

# BACHLIEN DANG

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Curriculum Vitae

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## BACKGROUND HIGHLIGHTS

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Highly experienced researcher skilled in the use of a variety of sophisticated research tools and processes in environmental and physical chemistry.

Accomplished scientist/faculty with strong teaching credentials designing curricula and providing instruction within various academic environments for the past eight years.

Personable and can easily interface with students, faculty and staff across diverse backgrounds.

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## EDUCATION

**Ph.D. in Environmental Chemistry & Physical Chemistry (3.78/4.00)**, 2007 – Texas Southern University, Houston, Texas.

**M.S in Chemistry (4.00/4.00)**, 2001 – Texas Southern University, Houston, Texas

**B.S. in Mathematics**, 1993 – University of Houston Downtown, Houston, Texas.

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## AREAS OF TECHNICAL EXPERTISE

- Differential Scanning Calorimetry (DSC), Thermal Gravimetric Analyzer (TGA), Dynamic Mechanical Analyzer (DMA), UV/Vis Spectrophotometer, Electrochemical Analyzer, Fourier Transform Infrared (FTIR), Nuclear Magnetic Resonance spectroscopy (NMR), Infrared spectroscopy (IR), Instron Tester.
  - Transmission Electron Microscopy (TEM), Scanning Electron Microscopy (SEM), X-ray Photoelectron Spectroscopy (XPS), Atomic Force Microscopy (AFM).
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## PROFESSIONAL EXPERIENCE

SAN JACINTO COLLEGE, Houston, Texas

**Adjunct Faculty**, 8/2008 to Present

Prepare and present lectures on topics of Inorganic Chemistry I and II. Facilitate experiments and other activities in lab. Maintain student grading and attendance records.

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UNIVERSITY OF HOUSTON DOWNTOWN, Houston, Texas

**Adjunct Faculty**, 1/2008 to Present

Provide instruction for General Chemistry Lab II course. Prepare and deliver classroom presentations on various introductory and advanced chemistry subjects. Create classroom materials and design laboratory experiments. Maintain student grading and attendance records.

HOUSTON COMMUNITY COLLEGE, Houston, Texas

**Academic Instructor**, 1/2001 to Present

Deliver classroom presentations and designed/led laboratory experiments. Provide support to students in completing assignments. Interface daily with collage faculty and staff. Maintain chemical laboratory supplies.

TEXAS SOUTHERN UNIVERSITY, Houston, Texas

**Teaching Assistant**, 1/1999 to 5/2007

Provided support to instructors of various chemistry courses. Instructed several courses. Designed and prepared chemicals for laboratory experiments.

UNIVERSITY OF HOUSTON, Houston, Texas

**Research Assistant**, 8/2001 to 12/2003

Conducted research into a variety of chemistry-related subjects. Designed and ran experiments, utilizing Excimer laser to adjust and correct the methods and powers of UV light. Worked with poisonous gasses such as HCN, BrCN and ClCN gas, as well as liquid Nitrogen at low pressure. Interfaced with gas manufacturers in procuring gasses for experiments. Tracked gas cylinder inventory in Excel. Developed and implemented safe methods for opening and cleaning laser chamber.

TEXAS SOUTHERN UNIVERSITY, Houston, Texas

**Research Assistant**, 1/2004 to 8/2007

Utilized single-wall, double-wall and triple-wall carbon nanotubes in conducting research into leading-edge nanotechnologies. Delivered presentations to high school students and teachers regarding the deposition of metal on carbon nanotube. Interfaced with research assistants from various universities.

OILPHASE, Houston, Texas

**Senior Analytical Specialist**, 1/2001 to 12/2001

Fluid Lab Services: Optimize production decisions with research-quality fluid-property measurements and expert interpretations.

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## **RESEARCH ACCOMPLISHMENTS**

US Air Force Research Laboratory, Minority Leaders Program at Texas Southern University, Houston, Texas (1/2004 to 5/2007)

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- Steered development of a novel electroplating process to modify the surface of a carbon nanotube.
- Drove design, optimization and evaluation of disperse and curing techniques of epoxy resin composites.
- Facilitated studies on carbon nanotubes-filled Epoxy, including polymer literature research, experiment design, polymer synthesis, polymer analysis, and development of technical reports and papers for publication.
- Developed chemical analysis systems utilizing HPLC, FTIR, UV/VIS spectrophotometer, and electrochemical analyzers.
- Analyzed mechanical, thermal and electrical properties of polymers filled with functionalized carbon nanotubes using DSC, TGA, and DMA.
- Collaborated with team members in revealing an important relationship between an enzyme-mediator complex formation process and a stability issue in a second-generation glucose-detecting electrochemical biosensor.
- Participated actively in a study of the effects of carbon nanotubes fillers on the curing process of epoxy resin-based composites.
- Studied the effects of purification on carbon nanotubes and epoxy resin-based composites.

University of Houston, Houston, Texas (8/2001 to 12/2003)

- Steered resolution of spectroscopic features of HCN in the ground electronic state near  $6000\text{ cm}^{-1}$  vibrational energy and in the first excited electronic state by utilizing a new approach based on collisional energy transfer at high vibrational excitation.

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## PUBLICATIONS

1. Tao, K.; Yang, S. Y.; Grunlan, C. J.; Kim, S. Y.; Deng, Y. J.; **Dang, B. L.**; Thomas, L. R.; Wilson, L. B. and Wei, X., "Effects of Carbon Nanotubes Fillers on the Curing Processes of Epoxy Resin-Based Composites." *J. Applied of Polymer Science* 2006, 102, 5248-5254.
2. **Dang, B. L.**; Wei, X.; Barrera, V. E.; Zeng, Q.; Grunlan, C. J.; Kim, S. Y.; Deng, Y. J.; Thomas, L. R.; Wilson, L. B., "Instantaneous Electrodeposition of Metal Nanostructures on Carbon Nanotubes." Submitted.
3. Wei, Xin; Grunlan, C. J.; Kim, S. Y.; **Dang, B. L.**; Barrera, E. V.; Zeng, Q.; Deng, Y. J.; Ying, Y.; Tian, F.; Thomas, L. R.; Phan, D. T. and Wilson, L. B; "Fast Metallization of Carbon Nanotubes: Methodology and Utility", to be submitted (*Advanced Material*).
4. **Dang, B. L.**; Deng, Y. J.; Tao, K. and Wei, X.; "Electrochemical Deposition of Metal Nano-Structures on Carbon Nanotubes", 232<sup>nd</sup> American Chemical Society National Meeting and Exposition. San Francisco, California, September 10-14, 2006. pp. 132-TECH

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## COLLABORATIONS

1. Professor Grunlan, C., Texas A&M, Houston, Texas.

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2. Professor Barrera, V. E., Rice University, Houston, Texas.
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## **PRESENTATION**

“Electrochemical Deposition of Metal Nano-Structures on Carbon Nanotubes”, 232<sup>nd</sup> National Meeting and Exposition of the American Chemical Society, Division of Polymer Materials: Science & Engineering at San Francisco, California, USA, September 10 – 14, 2006.

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## **HONORS & AWARDS**

- Outstanding Service in Student Support Service Program, Texas Southern University, Houston, Texas (Spring 2002 & Spring 2003).
  - Outstanding Graduate Student Award, Texas Southern University, Houston, Texas (Spring 2001).
  - Outstanding Service Member, Southeast Asian Woman’s Health Conference (1999)
  - Dean’s List, University of Houston Downtown (1986)
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## **PROFESSIONAL ASSOCIATIONS**

American Chemistry Society (2006 to Present)

Southeast Asian Woman’s Health Conference (1999)

Red Cross, Pulau Tengar, Trengganu, Malaysia (1979)