

Morgan A. Priolo

Materials Science and Engineering Program, Texas A&M University, College Station, TX 77843-3003

Office: (979) 862-8065; Cell: (979) 492-8954; Fax: (979) 845-3081; mapriolo25@gmail.com

EDUCATION:

- | | | |
|----------|-------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| May 2012 | TEXAS A&M UNIVERSITY
Ph. D. in Materials Science & Engineering | College Station, TX |
| | <ul style="list-style-type: none"> ▪ Dissertation: "Layer-by-layer Assembly of Nanobrick Wall Ultrathin Transparent Gas Barrier Films" | |
| May 2006 | UNIVERSITY OF TEXAS – PAN AMERICAN
B.S. in Physics and Mathematics | Edinburg, TX |

RESEARCH EXPERIENCE:

- | | | |
|----------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| July 2008
- May 2012 | TEXAS A&M UNIVERSITY
<i>Graduate Research Assistant [Advisor: J. C. Grunlan]</i> | College Station, TX |
| | <ul style="list-style-type: none"> ▪ Studying the gas barrier behavior of polymer-clay nanocomposite thin films via layer-by-layer assembly ▪ Creating super gas barrier thin films for a variety of packaging solutions ▪ First author of three refereed journal papers, to date, on graduate research ▪ Research highlighted in January 11, 2011 edition of <i>C&EN Magazine</i> ▪ Fully trained to use materials characterization instruments such as: AFM, TEM, Ellipsometry, Reflectometry, UV-Vis, ZetaPALS, QCM, TGA, and DSC ▪ Trained and supervised five undergraduate research assistants | |
| August 2006
- June 2008 | TEXAS A&M UNIVERSITY
<i>Graduate Researcher [Advisor: M. B. Weimer]</i> | College Station, TX |
| | <ul style="list-style-type: none"> ▪ Extensive use of an ESI Model 44 Laser Trimming System ▪ STM tip fabrication by electrochemical etching of Pt/Ir wire ▪ Ultra high vacuum preparation and silicon wafer handling ▪ Photomicrography using Differential Interference Contrast Microscopy ▪ Scientific instrument making using a lathe, mill, and steel heat treatment | |
| May 2005
- May 2006 | UNIVERSITY OF TEXAS – PAN AMERICAN
<i>Undergraduate Researcher [Advisors: J. S. Qualls and Y. Lin]</i> | Edinburg, TX |
| | <ul style="list-style-type: none"> ▪ Torque magnetometer production for materials characterization from 1.5 to 400 Kelvin in magnetic fields up to 17 Tesla ▪ Laser beam reflection and manipulation hardware assembly | |

TEACHING EXPERIENCE:

- | | | |
|----------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| August 2006
- June 2008 | TEXAS A&M UNIVERSITY
<i>Teaching Assistant</i> | College Station, TX |
| | <ul style="list-style-type: none"> ▪ College Physics – Mechanics and Electricity & Magnetism ▪ Scientific Instrument Making | |

PRESENTATIONS:

1. "Transparent nano brick wall super gas barrier polymer-clay assemblies," by **M. A. Priolo**, D. Gamboa, K. M. Holder, and J. C. Grunlan, presented at the 2011 MRS Fall Meeting & Exhibit in Boston, MA on November 28, 2011
2. "Ultrathin nano brick wall super gas barrier quadlayer assemblies," by **M. A. Priolo**, D. Gamboa, K. M. Holder, and J. C. Grunlan, presented at the 242nd American Chemical Society National Meeting & Exposition in Denver, CO on August 29, 2011
3. "Super gas barrier of all-polymer layer-by-layer assemblies," by Y. Yang, M. Haile, Y. Park, F. A. Malek, **M. A. Priolo**, J. C. Grunlan, presented at the 242nd American Chemical Society National Meeting & Exposition in Denver, CO on August 30, 2011
4. "Clay-polymer super gas barrier thin films via layer-by-layer assembly," by **M. A. Priolo**, D. Gamboa, K. M. Holder, and J. C. Grunlan, presented at the 8th National Graduate Research Polymer Conference at the University of North Carolina at Chapel Hill on June 9, 2010.
5. "Oxygen barrier of nano brick wall thin films," by **M. A. Priolo**, D. Gamboa, A. Ham, J. C. Grunlan, presented at the 85th Annual AAAS SWARM Division Meeting at Rice University, in Houston, TX, on April 8, 2010.
6. "Super gas barrier thin films via layer-by-layer assembly of polyelectrolytes and clay," by **M. A. Priolo**, D. Gamboa, and J. C. Grunlan, presented at the American Physical Society March Meeting 2010 in Portland, OR on March 16, 2010.
7. "Tunable gas permeability of polymer-clay nano brick wall thin films," by **M. A. Priolo**, D. Gamboa, and J. C. Grunlan, presented at the 238th American Chemical Society National Meeting & Exposition in Washington, DC on August 20, 2009.

PUBLICATIONS:

1. **Priolo, M. A.**; Holder, K. M.; Greenlee, S. M.; Grunlan, J. C.; Super gas barrier nano brick wall films via layer-by-layer assembly with large aspect ratio vermiculite. In preparation
2. **Priolo, M. A.**; Holder, K. M.; Grunlan, J. C.; Influence of clay layer spacing on the barrier of nano brick wall thin films. In preparation
3. Sojoudi, H.; **Priolo, M. A.**; Granstrom, J.; Ahumada, M.; Bynes, M.; Grunlan, J. C.; Graham, S.; A complimentary barrier performance pre-screening method using a P3HT thin film optical transmission test. In preparation.
4. Laufer, G.; **Priolo, M. A.**; Kirkland, C.; Grunlan, J. C.; High oxygen barrier, chitosan-based thin films for food packaging. *RSC Advances*, In Review.
5. **Priolo, M. A.**; Holder, K. M.; Gamboa, D.; Grunlan, J. C.; Influence of clay concentration on gas barrier of clay-polymer nano brick wall thin film assemblies. *Langmuir*, **2011**, 27 (19), 12106-14.
6. **Priolo, M. A.**; Gamboa, D.; Holder, K. M.; Grunlan, J. C., Super gas barrier of transparent polymer-clay multilayer ultrathin films. *Nano Letters* **2010**, 10 (12), 4970-4974.
7. Gamboa, D.; **Priolo, M. A.**; Ham, A.; Grunlan, J. C., Note: Influence of rinsing and drying routines on growth of multilayer thin films using automated deposition system. *Review of Scientific Instruments* **2010**, 81 (3), 036103.
8. **Priolo, M. A.**; Gamboa, D.; Holder, K. M.; Grunlan, J. C., Super oxygen barrier of polymer – clay nano brick wall thin films, SAMPE 2010 Technical Conference Proceedings: New Materials and Processes for a New Economy, Seattle, WA, May 17-20, 2010. Society for the Advancement of Material and Process Engineering, CD-ROM
9. **Priolo, M. A.**; Gamboa, D.; Grunlan, J. C., Transparent clay-polymer nano brick wall assemblies with tailorable oxygen barrier. *ACS Applied Materials & Interfaces* **2010**, 2 (1), 312-320. **This paper was featured in the Science and Technology Concentrates of C&EN (11 January 2010).**