

Robert Kelley Bradley, Ph.D.

Visiting Assistant Professor
Department of Industrial Engineering
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Education

Ph.D. Physical Chemistry, 2000, Rice University, Houston, TX
Thesis: *Large Scale Production of Single Wall Carbon Nanotubes*
Advisor: Prof. Richard Smalley

B.A. Biochemistry, 1996, Beloit College, Beloit, WI

Postdoctoral Experience

NASA Senior Postdoctoral Fellow, 2006-2007, Materials and Process Branch, Engineering Directorate,
NASA JSC, Houston TX

Postdoctoral Fellow, 2000-2001, Electrical and Computer Engineering Department, Rice University,
Houston, TX

Professional & Academic Experience

Visiting Assistant Professor of Industrial Engineering, 2019-Present, Lamar University, Beaumont, TX
Director of Materials Engineering, 2014-Present, NeuroRex, Houston, TX
Director of Technology and Research, 2010-Present, NoPo Nanotechnologies India, Houston, TX
Classroom Teacher 2015-2018, South Houston High School, Houston, TX
Nanofabrication Facility Manager, 2010-2014, University of Houston, Houston, TX
Manager of Data Analysis, 2008-2009, Remicalm, Houston, TX
Senior Postdoctoral Fellow, 2006-2007, ORAU / NASA JSC, Houston, TX
Scientist, 2003-2005, USRA / NASA JSC, Houston, TX
Scientist, 2001-2002, Nanospectra / Nanospectra Biosciences, Houston, TX
Postdoctoral Fellow, 2000-2001, Rice University ECE Department, Houston, TX

Teaching Experience

ENGR 5332 Statistical Principles in Engineering
INEN 4320 Statistical Decision Making
High School AP Physics
High School Physics
High School Integrated Chemistry and Physics

Training Experience

Focused Ion Beam Microscopy/Lithography
Reactive Ion Etcher
Ultra-High Vacuum Magnetron Sputtering
Ion Mill Etching
Electron Beam Evaporation
Atomic Force Microscopy
Fourier Transform Infrared Spectroscopy
Scanning Electron Microscopy
Electron Beam Lithography
Spin Coater
Profilometer
Cleanroom Protocol
Lab Safety

Grants

Education in Plastics Manufacturing, Primary Investigator, PISD Education Foundation, 2016, \$30,000
video: <https://youtu.be/FUsMfQol-4s>
Vernier Sensors for 1 to 1, Primary Investigator, PISD Education Foundation, 2016, \$1,000

Publications

Godwin, M. A.; Allanavar, A. B.; Joshi, S.; Reddy, G.; Abhishek, S. S.; Bradley, R. K. 2018. An Efficient Method to Completely Remove Catalyst Particles from HiPCO Single Walled Carbon Nanotubes. Journal of Nano Research, Vol. 53, pp. 64-75.
Hatamleh, O; Smith, J; Cohen, D; Bradley, R. 2009. Surface roughness and friction coefficient in peened friction stir welded 2195 aluminum alloy. Applied Surface Science. V255. Pgs 7414-7426
Charnay, C.; Lee, A.; Man, S.; Moran, C. E.; Radloff, C.; Bradley, R. K.; Halas, N. J. 2003. Reduced Symmetry Metallodielectric Nanoparticles: Synthesis and Plasmonic Properties, J. Phys. Chem. B. 107. 7327 Special Festschrift Issue honoring Professor Arnim Henglein

Publications (Continued)

- Zimmerman, J L; Bradley, RK; Huffman, C B; Hauge, R H; Margrave, J. L. 2000. Gas-Phase Purification of Single Wall Carbon Nanotubes. Chemistry of Materials. V12. N5 Pgs 1361-1366.
- Bronikowski, M J; Bradley, R K; Rohmund, F; Colbert, D T; Smith, K A; Smalley, R E. 1999. Gas-Phase Catalytic Growth of Single-Walled Carbon Nanotubes From Carbon Monoxide. Chemical Physics Letters. v 313. Pgs 91-97
- Ying, J; Bradley, R K; Jones, L B; Reddy, M S; Colbert, D T; Smalley, R E; Hardin, S H. 1999. Guanine-Rich Telomeric Sequences Stimulate DNA Polymerase Activity in Vitro. Biochemistry. v 38. n 50. Pgs 16461-16468.
- Liu, J; Rinzler, A G; Dai, H; Hafner, J H; Bradley, R K; Boul, P J; Lu, A; Iverson, T; Shelimov, K; Huffman, C B; Rodriguez-Macias, F; Shon, Y; Lee, T R; Colbert, D T; Smalley, R E. 1998. Fullerene Pipes. Science. v 280. Pgs 1253-1256.

Patents

- Sadeghian-Motahar, S.; Bradley, Robert Kelley. Bio-Potential Sensing Materials as Dry Electrodes and Devices. US Patent. Date of Patent: May 29, 2018. Patent No.: US9980659B2.
- Halas, N.J.; Bradley, R. K. Method for Scalable Production of Nanoshells Using Salt Assisted Purification of Intermediate Colloid Seeded nanoparticles. US Patent. Date of Patent: June 21, 2005. Patent No.: US 6,908,496
- Smalley, R. E.; Smith, K. E.; Colbert, D. T.; Nikolaev, P.; Bronikowski, M. J.; Bradley, R. K.; Rohmund, F. Gas-Phase Nucleation and Growth of Single-Wall Carbon Nanotubes From High Pressure CO. US Patent. Date of Patent: July 13, 2004. Patent No.: US6,761,870 B1
- Halas, N. J.; Bradley, R. K. Partial Coverage Metal Nanoshells and Method of Making Same. US Patent. Date of Patent: Dec 9, 2003. Patent No.: US 6,660,381 B2.
- Charnay, C.; Halas, N.J.; Bradley, R. K. Reduced Symmetry Nanoparticles. Patent Application. Pub. Date: Nov 20, 2003. Pub No.: US 2003/0215638 A1

Certifications

Teaching Certificate, 2016 Lone Star College, Kingwood, TX
Texas High School Science Composite
Texas High School Math Composite
Texas High School Computer Science

Additional Experience

Research Experience for Teachers in Advanced Manufacturing, Lamar University, 2017

High School Technology Committee, Member 2016-2018

High School Physics Curriculum Writing Committee, Member 2015-2016

NASA Lunar Airborne Dust Toxicology Assessment Group, Member 2006-2007

NASA USRA Speakers Bureau, Speaker 2003-2007

NNI Grand Challenge: Nanotechnology in Space Exploration. Co-chair, organizer and author for the Astronaut Health Management Section. Pgs 45-56. Aug 24-26th 2004, Palo Alto, CA. Report Available at http://www.nano.gov/sites/default/files/pub_resource/space_exploration_rpt_0.pdf