MARK ALEXANDER MIKOFSKI

506 Mira Vista Ave., Oakland, CA 94610
(510) 862-6891 [cell]
mikofski@berkeley.edu

EDUCATION

UNIVERSITY OF CALIFORNIA AT BERKELEY   DEC 2005
Ph.D. in Mechanical Engineering
Dissertation: Flame Structure and Soot Formation in Inverse Diffusion Flames
Major: Combustion. *Minors:* Fluid Mechanics and Air Quality
Advisor: 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, *U.S. Peace Corps Fellow*

BOSTON UNIVERSITY   MAY 1993
B.S. in Mechanical Engineering, *Cum Laude*

PROFESSIONAL EXPERIENCE

MODELING SPECIALIST   2017 – PRESENT
DNV GL, Oakland CA
Participate in product development of PV system performance model. Validate models against site measurements and other PV system performance models. Present and publish at conferences. Research, develop, and implement algorithms and sub-models. Work with customers to organize product roadmap.

SENIOR STAFF RELIABILITY/PERFORMANCE ENGINEER   2010 – 2017
SunPower Corp., Richmond CA
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   2007 – 2010
AREVA Solar (formerly Ausra), Mountain View CA
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   1999 – 2000
Pinnacle Technologies, San Francisco, CA
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.

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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, AND 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 AND 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.

PROGRAMMING & MODELING PROFICIENCY

PYTHON, MATLAB, C/C++, C#, JAVA, FORTRAN, HTML, CSS, JS, SQL

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OPEN SOURCE

- [PVLIB-Python](#) - Software for simulating photovoltaic solar energy systems.

PUBLICATIONS AND CONFERENCE PRESENTATIONS

PUBLICATIONS
- Holmgren, W; *et al*; **pvlib python: a python package for modeling solar energy systems**, The Journal of Open Source Software 3(29):884, 2018
- Mikofski, M.A.; Williams, T.C.; Shaddix, C.R.; Blevins, L.G.; **Flame Height Measurement of Laminar Inverse Diffusion Flames**, Combust. Flame, 2006.
- Mikofski, M.A.; Williams, T.C.; Shaddix, C.R.; Fernandez-Pello, A.C.; Blevins, L.G.; **Structure of Laminar Sooting Inverse Diffusion Flames**, Combust. Flame, 2007.

CONFERENCE PRESENTATIONS AND POSTERS
- Mikofski, M; *et al*; **Use of Measured Aerosol Optical Depth and Precipitable Water to Model Clear Sky Irradiance**, 44th IEEE PVSC 2017
- Meyers, B; *et al*; **Accurate Modeling of Partially Shaded PV Arrays**, 44th IEEE PVSC 2017
- Mikofski, M.; *et al*; **Evaluation and correction of the impact of spectral variation of irradiance on PV performance**, 43rd IEEE PVSC 2016
- Meyers, B.; *et al*; **A fast parameterized model for predicting PV system performance under partial shade conditions**, 43rd IEEE PVSC 2016
- Hasselbrink, E.; *et al*; **Validation of the PVLife model using 3 million module-years of live site data**, 39th IEEE PVSC, 2013
- Mikofski, M.; *et al*.; **PVLife: An integrated model for predicting PV performance degradation over 25+ years**, 38th IEEE PVSC, 2012
- Mikofski, M; Anderson, M.; Caldwell, S.; DeGraaff, D.; Hasselbrink, E.; Kavulak, D.; Lacerda, R.; Okawa, D.; Shen, Y.C.; Tedjasaputra, A.; Terao, A.; Xie, Z.; **A Dynamic Cell-by-Cell PV System Model to Predict Lifetime Performance and Reliability**, 26th EUPVSEC, 2011
- Macko, K.T.; Mikofski, M.A.; Fernandez-Pello, A.C.; Blevins, L.G.; Davis, R.W.; **Laser Extinction in Laminar Inverse Diffusion Flames**, Western States Section of the Comb. Inst., Fall Meeting, October 2005.
- Mikofski, M.A.; Blevins, L.G.; Shaddix, C.R.; Williams, T.C.; **Effect of Varied Air Flow on Flame Structure of Laminar Inverse Diffusion Flames**, work in progress poster (WIPP) at the 30th Proc. of the Comb. Inst., July 2004.
- Mikofski, M.A.; Blevins, L.G.; Shaddix, C.R.; Williams, T.C.; **Effect of Varied Air Flow on Flame Structure of Laminar Inverse Diffusion Flames**, Western States Section of the Comb. Inst., Spring Meeting, March 2004.
- Mikofski, M.A.; Blevins, L.G.; Davis, R.W.; Moore, E.F.; Mulholland, G.W.; **COSMIC: Carbon Monoxide and Soot in Microgravity Inverse Combustion**, 7th International Workshop on Microgravity Combustion and Chemically Reacting Systems, June 2003.
- Blevins, L.G.; Yang, N.Y.C.; Mikofski, M.A.; Mulholland, G.W.; Davis, R.W.; **Alteration of Early Soot Pathways Using Microgravity**, Proc. of the 41st Aerospace Sciences Meeting & Exhibit, Amer. Inst. of Aero. & Astro., January 2003.