749. DOI: [10.1109/PVSC.2012.6317932](https://doi.org/10.1109/PVSC.2012.6317932)
- M. Mikofski *et al.*, “**A Dynamic Cell-By-Cell PV System Model to Predict Lifetime Performance and Reliability**,” in *26th European Photovoltaic Solar Energy Conference and Exhibition*, 2011, pp. 105–112. DOI: [10.4229/26thEUPVSEC2011-1BO.10.1](https://doi.org/10.4229/26thEUPVSEC2011-1BO.10.1)

- K. T. Macko, M. A. Mikofski, A. C. Fernandez-Pello, L. G. Blevins, and R. W. Davis, “**Laser extinction in laminar inverse diffusion flames**,” in *Fall Technical Meeting of the Western States Section of the Combustion Institute 2005, WSS/CI 2005 Fall Meeting*, 2005, vol. 2. <https://escholarship.org/uc/item/5xq8441t>
- M. A. Mikofski, L. G. Blevins, T. C. Williams, and C. R. Shaddix, “**Effect of varied air flow on flame structure of laminar inverse diffusion flames**,” in *30th International Symposium on Combustion, Abstracts of Works-in-Progress Posters*, 2004.
- M. A. Mikofski, T. C. Williams, C. R. Shaddix, and L. G. Blevins, “**Effect of Varied Air Flow on Flame Structure of Laminar Inverse Diffusion Flames**,” in *Western States Section/Combustion Institute 2004 Spring Meeting*, 2004. <https://escholarship.org/uc/item/7fg575cm>
- M. A. Mikofski, L. G. Blevins, R. W. Davis, E. F. Moore, and G. W. Mulholland, “**COSMIC: Carbon Monoxide and Soot in Microgravity Inverse Combustion**,” in *7th International Workshop on Microgravity Combustion and Chemically Reacting Systems*, 2003. <https://escholarship.org/uc/item/7xb9t2gk>
- L. G. Blevins, N. Y. C. Yang, M. A. Mikofski, G. W. Mulholland, and R. W. Davis, “**Alteration of early soot pathways using microgravity**,” in *41st Aerospace Sciences Meeting and Exhibit*, 2003. DOI: [10.2514/6.2003-985](https://doi.org/10.2514/6.2003-985)