

The SPE Press

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September 2017

The Southern California Section of the Society of Plastics Engineers Local information on resources and education available to plastics professionals

Date: Thursday, September 28, 2017

Speaker: Brian Newsome

- Sales Director for

Applied Minerals.

Dave & Buster's 20 City Boulevard West Bldg. G Ste. 1 Orange, CA 92868

NEW LOCATION!

REGISTER NOW

Advantages of Using Nanotubes

Description: Come out and learn about the newest Nano Technology. The advantages of the Applied Minerals Hollosite, it is an FR, Reinforcement Additive, Nucleating Additives, and a Delivery system. The applications are vast and customers are continually finding new application advantages. This can be used in Thermoplastics, Thermosets, Rubber, Adhesives and Coatings. Below is the outline of Brian's Presentation.

- 1. AMI Company Overview
- 2. What is halloysite?
- 3. Properties of halloysite (Dragonite)
- 4. AMI Dragonite Product Line
- 5. Quality Assurance
- 6. Applications of Dragonite in Polymer Composites
- A. Nucleation/cycle-time reductions
- B. Mechanical Properties and Reinforcement
- C. Flame retardancy
- D. Controlled Release of Actives

Speaker: Brian Newsome – Sales Director for Applied Minerals.

Brian Newsome began his career with the BASF Corporation (formerly Engelhard Corporation) in 1994, holding a series of internal and senior sales positions, to include Asia/Pacific Account Manager. Brian briefly left BASF in 2007 to join the Balchem Corporation as Sales & Marketing Manager, returning to BASF in 2012 in a senior sales manager capacity. In 2015, Applied Minerals recruited Brian to assume



his current position of Director of Sales where he is responsible for establishing Applied Minerals' sales organization as well as developing new markets for their halloysite product line. Brian's educational background includes a Bachelors in Mathematics with Master degrees in Business, Divinity, and Project Management.

PRESIDENT'S MESSAGE



I would like to thank everyone for the very nice messages and kind words following my announcement of presidency. I was asked to elaborate on my goals for the society in this newsletter.

The Southern California section of SPE has done a great job at continually offering technical dinner meetings, plant tours, workshops, and trade fairs

year after year. It is quite a challenge to think of what we could do different to offer more to our members and plastic industry peers.

However, over the last few years, we have noticed that it has become challenging for members and non-members to commit to attending society events before, during, and after work hours. The world is changing and there is no doubt that we are all very busy people. We get it!

In response to this, SoCal SPE has decided to minimize the number of events that we host this year. This is not because we have decided to take a break and do less; in fact, it is exactly the opposite of that. We have chosen to work harder for fewer events to make sure we are providing quality and impactful meetings. We want to make sure that if you do take the time out of your day to give back to the society and the industry, we are making it worth your while!

In the upcoming years, you can expect to see new types of SPE events such as networking functions and TopCons. We are also exploring new location options in order to offer a new experience for our veteran members and hopefully attract new attendees. We will be giving companies more opportunities to advertise with us on our website, in our newsletters, and at our events. Last, but certainly not least, we will continue to strive to be your go-to source for cutting edge technical data.

As always, please do not hesitate to reach out to me personally with any suggestions and feedback. We are here for you and want to do our best job at providing our peers with what they need to be successful.

Ashley Spittle, Horn









Anaheim Council Meeting May 2017

By Vishu Shah, So Cal SPE Section Councilor, Consultek Consulting Group

ANTEC council meeting was held in Anaheim California. Over 70 members of the council from all over the world and Senior Governance attended the meeting.

First the news: SPE has a new Executive Director, Mr. Patrick Farrey (pronounced "far-ee") to replace Wim DeVos who has chosen to step down from the position and return to the industry. CEO De Vos spoke about his tenure at SPE. He highlighted the achievements of SPE staff and the entire society and said how much he appreciated all the volunteers. He stated that there is still much to do and thanked everyone. He finished by saying "Let's make SPE great again"! President Al-Zubi thanked CEO De Vos for his service and friendship. Dr. Raed Al-Zubi, the newly elected president took the opportunity to introduce his board members since this was the beginning of the new SPE operating year. He outlined the key issues for upcoming year.

- Successful onboarding of the new CEO
- Effective execution of our new governance model
- Effective execution of the 3 Year Operating Plan.
- Effective execution of our leadership deployment plan

There was Recognition of newly elected Honored Service members and Fellows of the Society as well as those Sections and Divisions which won Communication Awards and the Pinnacle award (our Southern California section won Gold!).

Again, I want to reiterate the new e-mail based Newsfeed was launched called "Plastics Insight". The newsfeed is dubbed as SPE's answer to the industry's request for a more focused delivery of critical information. This will be delivered to free subscribers every Saturday morning. This resource is a focused

... continued from page 3

way to get the most recent data regarding the areas of interest for the plastics industry. To personalize your newsletter, simply select the industries, markets, processes, materials, services and equipment of greatest interest to you at http://www.4spe.myindustrytracker.com/en/top.

Lastly, SoCal SPE Section welcomed SPE delegation and council members attending ANTEC in Anaheim in conjunction with celebrating 75th year of SPE. Everyone had a pleasant time and excellent opportunity to meet high ranking plastics professionals along with CEO Wim De Voss and incoming CEO Patrick Farrey on a boat cruise in Newport Bay on the Saturday before ANTEC. All presentations, discussions and activities during the council meeting can be found and easily accessed by visiting "Chain" on the SPE website.

Warm Regards, Vishu Shah August 5, 2017

SPE Board Meeting – Aug 02, 2017

The first board meeting under the new president of the SoCal SPE was held at the ET Horn Company in La Mirada, CA. Kerry Kanbara, Victor Okhuysen, Skip Humphrey, Michael Espinoza, Ashley Price, Vishu Shah, Matt Dauphinee, Tuan Dao and Suhas Kulkarni attended the meeting where the number of topics and changes were discussed. There were some changes in the board also. (Please see the updated list towards the end of the newsletter.) The calendar for next SPE year of 2017 – 18 was also released.

In appreciation of his efforts for the Essay contest, the Education Night and for holding the position of the Education Chair for the last several terms, Victor Okhuysen was presented with an award by the outgoing president Tuan Dao. Thank You from all of us Victor!





This is the first part on a two part series. This article will cover the benefits of SMED and the key principle. The next article will cover step by step implementation of SMED.

Lean Manufacturing is a production philosophy that emphasizes the elimination of waste: Wasted motion, scrap, wasted idle time, wasted labor, etc. There are many tools and techniques that are used to achieve a "lean state." One of these is SMED – Single Minute Exchange Die. The idea behind SMED is to reduce the set up time/changeover time or said more completely the amount of time that it takes to turn around a piece of equipment from the production of one product to the production of another product. By streamlining this process, waste is eliminated and machine utilization increases.

How powerful is this? One of my students as part of a school project worked with a blow molder specifically to reduce changeover from 18 to 6 hours, then end result was down to 3 hrs. At 20 bottles a second X 15 hrs time saved X 3600 seconds/hour =1.08 million bottles increased production per setup. Benefits: Increased production AND less warehousing (specifically the space for 1.08 million bottles!).

The benefits of streamlining the changeover for a different product are many and depending on the company the benefits chosen will vary. Some examples:

... continued from page 5

- 1. Reduction in the time from end of one product to beginning of next product. This increases the machine utilization time. For instance, if a setup cycle can be reduced from 3 hrs to 30 minutes, that makes the machine available for 2.5 more hours of production which can result in either more sales, or reduce the need to purchase more equipment.
- 2. Reduction in direct set up labor. By eliminating unnecessary tasks it will take less time for the setup technician to get the equipment and tooling ready. This provides a direct reduction in manpower. Have you ever seen people looking for the right length hose or jerry rigging a different length hose while the machine is idle?
- 3. Reduction in skill level for the changeover. Often when placing tooling it is necessary to perform precision adjustments. However, many of these adjustments can be replaced or speeded up by having a standard setup. For instance, when injection tools are replaced on the platens, prespecified stops can be placed permanently to lean the tool against them. Different sized tooling? Set the stops to the largest tool to be run, and then use spacing blocks to locate smaller tools. On the screw and barrel side of things, the equivalent is done with a set up sheet (or program). No need to dial in the process from scratch or memory each time.
- 4. Improved shop organization. In order to achieve faster change over times it can pay to dedicate set up tooling for a specific tool. The advantage is a faster and easier setup, however the obvious disadvantage is increased cost in tooling inventory. This may make sense for a job that gets changed frequently (weekly) but clearly not for a job that is run once a year. For this other job a well organized supplies room will be more than adequate. However, a list of all necessary items (tools, couplings, hoses, etc.) and a tray to collect all necessary items prior to changeover is needed.
- 5. Faster turnaround times and improved customer responsiveness. That is, it is not necessary to wait for long runs of jobs to finish, it is possible to economically make smaller batches.
- 6. Lower in process and finished goods inventory.

These are just some of the benefits that can be achieved with SMED implementation, but there are others.

While there are many benefits, there are also costs to the implementation of SMED. They go from very low to a significant expense. It is necessary to analyze each situation and determine whether the required investment for improvement is warranted. For instance, the first step of SMED consists on observing and analyzing the changeover process. If in this process it is found that there is a significant amount of wasted time such as that required to look for couplings, hoses, etc. a quick inexpensive improvement could simply be organizing all of these supplies. A second inexpensive step would be to separate the 'internal' (on-line) and 'external' (off-line) functions of the changeover. For instance, actually removing a mold from an injection press requires production to stop, this would be an internal task. Gathering tools and supplies for the changeover can be done while production is running, this would be an external task. Simply organizing changeovers in this manner will save valuable time. This separation between internal and external tasks is the main element of SMED. Other more extensive changes can be performed, such a getting a dedicated crane for each machine, but in most cases this would be unnecessarily expensive an unwarranted. In all cases an analysis of costs vs. benefits needs to be performed.

In the next article, an example of how a changeover can be improved by using SMED techniques will be presented.

Any questions or comments please contact me at vfokhuysen@cpp.edu.

EDUCATION

The College of the Extended University, Cal Poly, Pomona Plastics Engineering Technology Certificate Program

Scientific Injection Molding Fall 2017

The course emphasis is on scientific approach to a somewhat complex injection molding process in order to simplify and eliminate basic misunderstanding about processing techniques employed today throughout the industry. Students will learn the importance of understanding polymer basics, material flow properties, viscosity-shear rate curve, and major plastics variables in molding, decoupled molding techniques, data analysis and interpretation.

The course will cover fundamental and scientific approaches to material drying, venting, cooling, use of regrind, how to prepare universal set-up sheet, cycle time optimization, tooling considerations, etc. Use of modern tools and techniques such as mold flow analysis, cavity pressure transducers, and data acquisition tools along with troubleshooting techniques will also be covered.

Course Content:

- o Polymer Basics, Plastics Materials and Flow Characteristics
- o Part Design Fundamentals
- o Overview of Basic Injection Molding Process
- o Drying, Material Mixing, Coloring, Regrind Usage
- Major Process Variables
- o Decoupled Molding, Universal Set Up Sheet
- o Process Optimization techniques
- o Tooling Considerations, Venting, Cooling, Ejection
- Cycle Time Optimization and Troubleshooting Techniques
- o Mold Flow Analysis
- How to Improve Productivity
- o Modern Injection Molding Operation



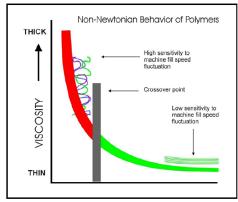
Location: Cal Poly Pomona, Bronco Student center (Lyra Room)

Instructor: Vishu H. Shah, Consultek Consulting Group www.consultekusa.com



https://www.cpp.edu/~ceu/professional-development/courses-and-certificates/engineering-manufacturing/plastics-engineering-technology-certificate.shtml

For more information, contact: College of the Extended University 909-869-2288 Or Instructor: Vishu Shah 909-465-6699 <u>vishu@consultekusa.com</u>



... continued from page 7





Over 1500 plastic professionals have taken advantage of this unique opportunity to enhance their career by devoting few Saturdays of their time to listen, learn and apply the knowledge acquired and get ahead of the pack. The information presented is all hands-on, practical and ready-to-apply. By design, excessive technical jargons and equations have been avoided.

Earn your valuable "Plastics Engineering Technology" Certificate Today.

Comments Provided by Students

- Great course, very instructional...love the PowerPoint notes.
- The instructor uses examples that are relevant to my industry/field.
- The overall explanation of the basics of Plastics was very clear and concise, explained in plain English without having to use big and sophisticated words to explain theory or function.
- The course's major strength was instructor's ability to relate to real life experience.
- Very Practical I highly recommend to anyone new to plastics industry. Hand-outs are great, I refer to them on regular basis.
- Great job! Very knowledgeable and very thankful for the time you took for teaching.

About the certificate program:

Plastics engineering encompasses the processing, design, development, and manufacture of plastics products. Cal Poly Pomona offers one of very few programs in Southern California devoted to the plastics engineering industry. This program will provide you with an in-depth look at plastics engineering technology from a technical and non-technical view.

This three-course certificate program provides practical instruction in materials, processing, product design and tooling. The practical knowledge gained on the aspects of Plastics Engineering technology can be applied to all sectors of the industry including manufacturing, design, sales, and customer service.

University of California – San Diego, Extension. October 07 – November 18, 2017 (7 Saturdays)

PLASTIC ENGINEERING – PART DESIGN FOR INJECTION MOLDING (Course Code MAE-40033) Section ID 127494

Expanding Skills in Plastic Part Design for Injection Molding

Plastics have increased their penetration of engineering applications that push the limits of part design, molding techniques and processing ranges. Plastic parts, often complex and large, are calling for better quality control and dimensional tolerances. Resin families and compositional variations have proliferated. Growth in the plastics industry has led to a constant influx of new people from other technologies who need to begin developing skills in the field of engineering plastics. People working in the industry need a good working knowledge of plastic part design.

Who Should Attend?

The course is primarily for designers, engineers, and technicians directly involved with making parts out of plastics. However, those in related activities ranging from management, purchasing, and quality control can benefit from the course by developing a better appreciation and understanding of the process of designing a plastic product.

Course Content

- Process of product design
- Fundamentals of plastics. Strength of materials, non linear considerations
- Materials selection in product design
- Molding and tooling considerations in part design
- General principles of part design. Short term loads, long term stress exposure
- Creep and relaxation in part design. Understanding safety factors in design.
- Dimensional analysis in part design
- Assembly techniques: design of snap-fit, press-fit, fasteners, ultrasonic, vibration welding, heat staking, adhesive bonding.
- Prototyping

Time/Dates: Saturdays, 9:00 AM-2:00 PM, October 07 – November 18, 2017 (7 mtgs)

Location: UC San Diego Extension. University City Center. UCC-114

Contact: http://extension.ucsd.edu/ or Helen Montgomery: hmontgomery@ucsd.edu/

Instructor: Tuan Dao, MSME. Consultant, Polymer Engineering Group, Inc. Formerly with DuPont Co., Engineering Polymers, has 30+ years experience in part design, mold design and molding techniques.

MEMBERSHIP SPOTLIGHT

SoCal SPE Wants YOU to Become a Member

The SPE Southern California Section is, for a limited time, offering one FREE registration to a single, exclusive local technical event for those who sign up for an SPE Membership! To be eligible for this special offer, visit our website www.socalspe.org to check out the event calendar and register as an SPE Member! Once a member, you will be sent a voucher to bring to the SoCal SPE event of your choice! Offer also applies to expired memberships. Don't let this opportunity pass you by, become an SPE member today!

For questions, contact Ashley Price at 562-217-1377 or aprice@ethorn.com.





















Why Join SPE?

Whether you're a plastics scientist or engineer, a business owner, marketing/sales expert, or any other professional in plastics, SPE membership can help you advance your knowledge and your career. The information you need to increase efficiency and productivity, develop your career, and add to your company's bottom line is literally right at your fingertips.

The Society of Plastics Engineers is home to nearly 20,000 plastics professionals in more than 70 countries around the world. SPE is the "go to" resource for plastics technical information.

Each Month, we will explore one of the six key benefits of becoming SPE.

- Plastics InSight A customized to your need Weekly Newsletter
- SPE Material database Access "Tons" of material in the world of Plastics
- Registration Discounts on over 4o conferences and local meetings and events
- Plastics Engineering Magazine Free subscription to leading
- SPE Online Technical Library -
- Education Cost Assistance through SPE Foundation
- The Chain Where Plastics Professionals connect and get answers

Last month, we explored key benefit of being a member – a free subscription to Plastics Engineering magazine.

This month we will talk about another key benefit of being a member – Education Cost Assistance through SPE Foundation.

The SPE Foundation funds programs and projects that support the education of plastics and polymers worldwide.

Scholarships

The SPE Foundation offers numerous scholarships to students who have demonstrated or expressed an interest in the plastics industry. They must be majoring in or taking courses that would be beneficial

to a career in the plastics industry. This would include, but is not limited to, plastics engineering, polymer science, chemistry, physics, chemical engineering, mechanical engineering, and industrial engineering. All applicants must be in good standing with their colleges. Financial need is considered for most scholarships.

More Information

Grants

Through educational grants programs, the SPE Foundation strives to provide students of all ages with the means to explore the science and technology of plastics and polymers, and for programs/projects at educational institutions that will benefit the members of the Society of Plastics Engineers, the plastics industry, and/or the general public.

SPE MEMBER
BENEFIT #5

Did you know that the SPE
Foundation can help with
your education costs?

45 + Scholarships & over
\$112,000 awarded to SPE
student members in 2015.

For more details visit: 4spe.org/foundation

Check it out for yourself: www.socalspe.org/scholarships

SPE Southern California Leadership



| SPE Leadership | | |
|----------------------------------------------------------------------------|--------------|----------------------------------------------|
| President: Ashley Spittle, Horn | 714-423-8050 | aprice@ethorn.com |
| President-Elect: | | |
| Secretary: Victor Okhuysen, Cal Poly Pomona | 909-869-2698 | vfokhuysen@csupomona.edu |
| Treasurer: – Michael Espinosa, Triangle Sales | 909-957-7412 | michael@trianglesalesinc.com |
| Councilor: Vishu Shah, Consultek | 909-465-6699 | vishu@consultekusa.com |
| Membership: Matthew Dauphinee | | |
| Committee Chair | | |
| Technical Program Chair: Suhas Kulkarni/Vishu Shah, FIMMTECH/ Consultek | 760-525-9053 | suhas@fimmtech.com |
| Directors | | |
| Past President: Rick Hays, Horn | 714-523-8050 | rhays@ethorn.com |
| Director: Kerry Kanbara, Premier Industries | 909-906-2332 | kerry@piustech.com |
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| Director: Tom Tudor, Hi-Tech Instruments | 909-647-5515 | TomTudor@socalspe.org |
| Director: Suhas Kulkarni, FIMMTECH | 760-525-9053 | suhas@fimmtech.com |
| Director: Matthew Dauphinee, Mission Plastics | 909-947-7287 | $\underline{mdauphinee@missionplastics.com}$ |
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| | | |
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| Golf Outing Chair: Kerry Kanbara, Premier Industries | 909-906-2332 | kerry@piustech.com |
| House Committee Chair: Skip Humphry, International Plastics Equipment | 909-830-7010 | intl.plasticsequip@verizon.net |
| Education Committee Chair: Victor Okhuysen, Cal Poly Pomona | 909-869-2698 | vfokhuysen@csupomona.edu |
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| Newsletter/Web Content Liaison: Vishu Shah, Consultek Consulting Group | 909-465-6699 | vishu@consultekusa.com |
| Awards Committee Chair: Markus Lettau, Engel | 951-278-5660 | Markus.Lettau@engelglobal.com |
| Special Events Chair: Matthew Dauphinee, Mission Plastics | 909-947-7287 | $\underline{mdauphinee@missionplastics.com}$ |
| | | |

Southern California SPE Events Schedule 2017-2018

| Month | Possible Dates | Newsletter | Event | Topic |
|-----------|-----------------------------------------|------------|--------------------|-------------------------------------------------------------------|
| September | 21 st or 28 th | YES | Technical Dinner | Kaolin Hollow Nanotubes & Single Walled Carbon Nanotubes |
| October | No Event | NO | No | NA |
| November | 16 th | YES | Plant Tour | Prestige/ Cambro / Oakley |
| December | No Event | NO | No | NA |
| January | No Event | YES | No | NA |
| February | 8 th | YES | TopCon @ MDM | Medical Related Anaheim 4 speakers Lunch |
| March | 15 th | YES | Education Night | NA |
| April | No Event | NO | No | NA |
| May | 24 th | YES | Workshop | Injection Molding |
| June | 21 st | YES | Golf Tournament | NA |
| July | No Event | NO | No | NA |
| August | 16 th | YES | Western Plastic TF | All |