Blake Peters, Ph.D.

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Street Address • City, ST Zip Code

Senior Scientist

Highly knowledgeable, creative, and progress-driven Scientist with 10+ years' experience in contributing to advancements in the materials/surface science, chemical engineering, and biotechnology fields. Expertise in design and development of novel surface coatings, biosensor fabrication, and biomimetic surfaces at the micro and nano scale. Demonstrate exceptional level of leadership, initiative, and problem-solving skills in highly technical scientific environments. Consistent top performer, talented multi-tasker, and consummate team player with ability to identify complex experiment issues and develop innovative solutions that align with company goals. Outstanding writer, cross-functional collaborator, and public speaker. Fluent in Ukrainian and Russian. *Key skills include:*

Laboratory Management • Staff & Student Training • GMP/GLP Compliance • Project Management • Experiment Design
Troubleshooting • Protocol Development • Results Reporting & Presentation • Quality Control • Product Delivery

Select Achievements

- Discovered/synthesized new class of modified aliphatic polyester hyperbranched molecules that formed linear nanofibers (contrary to common belief that this molecule type can only be amorphous); published 4 articles on this topic that have been cited 150+ times.
- Created method to immobilize mechanosensitive ion channel protein (recognized as only known successful attempt to immobilize specific protein type on solid substrate in different conformations.
- Synthesized and characterized cerium oxide nanoparticles with anti-ischemic properties in collaboration with College Name; published results and filed patent (2010).
- Fabricated biopolymer microcapsules for biocatalytic applications and achieved of high yields of ethanol on one-step fermentation of wood hydrolyzate; invited to present results at Conference Name (2009).

Laboratory Skills

Nanomaterials: Inorganic Nanoparticles Synthesis, Surface Modification, Conjugation, Catalytic Properties

Synthetic Chemistry: Organic Synthesis, Polymer Synthesis, Peptide Synthesis

Thin Film Technology: Self-Assembled Monolayers, Langmuir-Blodgett, Layer-By-Layer, Silanization, Casting, Spin Coating

Analytical Methods/ Characterization: AFM, SEM, TEM, XRD, TGA, DSC, DMA, UV-Vis, Fluorescent Spectroscopy, Surface Energy/Contact Angle, Surface Tension (Langmuir), DLS, FTIR, GC, GPC, NMR, Optical Fluorescent Microscopy, Ellipsometry

Computer Programs: ChemOffice, RasMol, Materials Studio, MS Office Suite, Linux

Professional Experience

Company Name, City, ST — 2011 to Present
Visiting Scientist

Recruited to conduct original research in materials design, functional surfaces, device fabrication, and characterization through College Name grant. Currently contributing to technology-enabled capability demonstration (TCD) stage project focused on developing novel digital lithography printing process and device.

- Coauthored 5 invention disclosures (ID) to date; created 2 new methods for creating textured silicone surfaces (patents pending).

- Identified catalyst poison present in filler that hindered curing of silicone material; devised and submitted patent for simple process to remove poison and allow material development to continue.
- Sourced optimal vendor for fluoro-silicone polymer which became mainline material based on nearly ideal performance.
- Liaised between 2 departments to establish fundamental understanding of fluoro-elastomer composition and fabrication parameters; submitted patent for optimized composition.
- Nominated for Peer Appreciation List within first month of hiring and achieved Peer Recognition Award out of 75 nominees after 6 months.

Company Name, City, ST 2007 to 2011

Research Assistant Professor (2008 to 2011)

Specifically hired to assist with biofuel project. Additionally supervised general chemistry laboratory courses, leading lectures for as many as 650 students and managing team of 13 teaching assistants. Authored proposals and reports for NIH, NYSERDA, DoE, and NSF.

- Authored 13 peer-reviewed journals, led 5 presentations at national scientific conferences, and filed 1 patent over course of tenure.
- Created and obtained provisionary patent for paper sensor for glucose-based cerium oxide nanoparticles; coauthored article published in Publication Name and featured in Publication Name.

Postdoctoral Fellow (2007 to 2008)

Requested to assist professor with completing and publishing results of project involving atomic force microscopy (AFM) visualizing dynamic of lipid layers adsorption onto silica nanoparticles. Devised and proposed plan to study different size ranges and discuss behavior of nanoparticle toxicity mechanism. Contributed to development of new biosensors able to perform logical operations before readout. Synthesized stimuli-responsive polymers and fabricated electrodes with thin polymer films and immobilized enzymes, antigens, and antibodies.

- Created method using siloxane vapor deposition to allow nanoparticles to affix to smooth silicon; recommended use of insulin to pinpoint smallest nanoparticles imbedded in lipid layer and delivered theory explaining experimental results with regards to surface tension in lipid bilayer membranes.
- Coauthored paper with professor on lipids and silica nanoparticles that was published in Article Name and wrote paper on logical biosensors that became one of the most cited articles in Journal Name.

Company Name, City, ST 2000 to 2007

Research Associate/Research Assistant, Surface Engineering & Molecular Assembly (SEMA) Lab

Managed all laboratory operations and authored reports, proposals, and SOPs. Supervised up to 12 team members including postdoctoral fellows and students. Coordinated research efforts with other laboratories, acquisition and installation of new equipment, and literature/patent research. Created measurement models and developed prototype formulations for proof-of-concept studies.

- Conducted research for Air Force project on biomimetic flow sensors; achieved recognition in review article in Science Magazine.
- Orchestrated move of entire lab (multiple rooms, approximately 3K sq. ft. total) from College Name to College Name's Department of Materials Science and Engineering at request of Ph.D. advisor; oversaw 2 trips from IA to GA, arranging transportation of all student belongings and equipment.

Company Name, City, ST 1994 to 2000
Research Associate

- Achieved Honorary Scholarship from Mayor of City Name as one of the 100 most distinguished university students out of 100K eligible individuals.
- Edited laboratory handbooks for graduate and undergraduate courses; coauthored handbook for graduate level course, "Gene Engineering in Biotechnology," published in 2002.

Education & Professional Memberships

Ph.D., Materials Science & Engineering
College Name, City, ST
Dissertation: Shell design of functional hyperbranched molecules for surface assembly.

M.S., Materials Science & Engineering
College Name, City, ST
Thesis: Organic self-assembled monolayers for reconstitution of ion channels on single crystal silicon.

M.S., Biotechnology
College Name, City, ST
Thesis: Study of induced synthesis of hydrolytic enzymes in strept. fec. var. lyt.

B.S., Chemical Technology & Engineering
College Name, City, ST
Thesis: Synthesis of chromogenic substrate Z-Ala-Ala-Leu-pNa for protease assay.

American Chemical Society (2002 to Present)

Surfaces in Biomaterials Foundation (2010 to 2011)

Materials Research Society (2006 to 2007)

Community Activity

Volunteer Youth Mentor – Center Name (2011 to Present)