

AMANDA ASHLEY CAIN

PROFILE

- Graduate Research Assistant in Polymer NanoComposites (PNC) Lab – J.C. Grunlan, Ph.D.
- Thin Film Material Characterization: *growth* (Ellipsometer, Reflectometer, UV-vis, QCM); *micro imaging* (TEM); *thermal stability* (TGA, vertical/horizontal flame testing)
- Technical skills include Mathematica, LaTeX

EDUCATION

May 2010 - Present	TEXAS A&M UNIVERSITY — College Station, TX PhD Student in Material Science and Engineering	Projected May 2014 <u>Cumulative GPA: 3.551 / 4.00</u>
May 2010	MILLSAPS COLLEGE — Jackson, MS Bachelor of Science, Major in Physics • Mathematics and Business Minors; Pre-Engineering Concentration	<u>Cumulative GPA: 3.265 / 4.00</u>

EXPERIENCE

TEXAS A&M UNIVERSITY – College Station, TX Graduate Research Assistant: Polymer NanoComposite Lab Advisor: Dr. Jaime C. Grunlan	May 2010 ~ present
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RESEARCH TOPICS

- Exploring suitable materials to build nanostructured thin films via layer-by-layer assembly that impart anti-flammable behavior.
- Investigating optoelectronic properties of sp² hybridized carbon allotrope transparent, conductive thin films fabricated with layer-by-layer assembly.

COMPANY PROJECTS

- Performance evaluation of flame resistant coatings for foam (Funded by Huntsman) Dec. 2010 ~ Dec. 2011

AWARDS

INTERNATIONAL LAYER-BY-LAYER SYMPOSIUM 2011 – STRASBOURG, FRANCE • Wiley-VCH Award for best poster in the area of Materials Science	March 2011
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PROFESSIONAL AFFILIATIONS

- Microscopy Society of America January 2011 ~ present
- Society of Plastics Engineers (SPE) October 2011 ~ present
- Materials Research Society December 2011 ~ present

JOURNAL PAPERS

- Y. S. Kim, R. Davis, **A. A. Cain**, J. C. Grunlan. "Development of layer-by-layer assembled carbon nanofiber-filled coatings to reduce polyurethane foam flammability." *Polymer* 2011, 52, 2847.
- G. Laufer, C. Kirkland, **A. A. Cain**, J. C. Grunlan. "Clay-chitosan nano brick wall: Completely renewable gas barrier and flame retardant nanocoatings," *ACS Applied Materials and Interfaces* **2012**, in press. [This work was already featured as News of the Week in C&EN \(5 SEP 2011\), based upon a press conference at the 242nd ACS National Meeting in Denver, CO \(30 AUG 2011\).](#)

ORAL PRESENTATIONS AND POSTERS

- "Clay-Polymer Thin Films for Imparting Flame Retardant Behavior to Fabric," by Y.-C. Li, S. Mannen, **A. A. Cain**, J. C. Grunlan, presented at the International Layer-by-Layer Symposium 2011; Strasbourg, France (3/14/2011) [*awarded best poster in Material Science division*].

- “Transparent Nanocomposites with Low Sheet Resistance via Acid Doping: An Alternative to ITO” by Y.T. Park, Aaron Ham, **A. A. Cain**, J. C. Grunlan, presented at the International Layer-by-Layer Symposium 2011; Strasbourg, France (3/14/2011).

ADVISING

Undergraduate Research Assistants: Polymer NanoComposite Lab

- Matthew Gill
“Anti-Flammable Thin-Film Coatings for Foam and Fabric.” REU 2011 Summer Program
- Arturo Mateos January 2011 ~ present
- Craig Nolan August 2011 ~ present
- Michael Wampler August 2011 ~ present

SCHOLARSHIPS AND ACHIEVEMENTS

Texas A&M University:

- Passed Material Science and Engineering PhD Qualifiers (Fall 2011)

Millsaps College:

- Millsaps Presidential Scholarship
- Millsaps Tops Scholarship
- United Methodist Triple Your Dollars for Scholars
- Millsaps Methodist Youth Scholarship
- Elks Lodge Student of the Year Scholarship
- Louisiana Fraternal Order of Police Scholarship
- Hall of Fame Recipient 2010
- Who’s Who Among College Students 2010
- Most Distinguished Woman 2010
- Archie Lamb Sportsmanship Award 2010
- Senator of the Year, 2009
- SCAC All-Sportsmanship Team, 2009
- Most Outstanding SBA Senate Committee, Campus Services, 2008
- All SCAC Academic Honor Roll 2006 – 2009
- Dean’s List 2006 – 2009
- Asked to speak at Loyola Open House – 2008, 2010
- Speaker for 2007 Graduates

CAMPUS AND COMMUNITY INVOLVEMENT

- *Finalist Judge* for Texas Junior Science & Humanities Symposium (TX A&M) January 2012
- *Lab demonstrations* for Society of Women Engineers: February 2012
High School Conference (TX A&M)
- *Society of Plastics Engineers (SPE)*
BASF Plant Tour & dinner with SPE South Texas, 2011
Chemistry Open House, 2011
- *Brazos Valley Fellowship*
Women’s Bible Study, 2010-2011
- *Bible Study Fellowship*
Women’s Bible Study, 2011-2012
- *Student Body Association:*
Executive Director of Programming, 2009
Executive Board Member, 2009
New South Senator, 2008
Chair for Campus Services, 2007-2008
Galloway Senator, 2007
Co-chair for Programming Committee, 2006
Franklin Senator, 2006
- *Volleyball Team:*
Senior and Junior Team Captain, 2008-2009
SCAC All-Sportsmanship Team, 2009
Defensive Specialist, 2006-2009
SCAC Academic Honor Roll, 2006-2009
SAAC Committee Member, 2007-2008
- *NACA National Convention for student activity boards:*
Nashville, 2009
Boston, 2010
- *Hall of Fame:*
Chair, 2009
Committee Member, 2007
Who’s Who Selection Committee, 2009
- SYE Chair, 2010
- Pi Mu Epsilon Mathematics Honor Society
- Volleyball Alumni Match Committee, 2010
- Thursday’s Bible Study, 2008-2009

- Math Club 2006 ~ 2010
 - Physics Club Member, 2007-present
 - Physics Club Secretary, 2008 ~ 2009
 - Mentor at Brown Elementary School, 2009
 - Brown Elementary School – Walk, 2009
 - 2nd Degree Black Belt Tae Kwon Do
- FCA, 2010
 - Footsteps in Hope, 2008
 - Campus Ministry Team Project Midtown, 2007, 2008
 - Legacy Campaign Fundraiser Hostess, 2006
 - Challenge 2007 Staff Member
 - Intramurals, 2006 ~ 2010

REFERENCE

Dr. Jaime C. Grunlan, Associate Professor, Department of Mechanical Engineering, Texas A&M University.
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