



## 2017 SECTION AWARDS

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### MEETING LOCATION:

Rutgers University, Busch Campus Dining Hall

THURSDAY MARCH 22, 2018

- 4:00 - 5:30 PM Board Meeting
- 5:30 - 6:15 PM Networking
- 6:15 - 7:30 PM Welcome, introductions, & dinner
- 7:30 - 8:15 PM Technical presentation

Members and Guests	\$45
Non-Member	\$50
Students	n/c
Unemployed	\$15

RSVP by Feb.14 to Pete Hayles  
[peterhayles11@gmail.com](mailto:peterhayles11@gmail.com) 732-569-2368

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## JOINT MEETING OF THE PALISADES-NEW JERSEY SECTION AND RUTGERS STUDENT CHAPTER

**MARCH 22, 2018**

**RUTGERS UNIVERSITY, BUSCH DINING COMMONS  
(DIRECTIONS PAGE 3)**

### POWDER FLOWABILITY STUDY TO OPTIMIZE MIXING AND PREDICT FINAL PRODUCT PROPERTIES: A STUDY ON PVC FORMULATIONS.

SARA REYNAUD AND LAURA NEBEL, ARKEMA

#### Abstract:

The rheology of granular flow has recently been a topic of interest for additive manufacturing, 3D printing and laser sintering applications where the polymer is directly processed in a powder form.

In this work, we study the effect of impact modifier, filler type and level on the rheology of PVC compounds. In particular, the aggregation and demixing of CaCO<sub>3</sub> particles from the PVC matrix has been observed at certain CaCO<sub>3</sub> concentrations leading to reduced impact performance.

Dynamic powder testing was performed on 25 different PVC compounds with a concentration of CaCO<sub>3</sub> in the range of 5 to 50%wt. The data showed a good correlation between powder flow properties (BFE, SI and FRI) and formulation ingredients (IM, CaCO<sub>3</sub>, and TiO<sub>2</sub>). Temperature and humidity effects on powder flowability were also studied. A strong correlation was shown between powder flow properties (BFE and SI) and humidity. Finally, the correlation between properties-structure and performance will be investigated.

#### Speaker biographies:

**Sara Reynaud** joined the Analytical & System Research Department at Arkema in May 2012. She leads research projects on rheological behavior and mechanical properties of polymers, and works on the implementation of new analytical methodologies. Her main interest is in the characterization of branched polymers, films & coatings. More recently she introduced powder rheology analysis to help optimize formulations and solve conveying problems.

Prior to joining the company, Sara was a post-doctoral associate at the

*continued on page 2*

*Speaker biographies:*

Center for Ceramic Research at Rutgers University, where she was in charge of the Malvern rheological lab. She collaborated with industrial partners on the development of titania-alumina based materials for advanced ceramics and catalyst applications. Sara holds a Ph.D. degree in Material Science and Engineering from Rutgers University and a combined B.S./M.S. degree from the University of Naples in Italy.

**Laura Nebel** Laura Nebel joined the Analytical & System Research Department at Arkema in March 2017. She leads research projects on powder flow properties of different PVC formulations. She has presented her study on humidity and powder flowability at NATAS, and plans to continue her work on PVC powders by studying segregation effects on powder flowability.

Prior to joining the company, Laura worked for Dow Chemical as an analytical chemist in the GPC lab. She also completed a Co-Op at Dow in the microbial control department working to improve the longevity of an existing biocide. Laura holds a B.S. in Chemistry from Ursinus College where she completed multiple research projects on carbon nanotubes, and plans to attend a Master's program at Villanova in the fall while continuing to work at Arkema.

### UPCOMING MEETING DATES

April 19, 2018	Section Meeting
May 7-10	ANTEC®
May TBD	Awards Meeting
June 19	Golf Outing
July 13 or 20	Somerset Patriots Baseball Game Outing



## DRIVING DIRECTIONS TO THIS MONTH'S MEETING - RUTGER UNIVERSITY



The Board meeting and general meeting will both be held in the Busch Dining Hall. The entrance faces Lot 59 and is marked by an X. (see page 3)

**IMPORTANT NOTE:** If you need to ask for directions ask for the way to the "Faculty Dining Hall"


### BUSCH DINING COMMONS

If using Google Maps use the following address:  
Lot 59, Piscataway, NJ 08854

Note that for other map services and GPS software the following address must instead be used for Lot 59:  
\*Bowser Road, Piscataway, NJ 08854.

Additional parking is available in Lot 67 which is located on Bartholomew Rd.

Please see the next page for map  
and driving Instructions



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## Arriving via Route 18 North

- 1** Take the exit toward Campus Rd/Rutgers Stadium/Busch Campus
- 2** Merge onto Campus Road
- 3** At the traffic circle, take the 1st exit onto Bartholomew Rd.
- 4** Turn left onto Brett Road at the first intersection (4-Way Stop Sign)
- 5** Take the first right onto Bowser Rd
- 6** Last Parking lot on the Left is Lot 59.

## Arriving via 287 South

- 1** Take exit 9 for River Rd toward Bound Brook/Highland Park
- 2** Turn right onto River Road. Go 2.4 miles.
- 3** Turn left onto Hoes Ln W.
- 4** Turn slight right onto Frelinghuysen Rd. Continue onto traffic circle.
- 5** At the traffic circle, take the 3rd exit onto Bartholomew Rd.
- 6** \*follow steps 4-6 above for Brett Road to lot 59

## Arriving via 287 North

- 1** Take exit 9 for River Rd toward Bound Brook/Highland Park
- 2** Turn left onto River Road. Go 2.4 miles.
- 3** Turn left onto Hoes Ln W.
- 4** Turn slight right onto Frelinghuysen Rd. Continue onto traffic circle.
- 5** At the traffic circle, take the 3rd exit onto Bartholomew Rd.
- 6** \*follow steps 4-6 above for Brett Road to lot 59

From the South via Routes I-95 and US-1 or from the north using US-1: take Route 1 to Route 18 north, then follow instructions on Arriving via Route 18 North.

From the New Jersey Turnpike: Take Exit 9 (*New Brunswick*) of the turnpike, after the tollbooth keep right to follow Route 18 North about 3 miles to the Rutgers Campus, then follow instructions on Arriving via Route 18 North



# THE PALISADES-NEW JERSEY SECTION OF THE SOCIETY OF PLASTICS ENGINEERS OFFERS ACADEMIC SCHOLARSHIPS

Young people are not only our pride and joy but they are also the future leaders of the world. So, they deserve our blessings and support. With that in mind, the Palisades-New Jersey Section of the Society of Plastics Engineers (SPE) is proud to offer academic scholarships to associated members who have demonstrated excellence in various fields of study. The scholarship categories and criteria are listed below. If you, or a family member, are interested in participating **please submit the required documents by April 15, 2018.**



If you are not a current member of SPE but you are interested in joining or becoming affiliated with the SPE Palisades-New Jersey Section, please contact Mike Carnese, 732-208-4333, [mjcarnese@msn.com](mailto:mjcarnese@msn.com) or visit <http://www.4spe.org>

Scholarship Name	Scholarship Award	Number Available	Academic Criteria	Society of Plastics Engineers (SPE), Palisades-New Jersey Section Criteria
<b>ALVA WHITNEY GRADUATE SCHOLARSHIP</b>	<b>\$4,000</b>	<b>1</b>	Graduate Study In Any Field, Applicant must be in good academic standing	Full, Affiliate or Student SPE Member or Child or Grandchild of active Palisades-New Jersey Section Member
<b>JACK RYAN UNDERGRADUATE SCHOLARSHIP</b>	<b>\$4,000</b>	<b>1</b>	Undergraduate Study in Any Field, Applicant must be in good academic standing	Full, Affiliate or Student SPE Member or Child or Grandchild of active Palisades-New Jersey Section Member
<b>RICHARD BRADLEY AND STEPHEN DUERR UNDERGRADUATE SCHOLARSHIPS</b>	<b>\$2,000</b>	<b>2</b>	Undergraduate study in Physical, Chemical, or Materials Science/Engineering, Applicant must be in good academic standing	Full, Affiliate or Student SPE Member or Child or Grandchild of active Palisades-New Jersey Section Member
<b>FRANCIS McANDREW AND SAL MONTE HIGH SCHOOL SCHOLARSHIPS</b>	<b>\$2,000</b>	<b>2</b>	Planned Study in any field	Graduating High School Student at time of award, Child or Grandchild of an active Palisades-New Jersey Section Member
<b>PALISADES-NEW JERSEY DISCRETIONARY SCHOLARSHIPS</b>	<b>Varied</b>	<b>TBD</b>	Graduate or Undergraduate Study In Any Field, Applicant must be in good academic standing	Full, Affiliate or Student SPE Member or Child or Grandchild of active Palisades-New Jersey Section Member

To apply for a scholarship, please submit the documents listed below. Official transcripts must be submitted by postal mail or courier (i.e. FedEx, UPS) to the address below. Transcripts are considered confidential and will not be viewed by anyone outside of the evaluation team. Essays and membership information may be submitted by email to [mark.lavach@arkema.com](mailto:mark.lavach@arkema.com)  
*Submit official transcripts to: Mark Lavach, ARKEMA INC. 900 First Avenue, King of Prussia, PA 19406*

Required Documents:

- Official Transcript
- A one to two page essay describing your contributions to your chosen field of study or how the scholarship award might help you to achieve your future goals.
- Your SPE membership number or the number of the member to whom you are related (as necessary).

**The deadline for submissions April 15, 2018.**

**Awards will be announced in May 2018 and will be distributed at the final Palisades-New Jersey Section Meeting.**

## STUDENT CHAPTER NEWS

The Rutgers SPE StudentChapter visited Parkway Plastics, a jar and lid manufacturer located in Piscataway, New Jersey, on February 16th. The students were given an overview of the injection molding process for the jars and lids, and saw the injection molding machines in action. The areas for plastic scrap recycling, injection molding die storage, die changing/machining, and shipping were shown as well. The students had the



opportunity to take home small jars labeled "Rutgers SPE" that contained jelly beans - a sweet surprise. The tour was a unique and enjoyable experience for the students, and the Rutgers chapter appreciates Parkway Plastics' hospitality.

--Emma Florentine, Outreach Chair,  
SPE Rutgers Student Chapter



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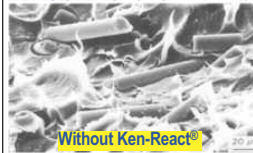


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SOCIETY OF PLASTICS ENGINEERS  
PALISADES-NEW JERSEY SECTION  
ANNUAL GOLF OUTING

PALISADES-NEW JERSEY



# Tuesday, June 19, 2018

## Oak Hill Golf Club

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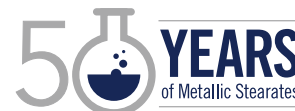
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