

LANCE C. GIBSON, PH.D.

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EDUCATION

Ph.D. in Chemical Engineering (1998)

Auburn University, Auburn, AL

Dissertation: *Electrochemical reduction of polycyclic aromatic compounds using microfibrinous, high hydrogen overpotential electrodes.*

B.S. in Chemical Engineering (1990 - Special Distinction Honors)

University of Oklahoma, Norman, OK

PROFESSIONAL ACADEMIC EXPERIENCE

Director of Biomedical Engineering (AUG 2013-present), 40+hours/week

Harding University Department of Engineering and Physics, Searcy, AR

- Primarily chartered and the developed the curriculum for one of the first biomedical engineering degree programs in the state of Arkansas. Led the inaugural ABET accreditation and subsequent reviews for the biomedical engineering program.

Professor (2024-present), **Associate Professor** (2018-2024), **Assistant Professor** (2010-2018)

Harding University Department of Engineering and Physics, Searcy, AR

- Serve as a full-time faculty member in the engineering department at Harding University for both biomedical engineering and mechanical engineering.
- Courses taught include:
 - Biomedical Engineering:
 - BENG 2100 Biomedical Engineering Industrial Practices
 - BENG 2800 Introduction to Biomaterials
 - BENG 3800 Biomaterials
 - BENG 3700 Biomedical Engineering Lab
 - BENG 4300 Applied Biomedical Engineering
 - ENGR 3750 Selected Topics: Prosthetic Design
 - Mechanical Engineering:
 - MENG 2700 Thermodynamics
 - MENG 3700 Thermodynamic Systems
 - MENG 3210 Heat and Mass Transfer
 - MENG 3400 Fluid Mechanics
 - MENG 4100 Mechanical Engineering Lab
 - General Engineering and University:
 - ENGR 1010 Introduction to Engineering
 - ENGR 3100 Engineering Economics
 - ENGR 4201 Senior Design I
 - ENGR 4201 Senior Design II

- ENGR 3750 Selected Topics: Chemical Engineering
- COMM 1010 Communication

Arkansas INBRE Steering Committee Member (AUG 2022-2023)

- Serve as Harding University representative at annual advisory committee and conference.

Graduate Research / Teaching Assistant (1990-1998)

Auburn University, Department of Chemical Engineering, Auburn, AL

INDUSTRY EXPERIENCE

Sr. Research and Development Engineer, Boston Scientific Corporation, (2004-2009)

Risk Management-Quality Systems

- Served as the R&D functional lead for the major revision of BSC corporate risk management system and as the local site implementation trainer for the new risk assessment tools including fault tree analysis and hazard analysis. The risk management system development provides compliance with external ISO standards to meet FDA requirements and produces significant business advantages.
- Directed local and multi-site Corrective and Preventive Action (CAPA) teams for quality compliance regarding material safety and storage and for the establishment and documentation of shelf-life justification.

Cardiovascular and Peripheral Interventions Balloon Technology

- Engineered next generation angioplasty balloon designs as R&D core team leader on the respective stent and product integration Technology Development Process (TDP) project.

Cardiovascular Drug Eluting Stents (DES)

- Developed bioabsorbable polymers coatings and design specifications for Good Laboratory Practice (GLP) animal studies and First Human Use (FHU) for next generation cardiovascular products for the world's largest producer of DES products.
- Served as R&D Product Development Project (PDP) core team member and facilitated process development scale-up and validation of novel excipient polymers for DES products.

Research and Development Engineer / Member of Technical Staff, OFS, (2000-2003)

(OFS, formerly the fiber division of Lucent Technologies / Bell Laboratories)

Fiber Design and Development

- Managed process development of a platform technology for optical fiber design involving hybrid operations of Vapor Axial Deposition (VAD) and Modified Chemical Vapor Deposition (MCVD) that yielded novel, next-generation fiber designs.
- Achieved reduction in oceanic fiber transmission loss that corresponds to longer span distances and subsequent savings of \$25M in reduced systems cost. Concomitant virtual elimination in water peak (1385 nm) provides innovative system designs with significant (\$250M) prospective cost savings.

Sol Gel Advanced Glass Technology

- Led tube fabrication initiatives on an R&D team responsible for technology transfer and implementation of process modifications from Bell Labs research to manufacturing operations that more than tripled productivity in sol-gel glass technology.

- Directed unit operations for sol casting and gelling and implemented process improvements resulting in materials yield increase with savings of \$900K per year.
- Researched and conducted pilot scale trials of alternative gelling agents for shear thickening sols for silica pre-form fabrication.

Contract Engineer, McNeil Specialty Products Company, (2000)

- Performed operations engineering during startup of specialty chemical plant for manufacturing sucralose artificial sweetener (Splenda).

Process Engineer- DuPont / Conoco, (Summer 1990)

- Developed differential pressure models for the data acquisition system of a fluidized catalyst reactor in a production scale R&D pilot plant operation.

PROFESSIONAL DEVELOPMENT

- Mini MBA in Medical Technology Management continuing education course from the University of St. Thomas, Minneapolis, MN (2005)
- Polymer Synthesis short course from the American Chemical Society (2005)
- FDA Quality Systems Requirements course from the Association for the Advancement of Medical Instrumentation (AAMI), (2007)
- Design for Six Sigma: internal 6-sigma curricula with Boston Scientific Corporation

ACADEMIC HONORS

Auburn University

- DuPont Chemical Engineering National Fellowship
- C.S. Basore Chemical Engineering Departmental Fellowship
- Graduate Assistance in Areas of National Need (GAANN) Fellowship

University of Oklahoma

- 1990 Outstanding Senior Chemical Engineer (American Institute of Chemists Award)
- University of Oklahoma Chemical Engineering Program of Excellence Scholarship
- University of Oklahoma Alumni Scholarship
- Phi Kappa Phi and Golden Key National Honor Societies

PATENTS

- "Low Loss Optical Fiber Designs for Confining Optical Power to Low-Doped Regions", 2011 (# US 8073301 B2)
- "Medical devices having a coating for electromagnetically-controlled release of therapeutic agents." Submission. (US2009/054442)

TECHNICAL PRESENTATIONS

- L.C. Gibson, S. Ahn, and B.J. Tatarchuk, "Electrochemical Hydrogenation of Polyaromatics in Aqueous Emulsions using Microfibrous, High Hydrogen Overpotential Electrodes," 1996 AIChE Annual Meeting, Chicago, IL, November 13, 1996.
- T.S. Lee, L.C. Gibson, and B.J. Tatarchuk, "In Situ Reaction Studies of Atomic Oxygen Protective Coatings," 1993 AIChE Annual Meeting, St. Louis, MO, November 11, 1993.