

## Biographical Sketch

Clois E. (Bert) Powell  
Associate Director  
Center for Nanophase Research  
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Texas State University-San Marcos  
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### Professional Preparation

<u>University</u>	<u>Major</u>	<u>Degree</u>	<u>Year</u>
Calif. State University at Long Beach	Chemistry	B. S.	1966
Calif. State University at Long Beach	Organic Chemistry	M. S.	1970
Rutgers University	Organic Chemistry	Ph. D.	1979

### Appointments

Texas State University-San Marcos	Associate Director	2004-present
Southern Clay Products	Senior Scientist	1993-2004
The Sherwin Williams Company	Director, Polymer R&D	1988-1993
	Section Leader/Physics and Latex Groups	1986-1988
	Group Leader/Latex Group	1986
Ashland Chemical Company	Member of Isoaset Adhesives Business Team	1985-1986
	Senior Research Chemist II	1981-1985
	Senior Research Chemist	1980-1981
Glidden Paint Company	Senior Chemist	1979-1980
	Chemist I	1976-1979
U. S. Army	Honorable Discharge, Rank E-5	1969-1971

### Publications

1. Shaito, A; Powell, C.; Beall, G.; D'Souza, L.N.A.; "Shape memory polymers based on CBDO: structural recovery effects" *Annual Technical Conference-Society of Plastics Engineers* (2008), 66<sup>th</sup> 743-745.
2. Powell, C. E.; Beall, G. W.; Booth, C;"Chemistry of Mechanical Performance: Memory, Self-Healing Behavior, and High Impact Resistance in Nanocomposites" *SAMPE Fall Technical Conference* (2008), 40<sup>th</sup> ISTC.
3. Powell, C. E., Beall, G. W., "Chap. 33, Physical Properties of Polymer/Clay Nanocomposites", *Physical Properties of Polymers Handbook, Second Edition*, ed. J. E. Mark, Springer Science+Business Media, LLC, New York, NY (2007).
4. Powell, C. E., Beall, G. W., "Physical Properties of Polymer/Clay Nanocomposites", *Current Opinion in Solid State and Materials Science*, (2006) **10**, 73-80.

5. Beall, G. W.; Powell, C. E.; Handcock, J.; Kindinger, M.; McKenzie, H. R.; Bray, A. V.; Booth, C. J.; "Physical properties of CBDO based co-polyterephthalate nanocomposites", *Applied Clay Science*, (2007) **37**, 295-306.

#### Graduate Theses/Dissertations or Exit Committees

Amber Douglas, MS Chemistry, "Property Modification via Crosslinking in CBDO Based Co-polyterephthalates".

Megan Smith, MS Chemistry, "Polyurethane Prepared from 2,2,4,4-Tetramethyl-1,3-cyclobutanediol".

#### Patents:

US 12/034,636	Self-Sealing Fastener
US 2005/0090584 A1	Preparation of Rubber Compositions with Organoclays
WO 02/070589	Preparation of Polymer Nanocomposites by Dispersion
U.S. 6,849,680	Destabilization

#### Synergistic Activities

1. Review panel for NSF, CCLI, Phase I Competition, July 25-26, 2005, and July 6-7, 2006; CAREER proposal, 2007.
2. Committee for the College of Science to recommend ARP proposals, Nov. 2005.

#### 1. Invited Talks, Lectures, Presentations:

Poster, "A Novel Series of Cyclobutanediol Based Co-polyester Nanocomposites for Clear, Light Armor", Nano Materials for Defense Applications Symposium, Feb. 21-25, 2005

Poster, "Development of a Waterbased, Sprayable Polyurethane Nanocomposite Rocket Ablative Coating", National Space & Missile Materials Symposium, June 26-30, 2006

Presentation, "Nanotechnology at Texas State University-San Marcos" Nanomaterials for Defense Applications Symposium, April 23-26, 2007

Invited Talk, "Chemistry of Mechanical Performance: Memory, Self-healing Behavior, and High Impact Resistance in Nanocomposites" 44<sup>th</sup> Annual Meeting of the Clay Minerals Society, June 2-7, 2007.

Invited Talk, "Chemistry of Mechanical Performance: Memory, Self-healing Behavior, and High Impact Resistance in Nanocomposites" SAMPE Fall Technical Conference and Exhibition Sept. 8-11, 2008

#### 1. Funded External Grants and Contracts:

- a. High Performance Biodegradable Nanocomposites for Packaging, US Army, \$50K, 2005
- b. Self Sealing Rivets, US Navy, \$180K, 2004-2005.
- c. Ablative Waterbased Coating for Rockets, US Air Force, \$50K, 2005; renewed, \$50K, 2006.
- d. Nanoflake Substrates, US Army Missile Defense Command and DARPA, \$50K, 2007.
- e. MRI, Single photon, confocal microscope, NSF, \$400,000, 2007
- f. Hetero-Functional Materials Initiative, ONR, \$73,780, 2008.
- g. Nanoflake Substrates, US Army Missile Defense Command and DARPA, \$50K, 2008 and 2009.
- h. Thermally Stable Machine Gun Barrel, Navy, \$100 K, 2009.
- i. Development of a Fire-Resistant, Thermal Barrier Coating with Low-Temperature Flexibility, Army, \$250K, 2009 & 2010.
- j. Evaluation, Prevention, and Repair of Microbial Acid-Produced Attack of Concrete, TxDOT, \$200K, 2009 & 2010.