



# OUR POSTDOCS

## National Renewable Energy Laboratory (NREL) Postdoctoral Profiles

Click on an individual to be taken to his/her profile.

- [S M Shafiul Alam](#) Electrical Engineering
- [Antonella \(Lilly\) Amore](#) Industrial Biotechnology
- [Nicholas C. Anderson](#) Chemistry
- [Jennifer Annoni](#) Aerospace Engineering and Mechanics
- [Elisabetta Arca](#) Physics
- [Dylan Arias](#) Physical Chemistry, Photophysics and Photochemistry
- [Koenraad Beckers](#) Chemical Engineering
- [Eric E. Benson](#) Inorganic Chemistry, Materials Science
- [Vivek S. Bharadwaj](#) Chemical Engineering, Molecular Simulations
- [Noah Bronstein](#) Physical Chemistry
- [Melissa Cano](#) Microbiology, Vegetal Biology and Biotechnologies
- [Lei Cao](#) Materials Science and Engineering, Battery and Fuel Cells
- [Jason M. Christ](#) Chemistry/Electrochemistry
- [Jeffrey Christians](#) Chemical and Biomolecular Engineering, Materials Science
- [Eric Colegrove](#) Physics, Semiconductor Materials and Devices
- [Mirjana Dimitrievska](#) Physics, Materials Science, Materials Characterization
- [Todd Eaton](#) Chemical Engineering, Heterogeneous Catalysis
- [Annika Eberle](#) Mechanical Engineering
- [Emily F. Freed](#) Genetics, Strain Engineering for Biofuels
- [Lauren Garten](#) Material Science
- [Srinivas K. Guntur](#) Mechanical Engineering, Wind Turbine Aerodynamics
- [Rachelle Ihly](#) Physical/Analytical Chemistry, Materials Science
- [Nikhil Jain](#) Electrical Engineering, Semiconductor Materials & Devices
- [Lahiru Jayakody](#) Bioscience and Biotechnology
- [Søren A. Jensen](#) Physics, Optical Characterization of Photovoltaic Materials
- [Zhen Li](#) Material Science and Engineering, Photovoltaic Materials



# OUR POSTDOCS

- [Chien-Yuan \(Kevin\) Lin](#) Forestry, Plant Genetics Engineering
- [Jonathan Lo](#) Molecular Biology, Metabolic Engineering
- [Joan G. Marcano](#) Biochemistry – RNA Structural Biology
- [Leonardo Micheli](#) Renewable Energy, Photovoltaics Model and Development
- [John Moseley](#) Materials Science, Electron Microscopy-based Characterization
- [Jennifer F. Newman](#) Meteorology, Wind Resource Assessment
- [Sandra Notonier](#) Biocatalysis
- [Jaehong Park](#) Physical Chemistry, Laser Spectroscopy
- [Kwangwook Park](#) Optoelectronics, III-V/II-VI semiconductor epitaxy growth
- [Eliot W. Quon](#) Aerospace Engineering, Numerical Methods
- [Nicholas A. Rorrer](#) Chemical Engineering, Polymer Chemistry and Physics
- [Asad H. Sahir](#) Chemical Engineering, Process Research & Development
- [Peter C. St. John](#) Chemical Engineering, Systems Biology
- [Violeta Sànchez i Nogué](#) Chemical Engineering, Biotechnology
- [Manuel Schnabel](#) Materials Science, Photovoltaics and Thin Film Characterization
- [Kevin Schulte](#) Chemical Engineering, III-V Materials Growth & Characterization
- [Philip Schulz](#) Physics, Organic and Hybrid Electronics
- [Latha Sethuraman](#) Electrical and Electronics Engineering
- [Sebastian Siol](#) Materials Science, Materials Synthesis & Characterization
- [Brady Stoll](#) Mechanical Engineering, Power Systems Modeling
- [Nathan M. Tom](#) Mechanical Engineering, Ocean Environments
- [Francois Usseglio-Viretta](#) Microstructure Characterization, Mechanics & Electrochemistry
- [Kurt M. Van Allsburg](#) Chemistry, Artificial Photosynthesis
- [Josh Vermaas](#) Biophysics and Computational Biology
- [Derek Vigil-Fowler](#) Physics, Theoretical Materials Science
- [Ganesh Vijayakumar](#) Mechanical Engineering, Atmospheric Boundary Layers and Wind Turbine Aerodynamics
- [Bo Wang](#) Biological Design, Metabolic Engineering
- [Qin Wang](#) Electrical Engineering, Power Systems Engineering Center



# OUR POSTDOCS

- [Lance M. Wheeler](#) Materials Synthesis & Characterization
- [James B. Whitaker](#) Inorganic Chemistry
- [Nolan Wilson](#) Chemical Engineering, Polymer Chemistry and Transport
- [Mengjin Yang](#) Materials Science and Engineering
- [Ye Yang](#) Physical Chemistry, Time Resolved Laser Spectroscopy
- [James L. Young](#) Materials Science and Engineering
- [Ruoran Zhang](#) Macromolecular Science and Engineering
- [Lei Zhu](#) Transportation Engineering



# OUR POSTDOCS

## **S M Shafiul Alam, PhD in Electrical Engineering, Power Systems Engineering Center**

- Expertise in statistical signal processing, compressed sensing, state estimation, and control for distributed high PV penetration power systems, wireless communications
- Developed agent-based estimation (static and dynamic) and control mechanisms with fundamental results on system stability criteria incorporating the effect of inter-agent communication
- Published in eight peer-reviewed journals, nine conference proceedings

LinkedIn Profile: <https://www.linkedin.com/in/smshafiulalam/>

## **Antonella (Lilly) Amore, PhD in Industrial Biotechnology; Enzymes Development for Biomass Conversion**

- Expert in: 1) recombinant expression/characterization of enzymes, 2) design/study of random/site-directed mutant enzymes, and 3) high-throughput screening of large libraries (directed evolved mutants/Metagenomics libraries)
- Expert in the discovery of new enzymes through: 1) Isolation and characterization of novel microorganisms (bacteria/fungi) and 2) Metagenomics approach
- Author of more than 20 scientific peer-reviewed papers and chapters in books; involved in multi-disciplinary projects, with mediating and intercultural skills; occasionally involved in teaching, and interested in life/team coaching

LinkedIn profile: <https://www.linkedin.com/in/antonella-lilly-amore-23280142>

## **Nicholas C. Anderson, PhD in Chemistry (Columbia University w/ Jonathan Owen)**

- Surface chemistry of metal chalcogenide (II-,IV-VI) nanocrystals with application towards other classes of nanocrystals (Group IV, III-V, and “perovskites”)
- Photoelectrochemistry techniques with emphasis on proton reduction and water oxidation for solar fuels production; fabrication, and chemical treatment of photoelectrodes
- Expert in air-free schlenk line and glove box technique; electronic, vibrational, and nuclear magnetic resonance spectroscopies; experience mentoring undergraduate and graduate students and starting an academic laboratory

LinkedIn profile: <https://www.linkedin.com/in/nicholas-anderson-2b592612>

## **Jennifer Annoni, PhD in Aerospace Engineering and Mechanics**

- Expertise in control systems, flow control, system identification, and reduced-order modeling with application to wind farm control; specific work done on mode decomposition, optimal estimation and control, robust control, and energy policy
- Multidisciplinary research spanning engineering and policy; programming knowledge in Matlab, Python, Fortran, C++, LabVIEW, Visual Basic, and PLC; consulted for a small wind energy startup; mentored undergraduate students and volunteered to teach science and math curriculum to underserved middle school students; pursuing pilot’s license
- Authored 10 scientific papers; presented at a variety of conferences including controls, fluid dynamics, and energy policy
- Enjoys all things outdoors and challenging the limits

LinkedIn Profile: <https://www.linkedin.com/in/jennifer-annoni-621b9a5a?trk>



# OUR POSTDOCS

## **Elisabetta Arca, PhD in Physics (Trinity College, Dublin).**

- Currently working on high-throughput combinatorial synthesis and characterization of new inorganic semiconductors for photovoltaic applications
- Expertise in: synthesis of semiconducting materials both in bulk and thin films form (MBE, PLD, Sputtering, Spray Pyrolysis, Solid State Reactions, Colloidal chemistry). Semiconductor characterization: XRD, XPS/UPS, UV-Visible Spectroscopy, Ellipsometry, DC Electrical characterization/Hall Effect, SEM, EDX. Device fabrication (clean room expertise). Comparison of experimental results with theoretical (DFT) calculations.
- Awards/proposal: 2014- SFI Advance Award (personal fellowship – 2 year project); 2016 – SFI Industry Fellowship (1 year project, declined to take position at NREL)

LinkedIn profile: <https://ie.linkedin.com/in/elisabetta-arca-72a62a6a>

## **Dylan Arias, PhD in Physical Chemistry, Photophysics and Photochemistry**

- Expert in ultrafast spectroscopy and photophysics, optics, organic semiconductor thin film deposition and characterization
- Mentored graduate and undergraduate students in research and classes; wrote proposals; designed and implemented collaborative research projects; Matlab, IgorPro, and Labview programming experience
- Authored six publications; oral and poster presentations at conferences

LinkedIn profile: <https://www.linkedin.com/in/dylan-arias-49531932>

## **Koenraad Beckers, PhD in Chemical Engineering**

- Expertise and research interests: heat and mass transfer, two-phase flow, thermodynamics, energy conversion systems, hybrid systems, techno-economic analysis, geothermal reservoir modeling, low-temperature geothermal applications, ground-source heat pumps, and wellbore completion
- Developed software and models with FORTRAN, VBA, MATLAB, and C; conducted numerical simulations with COMSOL, TOUGH2, TRNSYS, Aspen Plus, and Fluent
- Lead or co-author of one book chapter, five peer-reviewed articles, and 10 conference papers or presentations

## **Eric E. Benson, PhD in Inorganic Chemistry, Materials Science**

- Experienced with electrochemistry, XAS, XRF, XRD, FTIR, Raman, UV-Vis-NIR, GC, GC-MS, EPR, spectroelectrochemistry, inorganic and organic synthesis, the handling of air sensitive materials, strained materials, computational chemistry, CAD, CAM and CNC routing
- Developed, designed, and manufactured custom cells and parts for use with tensile tester for measuring material properties under static and dynamic strain
- Authored multiple scientific publications on original research as well as review articles, co-authored several successful grants, and presented research at national conferences

LinkedIn profile: <https://www.linkedin.com/in/eric-benson-1b845634>



# OUR POSTDOCS

## **Vivek S. Bharadwaj, PhD in, Chemical Engineering, Molecular Simulations**

- Expert at molecular dynamics (MD) and computational (bio)chemistry for structure prediction, exploration, and evaluation of reaction mechanisms and thermodynamic and physical property estimations in biological and chemical systems
- Competent with a variety of molecular modeling software packages (AMBER, CHARMM, Gaussian, MOE, Autodock); programming languages (Fortran, BASH) and high performance computing
- Successfully delivered on multiple collaborative research projects; conceptualized, developed, and implemented research methodologies leading to impactful publications; effective communicator and presenter

LinkedIn profile: <https://www.linkedin.com/in/vivek-bharadwaj-a4652919>

## **Noah Bronstein, PhD in Physical Chemistry**

- Expert in quantum dot nanomaterials synthesis and characterization, optoelectronic device measurement, instrument development, and optical modeling
- Current research investigates the synthesis and characterization of III-V quantum dots from a gas-phase plasma reactor, as well as investigation of the effects of atmospheric conditions on the accuracy of solar irradiance measurements
- Author of 13 scientific peer reviewed papers on quantum dot luminescent photovoltaic devices, quantum dot photodetectors, quantum dot surface chemistry, charge transport in quantum dot arrays, the chemistry of anion exchange in perovskites, the optical properties of lanthanide upconverters, and other subjects

LinkedIn profile: <https://www.linkedin.com/in/noahbronstein>

## **Melissa Cano, PhD in Microbiology, Vegetal Biology and Biotechnologies**

- Expert in: 1) molecular biology for metabolic engineering and site-directed mutagenesis for enzyme optimization and 2) biochemistry techniques (protein purification and characterization, antibody generation, gas and liquid chromatography) and biophysics techniques (membrane-inlet mass spectrometry with labelled compounds for physiological studies)
- Expert in photosynthetic studies: 1) chlorophyll fluorescence and 2) electron transfer studies (JTS-spectrometer)
- Authored four publications; oral and poster presentations at conferences, teaching physics for undergraduate students, lifetime interest in all sciences and renewable energy topics

LinkedIn profile: <https://www.linkedin.com/in/melissa-cano-a9548338>

## **Lei Cao, PhD in Materials Science and Engineering, Battery and Fuel Cells**

- Dedicated battery and fuel cell researcher with seven years of hands-on-experience for lithium-ion battery design, manufacturing and testing
- Strong fundamental understanding and experimental skills in material characterization, synthesis, and electrochemical analysis
- Motivated team member credited with two patent applications and 12 co-authored papers

LinkedIn profile: <https://www.linkedin.com/in/lei-cao-80556317>



# OUR POSTDOCS

## **Jason M. Christ, PhD in Applied Chemistry, Electrochemistry**

- Expertise and knowledge in fundamental electrochemical theory and energy applications, specifically fuel cell related processes (oxygen reduction reaction (ORR) kinetics, transport properties, limiting current, membrane electrode assembly (MEA) fabrication, in-situ performance testing and diagnostic development)
- Experience in electrochemical/electrocatalyst characterization techniques including rotating ring-disk electrode (RRDE), electrical impedance spectroscopy (EIS), x-ray fluorescence (XRF), gas physisorption, and electron microscopy
- Ability to model and interpret fuel cell performance data, enjoys collaborating and being part of a team, focused on saving the environment

LinkedIn profile: <https://www.linkedin.com/in/jason-christ-41099372>

## **Jeffrey Christians, PhD in Chemical and Biomolecular Engineering, Materials Science**

- Expertise in solution processed photovoltaic devices, particularly organic-inorganic perovskites, nanomaterial synthesis and characterization, thin film characterization, time-resolved spectroscopy, and optoelectronic device characterization.
- Author of 13 peer-reviewed scientific publications; instructor for Introduction to Engineering Systems I & II at the University of Notre Dame (> 40 first year undergraduate students)
- Recipient of the Department of Energy Office of Energy Efficiency and Renewable Energy Postdoctoral Research Award; recipient of the University of Notre Dame Eli J. and Helen Shaheen Graduate School Award in Engineering; received four fellowships/grants during graduate school

LinkedIn profile: <https://www.linkedin.com/in/jeff-christians-1537272a>

## **Eric Colegrove, PhD in Physics, Semiconductor Materials and Devices**

- Specialization in thin-film photovoltaic device fabrication and performance optimization using wet chemistry, (ultra-)high vacuum deposition equipment, and optoelectronic characterization techniques
- Programming for physical process modeling, trend analysis, and fitting
- Scientific author, presenter, and reviewer with experience in research project development, experimental design, and multi-institution collaboration

LinkedIn profile: <https://www.linkedin.com/in/eric-colegrove-16877616>

## **Mirjana Dimitrievska, PhD in Physics, Materials Science, Materials Characterization**

- Expert in Raman spectroscopy and x-ray and neutron diffraction techniques; inelastic and quasielastic neutron scattering techniques (experimental and theoretical calculations)
- Optoelectronic characterization of semiconductor materials, with emphasis on the defect and device properties
- Author of more than 40 scientific peer-reviewed publications; and more than 15 invited talks and oral presentations at conferences
- Involvement in multi-disciplinary research projects and teaching

LinkedIn profile: <https://lu.linkedin.com/in/mirjana-dimitrievska-41977335>



# OUR POSTDOCS

## **Todd Eaton, PhD in Chemical Engineering (Northwestern University), Heterogeneous Catalysis**

- Interested in the discovery of new classes of catalysts that aid or enable environmentally friendly chemical processes
- Expertise in advanced catalyst characterization, including *in situ* applications of x-ray absorption, infrared, and UV-vis spectroscopies
- Experienced in flow-reactor design, fabrication, and commissioning, including custom control software

LinkedIn profile: <https://www.linkedin.com/in/todd-eaton-4294113a>

## **Annika Eberle, PhD in Mechanical Engineering**

- Expertise in engineering-inspired biology, insect wing mechanics, fluid-structure interaction, elasticity, system dynamics, and environmental sustainability; research interests include sustainability analysis, life cycle assessment, mechanics of materials, system dynamics, and bio-inspired design
- Created finite element, fluid-structure interaction, and system dynamic models in Python, MATLAB, and Mathematica and commercial packages COMSOL and ANSYS
- Awarded NSF Graduate Research Fellowship; developed interdisciplinary research collaborations; developed and performed experiments and simulations; authored five publications; presented results at technical and non-technical conferences

LinkedIn profile: <https://www.linkedin.com/in/annikaleberle>

## **Emily F. Freed, PhD in Genetics, Strain Engineering for Biofuels**

- Expertise in cloning and genetic manipulation of human cells, yeast, and bacteria; algal culturing; PCR and qPCR; DNA and RNA isolation; library design and screening; next-generation sequencing (NGS); protein purification; Western blotting
- Core skills include data collection/analysis, multi-project management, critical thinking, problem solving, and process improvement
- Authored 10 scientific publications; presented at seven national/international conferences; awarded NIH Pre-doctoral Fellowship

LinkedIn profile: <https://www.linkedin.com/in/emily-freed-431b039>

## **Lauren Garten, PhD in Material Science**

- Expertise in physical vapor deposition, solution chemistry, crystal growth, and bulk materials synthesis; seven years' experience in electrical characterization, metrology development, and device design for dielectric, piezoelectric, ferroelectric, and semiconducting applications
- Experience in grant writing, laboratory management, teaching, and establishing collaborations
- Lead or co-author for 10 peer reviewed articles, mentor for four research interns, and winner of the Department of Energy, Office of Science "Postdoctoral Researcher Competition" 2015

LinkedIn profile: <https://www.linkedin.com/in/lauren-garten-92b9a316>



# OUR POSTDOCS

## **Srinivas K. Guntur, PhD in Mechanical Engineering, Wind Turbine Aerodynamics and Loads**

- Expertise in reduced order aerodynamic modelling of wind turbines, full system validation of wind turbine design codes
- Experimental design; experimental as well as high-fidelity numerical data post-processing and analysis
- Author of multiple international conference/journal publications, often as a collaboration between national labs from different countries, industrial R&D partners

LinkedIn profile: <https://www.linkedin.com/in/sguntur>

## **Rachelle Ihly, Ph.D. in Physical/Analytical Chemistry, Materials Science**

- Broad research interests include solar energy conversion and development of novel nanomaterials and devices; expertise in materials science, thin films and device applications
- Capability to: 1) put large amounts of information into context, 2) source information easily to build a solution around challenges, and 3) effectively communicate these findings to people of most any background
- Looking to expand my expertise in the startup field, specifically applying my knowledge to create high-performance materials for a variety of applications

LinkedIn profile: <https://www.linkedin.com/in/rachelle-ihly-ph-d-2b409239>

## **Nikhil Jain, PhD in Electrical Engineering, Semiconductor Materials and Devices, III-V epitaxy and material characterization, process integration, device modeling**

- Experienced semiconductor materials and device scientist with in-depth knowledge of device design and underlying physics, epitaxial growth (MBE, MOCVD, HVPE), wafer fabrication and material characterization for photovoltaic, electronic, and optoelectronic devices
- Experience in conducting research and development projects at academic, national lab, and startup industrial setting
- Authored or co-authored 20 peer reviewed journal publications and seven conference proceedings; wrote or contributed towards several successful funding grants

LinkedIn profile: <https://www.linkedin.com/in/nikhil-jain-48a26025>

## **Lahiru Jayakody, PhD in Bioscience and Biotechnology, Metabolic Engineering and Stress Biology**

- Expertise in molecular biology techniques including gene manipulation, CRISPR/Cas9-based genome editing, protein expression and purification, omics analysis, spingolipids isolation and characterization, handling of NMR, HPLC, LC-MS, GC-MS, bioinformatics and megavariate analysis
- Authored 21 peer-reviewed articles; 30 conference presentations and proceeding articles; two patents; 13 scientific awards including five international awards
- Editor of the International Journal of "Enzyme Engineering", ISSN: 2329-6674; six-years of academic teaching and mentoring experiences; research project development and coordination; grant proposal writing; attractive scientific presentation skills: collaborator and multi-tasker

LinkedIn profile: <https://lk.linkedin.com/in/lahiru-jayakody-2b56116b>



# OUR POSTDOCS

## **Søren A. Jensen, PhD in Physics, Optical Characterization of Photovoltaic Materials**

- Expertise in femtosecond laser systems, specifically THz and PL spectroscopy of photovoltaic materials and low dimensional carbon structures; low temperature measurements with vacuum pumped cryostats; working with optics
- Data analysis and interpretation including writing fitting algorithms
- Authored 12 scientific publications; given presentations at international conferences

LinkedIn profile: <https://www.linkedin.com/in/soeren-alkaersig-jensen-a9ab4a93>

## **Zhen Li, PhD in Material Science and Engineering, Photovoltaic Materials and Carbon Nanomaterials**

- Expertise in nanomaterials synthesis and handling (both CVD and solution approaches); perovskite and Si solar cells and other optoelectronic devices; material characterization techniques; CVD-system and vacuum deposition
- Model and interpret data; identify trends; propose theories and design experiments
- Authored 55 scientific publications with 2354 citations; 2 oral presentations on international conferences; collaborator and multi-tasker

LinkedIn profile: <http://www.linkedin.com/in/lizhen04>

## **Chien-Yuan (Kevin) Lin, Ph.D. in Forestry, plant genetics engineering for tailoring biomass and plant cell wall characterization**

- Experienced in genome, transcriptome, and proteome analyses for monoclinal biosynthesis in plants; expert in plant tissue culture for transgenic plant generation such as woody plant (*Populus trichocarpa*) and grass species
- Expert in cloning, expression, and purification of recombinant enzymes and enzyme characterization through kinetics study and plant specific metabolites inhibition using HPLC
- Trained in molecular biology for multi-disciplinary projects, such as plant biology (Ph.D.) and cancer biology (M.S.); author of more than six scientific peer-reviewed papers and chapters in books

LinkedIn profile: <https://www.linkedin.com/in/skybluekevin>

## **Jonathan Lo, PhD in Molecular Biology, Metabolic Engineering**

- Expertise in metabolic and genetic engineering, fermentation, anaerobic biochemistry and physiology
- Design and construction of strains for both applied and fundamental science; analysis of metabolic products; enzyme assays
- Authored six scientific publications and two patents; prepare and present data; develop and direct research projects; collaborated with both academic and industry partners

LinkedIn profile: <https://www.linkedin.com/in/jonathan-lo-55a28381>



# OUR POSTDOCS

## **Joan G. Marcano, PhD in Biochemistry – RNA Structural Biology**

- Expertise in RNA regulatory elements in bacteria
- Trained in molecular biology of bacteria, cell-based fluorescence assays, transcription assays, small-molecule RNA binding assays
- Mentored underrepresented minorities in STEM fields
- Authored eight scientific publications

LinkedIn profile : <https://www.linkedin.com/in/joanmarcano>

## **Leonardo Micheli, PhD in Renewable Energy, Photovoltaics Model and Development**

- Main research topics: experimental heat transfer and thermal modelling, electrical characterization of photovoltaic systems, concentrating photovoltaic receivers' design and development
- Experience in thermal and electrical modelling; I-V curves and EQE measurement using solar simulators, I-V tracers and IPCE measurement systems; temperature detection with thermocouples and infrared cameras; chemical etching and printed circuit board population
- Author of 16 scientific communications; speaker at international conferences and workshops; reviewer; awarded travel and international visiting research grants

LinkedIn profile: <https://it.linkedin.com/in/leonardomicheli>

## **John Moseley, PhD in Materials Science, scanning electron microscopy-based characterization**

- Expertise in scanning electron microscopy characterization of semiconductors—including: cathodoluminescence, electron backscatter diffraction, and electron-beam-induced current techniques; experienced in focused ion beam preparation of samples for electron microscopy; extensive experience with CdTe solar cell materials
- Veteran user of ImageJ and/or Matlab software for image analysis, extraction of important information from hyperspectral data, and numerical methods
- Authored or co-authored over 15 scientific publications; present to NREL clients and at conferences; collaborate with colleagues at NREL and in industry

LinkedIn profile: <https://www.linkedin.com/in/john-moseley-56365563>

## **Jennifer F. Newman, PhD in Meteorology, wind resource assessment**

- Expertise in turbulence, boundary-layer meteorology, wind resource characterization, and remote sensing
- Current duties include processing and analyzing observational data, writing algorithms to improve the accuracy of lidar measurements, and modeling the effects of turbulence on wind power production
- Co-author on eight refereed publications and 20 conference abstracts; frequent presenter at national and international conferences; reviewer for scientific journals and technical reports; collaborator with other national labs and industry scientists

LinkedIn profile: <https://www.linkedin.com/in/jennifer-newman-b5b04b88>



# OUR POSTDOCS

## **Sandra Notonier, PhD in Biocatalysis; Whole Cell Development and Screening of Enzyme Mutant Libraries for the Production of Industrial Compounds**

- Current work on metabolic engineering and molecular biology for advanced biomanufacturing
- Expertise in : 1) strain engineering in *Pseudomonas putida*, 2) evaluation and characterization of microorganisms and enzymes related to lignin depolymerization and bioconversion, 3) microbial cultivation, protein expression and design and study of enzyme mutant libraries
- Author of peer-reviewed papers and presentation of results at international conferences; highly self-motivated and passionate for synthetic biology and biotechnologies

LinkedIn profile: <https://de.linkedin.com/pub/sandra-notonier/25/a46/353>

## **Jaehong Park, PhD in Physical Chemistry, laser spectroscopy**

- Expertise in femtosecond, nanosecond laser systems; microwave spectroscopy; optics; laser spectroscopy setup; temperature control; vacuum systems; organic synthesis; nanomaterial dispersion
- Analyze data; work on computational algorithms
- Authored 13 scientific publications; present at national conferences; lead and drive research projects; participated in grant writing and report; collaborator and parallel multi-tasking; mentoring and supervising junior scientists

LinkedIn profile: <https://www.linkedin.com/in/jaehong-park-68398334>

## **Kwangwook Park, PhD in Optoelectronics, III-V/II-VI semiconductor epitaxy growth**

- Expertise in III-V/II-VI molecular beam epitaxy (MBE) growth; optical and structural characterizations; semiconductor device structure design and simulation using Silvaco ATLAS tool and Crosslight PICS3D/APSYS tools
- Undertaken over 2,000 MBE runs and maintenance of MBE for more than 40 times; experience in refurbishment of two MBE systems (VG V80H and VG V80)
- Authored 16 referred journals of nanowires, quantum dots, quantum wells, superlattices and their device applications; presented 40 times in domestic (Korean) and international conferences

LinkedIn profile: <https://www.linkedin.com/in/kwangwook-park-56504b4a>

## **Eliot W. Quon, PhD in Aerospace Engineering, Numerical Methods**

- Expertise in computational fluid dynamics and aeroelasticity, fluid-structure interaction, extreme condition modeling for wind and wave energy, data approximation methods, iterative numerical methods
- Development of high-performance computing applications, including high-fidelity wind turbine aeroelastic response analysis and mesoscale-microscale coupling for analyzing wind farm operating conditions; analysis of rotor wake meandering dynamics; evaluation of modeling techniques for wave energy converters
- Authored 12 scientific publications; wrote research proposals; mentored undergraduate students and interns

LinkedIn profile: <https://www.linkedin.com/in/eliot-quon-7345604>



# OUR POSTDOCS

## **Nicholas A. Rorrer, PhD in Chemical Engineering, Polymer Chemistry and Physics**

- Expertise in preparation of monomers from bioderived source for implementation in novel bio-polymers; skilled in polymer preparation and characterization via NMR, GPC, DSC, TGA, DMA, SAXS, and WAXS
- Experience in polymer simulation focused on understanding polymer processing; skilled in FORTRAN, Matlab, MPI, OpenMP and C++ programming with an understanding of their implementation in Monte Carlo and Molecular Dynamics simulations
- Author on 11 scientific publications, former Department of Energy Office of Science Award Recipient

LinkedIn profile: <https://www.linkedin.com/in/nicholas-rorrer-6904a337>

## **Asad H. Sahir, PhD in Chemical Engineering, Process Research and Development**

- Research expertise includes conceptual process design and analysis for refinery integration, thermochemical processing routes for biofuels, and carbon capture and sequestration
- Well-versed with U.S. DOE Systems Analysis research methodology for both renewable and conventional energy sources, with previous R&D experience at a Fortune 500 company in India
- Authored seven scientific publications and three technical reports for U.S. DOE (one for DOE-EERE and two for DOE-NETL) and a recognized mentor for undergraduate researchers

LinkedIn profile: <https://www.linkedin.com/in/asadsahir>

## **Peter C. St. John, PhD in Chemical Engineering, Systems Biology**

- Current work focuses on building predictive models of microbial metabolism to identify genetic perturbations to achieve maximum product productivity and yield
- Significant experience with dynamic systems, optimization, and developing intuitive models of biological processes
- Authored eight scientific publications, has a strong background in several programming languages.

LinkedIn profile: <https://www.linkedin.com/in/peterstjohn>

## **Violeta Sánchez i Nogué, PhD in Chemical Engineering, Biotechnology**

- Expertise in fermentation technology: batch, fed-batch, and chemostat under aerobic and anaerobic conditions; microbial cultivations and physiology
- Interests in production of chemicals and fuels from biomass feedstocks involving biotechnological steps; microbial tolerance to biomass feedstocks; and metabolic engineering for the production of value-added compounds
- Experimental design and data interpretation; presented results at international conferences, wrote reports of publicly funded projects and authored scientific publications; a responsible, dynamic and hard-working person, willing to learn and accept new challenges

LinkedIn profile: <https://www.linkedin.com/in/violeta-sánchez-i-nogué-594b2010>



# OUR POSTDOCS

## **Manuel Schnabel, PhD in Materials Science, Photovoltaics and Thin Film Characterization**

- Current work focusses on improving high-efficiency Si solar cells and stacked III-V/Si tandem cells. It involves cell production via wet chemistry, PECVD, furnace annealing, RIE, and evaporation of metals and TCOs, and characterization via UV-vis spectroscopy, current-voltage measurements under varying illumination, EQE, PL imaging, Suns-Voc and Sinton lifetime measurements
- 6 years' experience in solar cell and thin film characterization: GIXRD, FTIR, SEM, TEM, EDX, AFM, Ellipsometry, PL, IV, QSSPC, Suns-Voc, EQE
- Co-author of 23 peer-reviewed journal articles and two book chapters, presented research at six international conferences, experience mentoring undergraduate students and interns and working with a wide range of researchers, technicians, and international private- and public-sector project partners

LinkedIn profile: <https://www.linkedin.com/in/manuelschnabel>

## **Kevin Schulte, PhD in Chemical Engineering, III-V Materials Growth and Characterization**

- Expertise in Hydride Vapor Phase Epitaxy, Metalorganic Vapor Phase Epitaxy, reactor design, CFD and kinetic modeling, optoelectronic characterization of III-V materials, x-ray diffraction, photovoltaic device design and characterization
- Designed or helped design two Hydride Vapor Phase Epitaxial (HVPE) growth reactors and constructed one
- Authored or co-authored 14 peer reviewed publications (eight as first author), three conference papers, and three patent applications (one granted, two pending)

LinkedIn profile: <https://www.linkedin.com/in/kevin-schulte-7969667b>

## **Philip Schulz, PhD in Physics (RWTH Aachen, Germany), Organic and Hybrid Electronics**

- Expertise in interface and surface science, thin-film characterization, photoemission spectroscopy, optical spectroscopy, X-ray spectroscopy and diffraction, electronic properties characterization, vacuum thin-film growth, and atmospheric coating technologies
- Over eight years of experience in materials design and analysis for OLED, OTFT, OPV, TCO, and hybrid organic inorganic perovskite solar cell technological platforms in physics and electrical engineering (Princeton University) departments
- Authored over 20 peer-reviewed scientific publications; worked in close collaboration with globally operating industry partners; gave over 10 invited talks at international conferences and seminars; won international scholarships, travel awards, beam line proposals and research grants (> \$1.5M)

LinkedIn profile: <https://www.linkedin.com/in/philip-schulz-8549b173>



# OUR POSTDOCS

## **Latha Sethuraman, PhD in Electrical and Electronics Engineering, hydrodynamics and drive-train dynamics of direct drive generators**

- Expertise in investigation of internal drive-train dynamics for direct-drive generators ; structural integrity, air-gap eccentricity and UMP modelling, bearing loading, and fatigue lifetime analysis
- Electromechanical design optimization of variable speed generators for wind turbine applications; modelling and analysis of main bearing dynamics in three-point and four point suspension wind turbine drive-trains
- Expertise in multi-body modelling, fully-coupled aero-hydro-servo-elastic simulation; finite element analysis, modal analysis, and resonance including drive-train electro-mechanical and controller interaction

LinkedIn profile: <https://www.linkedin.com/in/lathasethuraman1>

## **Sebastian Siol, PhD in Materials Science, materials synthesis and characterization**

- Currently working on: high-throughput combinatorial synthesis and characterization of new inorganic semiconductors for materials by design and photovoltaic applications
- Expertise in: semiconductor physics, electronic band structure, vacuum systems, thin film PV, surface science, laser development, optics, optoelectronics, methods: PVD, XRD, XRF, XPS/UPS, SEM, Hall effect
- Writing of scientific publications, presentation of scientific results, tutoring of graduate students, creative and ambitious team player

LinkedIn profile: <https://www.linkedin.com/in/sebastian-siol-64873b115>

## **Brady Stoll, PhD in Mechanical Engineering (Power Systems Modeling)**

- Expertise in renewable energy integration; power systems operation; capacity expansion modeling; demand response modeling
- Software and model development in GAMS, R, Python, and Matlab; data analysis and visualization; power systems operations in PLEXOS
- Authored three journal articles and one technical report; prepared and presented presentations at technical conferences

LinkedIn profile: <https://www.linkedin.com/in/brady-stoll-23666676>

## **Nathan M. Tom, PhD in Mechanical Engineering (Ocean Environments)**

- Expertise in marine energy systems; electromagnetic (direct-drive) power-take-off design; linear and nonlinear model predictive control (MPC) strategies
- Time-domain and spectral modeling techniques; experimental design and data processing; open source code development
- Authored 12 scientific publications; recipient of the 2013 OMAE Subrata Chakrabarti Young Professional Award; received Outstanding Mentor Awards from UC Berkeley and NREL

LinkedIn profile: <https://www.linkedin.com/in/nathan-tom-170a1112>



# OUR POSTDOCS

## **Francois Usseglio-Viretta, PhD in Microstructure Characterization, Mechanics, and Electrochemistry**

- Expertise in 3D microstructure characterization (image processing): writing of algorithms to deduce transport and electrochemical properties and perform homogenization calculations (transport and thermoelastic properties), with a good knowledge of numerous method pitfalls
- Expertise in developing mechanical model; mechanical damage analysis (statistical approach); mechanical characterization under controlled atmosphere and temperature
- Knowledge of fuel cell and battery electrochemistry

LinkedIn profile: [www.linkedin.com/in/françois-usseglio-viretta-91120baa](http://www.linkedin.com/in/françois-usseglio-viretta-91120baa)

## **Kurt M. Van Allsburg, PhD in Chemistry, Artificial Photosynthesis**

- Coordination and materials chemist with experience in organic and inorganic synthesis; crystallography; materials characterization including X-ray, electronic, and magnetic spectroscopies; catalytic testing; and device integration
- Dynamic presenter and science evangelist, with particular interest in science & technology policy, energy technology commercialization, energy economics, and financing for renewables
- Primary developer of the Catalyst Cost Model at NREL, a spreadsheet- and web-based tool allowing easy and accurate industrial catalyst cost determination

LinkedIn profile: <https://www.linkedin.com/in/kurt-van-allsburg-948901b6>

## **Josh Vermaas, PhD in Biophysics and Computational Biology**

- Research experience in modeling diverse biological processes through classical simulation techniques, including compound parameterization and free energy calculations, with special emphasis on membrane-protein interactions
- Well versed in the practical application of C/C++, python, and Tcl for scientific applications, and has developed tools and methods that have been incorporated into VMD, a widely used trajectory visualization program
- Extensive publication and funding record, including several projects featuring close collaboration with traditional experimental researchers, as well as team leadership in the preparation of book chapters and reviews

Google Scholar Profile: <https://scholar.google.com/citations?user=WSWCJ-gAAAAJ&hl=en>

## **Derek Vigil-Fowler, PhD in Physics, Theoretical Materials Science**

- Expert in semiconductor modeling: optics, bandstructure, transport; efficient parallel computation, I/O; managing large datasets/code bases; analyzing/visualizing datasets with python; applied mathematical analysis
- Strong believer in constant process improvement for organizations, making common operations more efficient and transparent for all parties; strong track record in this realm, showing inclusive leadership in doing so
- Strong communicator in written/spoken form, having obtained continuous grants for education and scientific work from these skills; passionate about the importance of clear communication of ideas in the workplace

LinkedIn profile: <https://www.linkedin.com/in/derekvigilfowler>



# OUR POSTDOCS

## **Ganesh Vijayakumar, PhD in Mechanical Engineering, Atmospheric Boundary Layers and Wind Turbine Aerodynamics**

- Strong fundamental understanding of atmospheric boundary layers and wind turbine aerodynamics and relevant modeling techniques of multiple fidelity levels including large eddy simulation (LES)
- Expertise in computational fluid dynamics algorithms and turbulence modeling techniques for incompressible flows including hybrid URANS-LES and relevant technical skills in C/C++/Fortran/Python/MATLAB and large scale parallel programming (MPI)
- Author of several conference and refereed journal publications; collaborated with scientists from different labs for research and software development

LinkedIn profile: <https://www.linkedin.com/in/ganesh-vijayakumar-829b985>

## **Bo Wang, PhD in Biological Design, Metabolic Engineering**

- Expertise in metabolic engineering of microorganisms; fine-tuning and characterizing gene expression at DNA, RNA and enzyme levels; metabolites quantification, and philological study; developing tools for genetic manipulation; process optimization; BS and MS in chemical engineering
- Experimental design and data processing; authored six peer-reviewed scientific publications; six conference papers; led two patent applications; preparing project reports and writing proposals
- Self-motivated with team spirit; trouble shooting and problem solving

LinkedIn profile: <https://www.linkedin.com/in/bo-wang-a1087515>

## **Qin Wang, PhD in Electrical Engineering, Power Systems Engineering Center**

- Expertise in power system reliability and online security analysis, smart distribution systems, transactive energy, transmission planning, and electricity markets
- Production cost simulations; renewable energy integration studies
- Authored 26 scientific publications; develop and direct research projects; collaborator and multi-tasker

## **Lance M. Wheeler, PhD, Materials Synthesis & Characterization**

- Expertise in gas- and liquid-phase synthesis and functionalization of colloidal and thin film materials with an emphasis on nano- and meso-scale systems
- Skilled in colloidal thermodynamics modeling, colloidal and chemical characterization, including dynamic light scattering and nuclear magnetic resonance spectroscopy, as well as optical and electronic transport characterization
- Outstanding writing, communication, and leadership skills demonstrated by many high-impact publications, grant proposals, patents, and invited talks

LinkedIn profile: <https://www.linkedin.com/in/lancemwheeler>



# OUR POSTDOCS

## **James B. Whitaker, PhD in Inorganic Chemistry – Materials Chemist**

- Experienced with thin film deposition techniques as well as various coating technologies including blade coating, slot-die, gravure, and roll-to-roll coating
- Expert in a wide range of advanced chemical synthesis methodologies, battery performance/ characterization, electrochemical cell design, and materials characterization including mass spectrometry, NMR spectroscopy, non-aqueous electrochemistry, HPLC, XRD, electronic and vibrational spectroscopy
- Demonstrated product development, outstanding leadership, and strong communication skills as well as the ability to work as part of a multidisciplinary team

LinkedIn profile: <https://www.linkedin.com/in/james-whitaker-baa9a216>

## **Nolan Wilson, Chemical Engineering, Polymer Chemistry and Transport**

- Expertise in polymer synthesis and functionalization; transport within polymers; electroconductive polymer composites; finite element modeling; separation and synthesis of bioderived molecules for production of value added precursors, monomers, prepolymers, and polymers
- Experience with COMSOL, Jump, Python, JavaScript, HTML5, CSS and practical skillset set includes TGA, DSC, DMA, NMR, AFM, DLS, CV, and UV-Vis
- Author on eight scientific publications; five years of industry experience; and committed to the research, development and deployment of novel technologies

LinkedIn Profile: <https://www.linkedin.com/in/anolanwilson>

## **Mengjin Yang, PhD in Materials Science and Engineering**

- Expertise in nanomaterials synthesis, thin/thick film deposition (vacuum, solution process, scale-up methods), hybrid materials for energy applications (perovskite solar cell, photoelectrochemical cell), and device physics characterizations
- High-level skill of data analysis, design of experiment, and problem solving
- Authored 43 scientific publications, presented at eight national conferences, performed teaching assistance for four undergraduate courses, mentored five undergraduates, and participated in grant proposal writing

LinkedIn profile: <https://www.linkedin.com/in/mengjin-yang-59345019>

## **Ye Yang, PhD in Physical Chemistry, time resolved laser spectroscopy**

- Photogenerated charge carrier dynamics, semiconductor surface, photoelectrochemical properties of thin-film semiconductor, solution processed semiconductor synthesis
- Dynamics modeling, spectral fitting, Igor programming
- Authored 20 peer-reviewed publications, five conference oral presentations

LinkedIn profile: <https://www.linkedin.com/in/ye-yang-0419012b>



# OUR POSTDOCS

## **James L. Young, PhD in Materials Science and Engineering**

- Expertise in III-V photoelectrochemical and solar water splitting devices and atomic layer deposition
- Considerable experience in semiconductor corrosion characterization and analysis, photoluminescence, UV-Vis and photocurrent spectroscopies, EQE/IPCE measurement, catalyst deposition via sputtering, electrochemical deposition, vacuum systems, on sun efficiency benchmarking measurements, SEM/FESEM, XRR, Igor
- NSF Graduate Research Fellow, Outstanding Mentor Award recipient; authored 20+ publications and conference presentations

LinkedIn profile: <https://www.linkedin.com/in/james-l-young-965aa311>

## **Ruoran Zhang, PhD in Macromolecular Science and Engineering, Polymer/Polysaccharide Chemist**

- Expertise in polymer/cellulose synthesis, characterization and formulations; extensive investigation on structure-property-processing relationships; familiar with routine wet chemistry methods, including separation and purification
- Hands-on material preparation and characterization: 1D/2D NMR, potentiometric/conductometric titration, contact angle/ zeta-potential measurement, TGA, DSC, SEC, SEM, AFM, TEM, IR, XRD, DLS, UV-Vis, HPLC, spray-dry, column chromatography and statistical data analysis
- Authored 10+ journal and conference publications; excellent communication and presentation skills; work as a project leader or participate on project teams

LinkedIn profile: <https://www.linkedin.com/in/ruoran-zhang-2b116a91>

## **Lei Zhu, PhD in Transportation Engineering**

- Expertise in transportation engineering, ITS, GPS/GIS-transportation, transportation network modeling, traffic simulation, connected & automated vehicle energy impact analysis, traffic data analysis and data mining
- Algorithms and simulation; Python, Java, C#, C/C++, Matlab
- Authored eight scientific publications; prepare and present presentations; develop and direct research projects; wrote grants; collaborator and multi-tasker; work experience in transportation industry

LinkedIn profile: <https://www.linkedin.com/in/lei-zhu-68ab143b>