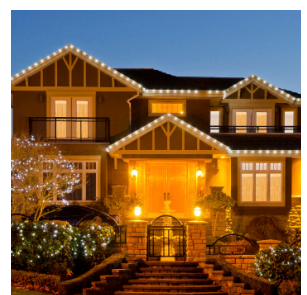
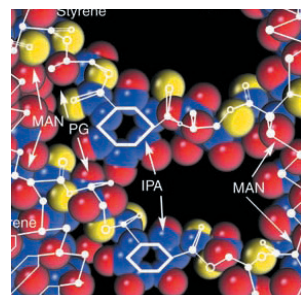


# THERMOSETTINGS

brought to you by the SPE Theroset Division.

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- Citadel Plastics Sells to A. Schulman
- SPE Theroset Division Scholarships
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## Letter from the Chair

Dear Friends of SPE Thermosets,

The SPE Thermoset Division will be bringing the Thermoset Conference back to America's heartland in 2016. The Westin in downtown Cleveland, Ohio will be the venue for this annual gathering that brings the industry's leading suppliers, molders OEMs and material manufacturers together.

We are currently accepting papers for this conference and accepting exhibitor applications. Because of Cleveland's centralized location, we anticipate that this conference will be full by February, so we do urge you to register well in advance. We have group rates negotiated with the Westin and will be providing a link for online reservations in the upcoming weeks.

Thank you for your continued support!

*Marc Imbrogno*

**SPE Thermoset Division Chair  
Director, Materials Engineering,  
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MARC IMBROGNO,  
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**THERMOSETTINGS**

*October 2015*

## Lithium Ion Battery Cell Frames

Lithium ion batteries require cell frames that provide a unique set of performance characteristics. More than 200 repeating pouch battery cells are stacked together in a lithium ion assembly. The structural frame components must maintain the integrity of all seals and electrical connections under mechanically loaded conditions. To meet the functional demands of these high capacity cells, extreme flatness (as molded), dimensional accuracy and reduced weight are critical. Other 'in battery' environmental conditions demand high dielectric strength, not to mention heat,

flame and corrosion resistance to ensure the safe, long term performance of the battery assemblies (lifespan expectation greater than ten years). A. Schulman Plastics recommended BMC 1412 (20% glass filled, unsaturated polyester) material due to its UL recognized 5-V flame ratings, ultra low shrink performance and >500 degrees F heat deflection temperature (HDT). BMC 1412 provides a low coefficient of thermal expansion (CLTE) providing operational dimensional stability across a range of use temperatures superior to most other plastics.

Additionally, BMC 1412 is injection moldable and effectively fills complex battery frame designs (without strength issues associated with flow/knit lines).

The A. Schulman Plastics team developed this new composite application through its complete range of support services (including part design, FEA, mold flow, prototype tool design/production and part design/production for initial battery builds).

A. Schulman Plastics delivers complete composite solutions to the rapidly growing ion battery market space.



ZeMC<sup>2</sup>, LLC is pleased to thank Asbury Graphite for the White Paper on 'Wear Resistant BMC Molding Compound'. White paper can be found at this [link](#).



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## Citadel Plastics Sold to A. Schulman Plastics

Citadel Plastics Holdings, Inc. (West Chicago, IL, US), a global provider of thermoplastic and engineered composite compounds (formerly known as BMCI), announced that its owners, private equity firms HGGC and Charlesbank Capital Partners, sold the company to global plastics supplier A. Schulman (Fairlawn, OH, US). The transaction closed June 1, 2015.

Citadel, acquired by HGGC and Charlesbank in 2012, is an Illinois-based provider of comprehensive composite materials solutions operating 21 production facilities in North America, Europe, Asia and Latin America. The company offers a broad portfolio of proprietary compounds to diverse customers spanning multiple industries including transportation, industrial, construction, consumer, electrical, energy, healthcare and safety.

During HGGC and Charlesbank's ownership, and in partnership with Citadel management, the company expanded its capabilities and geographic reach through acquisitions. Citadel added Lucent Polymers in 2013 and The Composites Group ("TCG") in late 2014. The combination of these businesses accelerated the evolution of Citadel into an industry leader with more than 1,300 customers and over 2,000 active products.

With the sale went Citadel's CEO Mike Huff. Kevin Andrews remains President of the Engineered Composites Division under the new title, SVP & GM, A. Schulman's Engineered Composite Division.

## Omya in Thermosets

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## SPE THERMOSET SCHOLARSHIP RECIPIENTS 2015



**James I. MacKenzie - \$2500 Graduate Scholarship  
2015 – 2016 School Year Recipient**

**Johannes Moeller**  
UMass Lowell  
Major: Plastics Engineering  
Degree: Ph.D.



**James H. Cunningham - \$2500 Undergraduate Scholarship  
2015 – 2016 School Year Recipient**

**Abigail Gilmore**  
Penn State Erie, The Behrend College  
Major: Plastics Engineering Technology, BS  
Degree: Plastics Engineering Technology, BS

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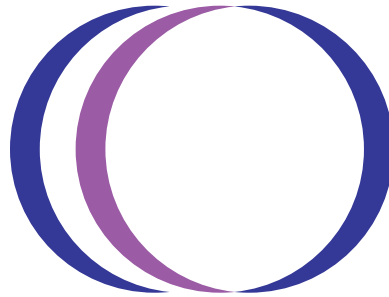
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THERMOSET

# THERMOSETTINGS

September 2015



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# Industry Announcements



## **Mar-Bal Announces Profeta as VP, Product Engineering & Manufacturing Technologies**

Chagrin Falls, OH based Mar-Bal, Inc. has promoted Vince Profeta to Vice President, Product Engineering and Manufacturing Technologies. Profeta has served as the Director of Operations at a Mar-Bal since April 2012. He will continue to report to Scott Balogh, President of Mar-Bal, Inc. “This key role encompasses our core competencies in both product engineering and advanced manufacturing functions to continue to balance the voice of the process with the voice of the customer,” stated Balogh.

Profeta has over twenty years of engineering and program management experience at Ferro Corporation, Premix, Inc. and Danaher Corporation. Vince holds a Bachelor’s Degree in Mechanical Engineering from Cleveland State University.

*October 2015*

## **★ Maria Gaeta Awarded at ‘Women Who Excel’**

Mar-Bal’s Maria Gaeta, Corporate Director of Human Resources, was recently honored at the Smart Business Northeast Ohio ‘Women Who Excel’ event. She was the recipient of the Progressive Woman Award. Greta has been with Mar-Bal since November 2012 and has earned a role on their executive committee since that time. She is accredited with the development of new policies and manuals, as well as new platforms for patrol, employee benefits, performance management and recruiting. See [link](#) for details.

## **★ 2015 Evolution of Manufacturing Award**

Mar-Bal continues to be recognized by various entities. Their latest award has gone to Aaron Bable, Mar-Bal’s Director of Information Systems & Customer Service, as winner of the 2015 Evolution of Manufacturing Award by Smart Business. Bable was central to the implementation of a new ERP provider that offered new technology and capabilities that did not incur additional operational costs to the company. The new solution saved Mar-Bal several hundred thousand dollars annually across its four plants, as well as nearly 5,000 potential machine hours. See [link](#) for further details.