

Nicholas P. Carter, PhD, GRSM, LRAM
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PV SYSTEM ENGINEER

Interdisciplinary innovator and entrepreneurially minded professional with extensive experience in all roles with a wide variety of PV system installations nationwide. Electric vehicle advocate and practitioner with a passion for growing alternative energy solutions that are good for business and the environment. Skilled at relaying technical information, including public speaking, using readily understandable terminology. Adept at cross-functional training and collaboration that drives innovation and achieves exceptional results.

Technical Areas of Expertise:

NABCEP-certified PV Installer since 2007 (valid until October 2016)

NYSERDA Eligible Installer (New York)

Contributor to NFPA-70 NEC 2014 – 690.31(D) Multi-Conductor Cable

Holder of US Patent #8,635,773 - *Systems and methods of installing photovoltaic modules*

Software developer (C, C++, BASIC, Machine Code) and user (AutoCAD, PowerPoint, Excel, Word, etc.)

“Nicholas has a sense of reason and wisdom about the solar industry that is a credit to his breadth of experience . . . he never hesitated to support us and his feedback was invaluable. I have complete faith that Nick will always bring confidence and a peace of mind to anyone relying on him.”

David Gustafson, CTO, MiniJoule

“Dr. Nicholas is an Instructor with deep knowledge and an extensive vocabulary. I highly recommend him.”

Leo Ortiz, Secretary of the Corp., Cal-Power

PROFESSIONAL EXPERIENCE

NPC SOLAR

2006 – PRESENT

Founder & Owner

New product development, Video presentation, Commercial PV system design, PV training curriculum development and delivery ~ clients including: LG Solar, Kaco, QuickmountPV, Montante Solar (NY), Solar Living Institute, Pacific Technical College, Solano Community College, Green Build Energy Group, Enecsys, SaveALot Solar and Siliken.

- New product development consulting (LG ACe AC PV module, QuickmountPV QuickRack, Kaceo Ultraverter).
- Design commercial PV systems in the 20kW-1MW range and act as customer liaison for clients.
- Develop and deliver PV and PV+EV training curriculum.
- Mentor solar trainees and prepare them for NABCEP entry-level exams.
- Create hands-on technical PV training exercises.
- Contribute to development of 3rd-party solar design with AutoCAD training course.
- Consult on the principles of Levelized Cost of Electricity (LCOE) modeling.
- Create timesheets / invoices and manage sub-contractors.
- Personally built multiple complete company websites in HTML, including e-commerce.

ENECSYS

2011 – 2012

Applications Engineer

Solar micro inverter manufacturer spun-off from Cambridge University (UK). Customer-facing member of the product management team. Ensured compliance with current and upcoming requirements of regulatory bodies. Developed white papers and customer training material. Delivered online training and created software tools to support management, sales and customer support engineers.

- Developed Excel-based LCOE model and BoS configurator for use by product management and sales.
- Created and maintained competitor spreadsheet to assist management with analyzing market position and to help determine product development game plan.
- Designed, implemented, maintained and re-configured company test site consisting of 34.38kW 144-module test site at PV Evolution Labs in Davis, CA.
- Liaised with PV Evolution Labs and Locus Energy regarding micro inverter testing and data acquisition.
- Provided management reports concerning troubleshooting and data analysis from test and beta sites.
- Performed micro inverter field installations and customer training in CA and HI.

PROFESSIONAL EXPERIENCE – Cont.

SOLARSTAFFING / GREEN CAREER INSTITUTE

2008 – 2009

Vice President, Training & Education / Director, Curriculum Development Solar

Developed & delivered 5-day training course to over 1,000+ trainees including PV system installers, designers and salespeople. Developed visiting speaker program for industry representatives and fostered company sustainability policy. Acted as company liaison with Employment Development offices throughout Northern California. Hired PV trainers, developed and delivered the “Train the Trainer” process in multiple locations across California (trainers are now employed by SMA, ZEP and Inter-Island Solar Supply).

- Co-wrote 94-page course training guide on solar fundamentals, PV design theory, module installation and energy conservation.
- Designed hands-on exercises for PV installation including DMM familiarity, installation of multiple rail types and assembly of a complete functioning 3-module PV system with a string inverter installed on a mock-roof.
- Developed visiting speaker program involving industry representatives
- Acted as company liaison with Employment Development offices throughout Northern California.
- Built relationships with numerous manufacturers in order to procure sample equipment for the classroom.
- Created multiple training classrooms, including sample equipment, display material and training exercises.
- Recruited potential licensees of the PV training program.
- Initiated development of training course for electric vehicles.
- Mentored student trainees and fostered company sustainability policy.

NORTH BAY SOLAR ELECTRIC, DILLON BEACH, CA

2002 – 2005

Solar Electric System Designer & Installer

- Responsibilities included PV system installation, design, sales, troubleshooting and permit processing for over 40 systems in the North San Francisco Bay Area.

OPUS TECHNOLOGIES, SAN DIEGO, CA

2000 – 2001

Software Engineering Consultant

- Development of Braille music software in ‘C’ under Windows.

FOUNDER & OWNER, NPC IMAGING

1998 – Present

- Responsible for all aspects of product development, marketing, production, website development and order fulfillment with over thirteen years of online sales to customers in 54 countries.

OPUS TECHNOLOGIES, SAN DIEGO, CA

1997 – 1999

Senior Software Engineer

- Design and development of Braille music software in ‘C’ under Window

UNIVERSITY OF SURREY, ENGLAND

1996 – 1997

Senior Research Fellow, Physics and Music Departments

- Research and development of printed music score recognition software in ‘C’ under Windows

RENEWABLE ENERGY CERTIFICATES AND COURSES

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| ACPV Modules and Systems, Ontility and SolarBridge Technologies | 2013 |
| The Enphase Microinverter System, Enphase Energy | 2013 |
| Best Practices with Racking and Risk Mitigation, Unirac | 2013 |
| Solar Roofing Best Practices, QuickMount PV | 2013 |
| Solar Roofing Best Practices - Residential Tile Roofs, QuickMount PV | 2012 |
| Photovoltaic Power Systems and the National Electrical Code, John Wiles | 2011 |
| Solectria Renewables Commercial 3 phase and Residential PV Inverter Installer Training | 2008 |
| Photovoltaic Power Systems and the National Electrical Code (John Wiles) | 2008 |
| Kaco New Energy - Grid tied PV Inverter Installation & Safety Training | 2008 |
| SMA America PV Technical Training | 2007 |
| NABCEP Certified PV Installer (#092907-47) | 2007 |
| Sharp Solar Certified Installer (#20070050003) | 2007 |

DEGREES AND QUALIFICATIONS / ACTIVITIES LECTURES & PRESENTATIONS

Doctor of Philosophy, Physics and Music Departments, University of Surrey, England

Thesis Title – “Automatic Recognition of Printed Music in the Context of Electronic Publishing”

Graduate of the Royal Schools of Music with Honors, Royal Academy of Music, London, England

Licentiate of the Royal Academy of Music, (Flute Teacher), London, England

National Board Member, Electric Auto Association (www.eaaev.org) 2004 – 2006

- Participated in board meetings and assisted in development of public awareness of electric drive transportation.

President and Program Director, North San Francisco Bay Chapter, Electric Auto Association 2002 – 2006

- Responsible for organizing monthly speakers, growing public EV charging infrastructure and educational events regarding electric vehicles

Organizer, ASES Solar homes tour, Sonoma County

Coordinator, Kyoto Day Celebrations, Sonoma County

Participant / Speaker at numerous “Green” exhibitions and festivals including Environmental Forum of Marin,

American Lung Association Events, Agilent Earth Day, Health and Harmony Fair, ASES Solar Homes Tour, Calpine Earth Day, Kaiser Permanente Earth Day, etc., sustainable lifestyle and renewable energy seminars.

Go Solar & Drive Electric, presentation to EcoGreen Group of Silicon Valley

PV+EV, Live-to-Tape TV Recording for Silicon Valley Technology, Art, Green and Sustainability, TV / Cable show

Guest Speaker for showing of movie “Who Killed the Electric Car” by Sonoma County Conservation Action

Interview with Curtis Kim from KFTY re: Governor Schwarzenegger’s State of the State address

Sustainable Living and Renewable Energy, Sunday Symposium at Oakmont

News Interview regarding PV and EVs, KFTY News Channel 50

Seminars on Electric Vehicles, Santa Rosa Junior College, Santa Rosa, CA

PUBLICATIONS

Complete list available on request, including 3 book chapters, a conference presentation (“The Effect of Temperature on the Operation of Micro Inverters”, WREF2012 Denver, CO), 2 conference papers, 4 journal papers, a Stanford University report, a journal review, a journal report and a PhD thesis.