



The SPE Press

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January 2018

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

**Date: February 9,
2018**

**Sheraton Park Hotel
at the Anaheim
Resort
1855 S. Harbor Blvd.
Anaheim, CA 92802
Phone: 714-750-1811**

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MiniTec

What's new in Medical Device Materials & Processing Technology?

The MiniTec will be held Friday, February 9, after the closing of the 2018 MD&M West Expo & Conference in the shadow of the Anaheim Convention Center.



This is a one day conference, where 12 presentations from the industry will discuss the latest developments in the area of Medical Plastics.

Session Line-up

8:00 Begin with Welcome, Introductions, Announcements and Review of Program and Sponsors & Exhibitors

Session on New Materials

8:30 Vipul Dave – Johnson & Johnson
Title: What's New in Materials for Medical Applications
Abstract: This presentation will provide an overview of what is new in medical materials



... continued from page 1

9:00 Isaac Platte – Covestro

Title: A Uniform and Unbiased Method for Testing the Chemical Resistance of Plastics in Medical Luer Connectors

Abstract: Medical Luer connector seal using the mechanical advantage of threaded collars to press a conical projection into a mating conical hole. The high hoop stresses generated can reduce the ability of plastic female to resist harsh medical liquids, such as disinfectants or drug solutions. Covestro has developed a test method proven to evaluate the chemical resistance of female Luers immersed in these liquids while being subjected to a range of sealing force. The method eliminates variability caused by Luer design or material friction and greatly reduces the number of samples required to establish a rank of chemical resistance.

9:30 Rick Finnie – M.R. Mold & Engineering

Title: Product Design Differences Between Plastic and LSR

Abstract: This presentation will outline the differences in designing products for silicone injection molding vs. plastic injection molding. Learn why some design issues make a product un-manufacturable and a slight variation of the design can make all the difference.

10:00 Morning break**10:30 Ajay Padsalgikar – Abbott (SJM)**

Title: Stability of Polyurethanes in Cardiac Applications

Abstract: Biological stability of polyurethanes is an important property for the integrity of device functionality especially for long term implantable devices. The biostability of polyurethane materials has been a subject of intense research over the years and various methodologies have been used to predict and assess this property. Accelerated in vitro testing has been used to isolate degradation mechanisms and predict clinical performance of biomaterials. However, validation that in vitro methods reproduce in vivo degradation is critical to the selection of appropriate tests. High temperature has been one of variables proposed as a method to accelerate degradation. Correlation of such data to in vivo performance is poor for polyurethanes due to the impact of temperature on microstructure. This review looks at the mechanism of polyurethane degradation and the appropriateness of different methods that have been used by researchers.

11:00 Christian Herrild - Teel Plastics

Title: Anti-counterfeiting Features in Medical Devices

Abstract: Counterfeit medical devices are a major problem in some markets, especially with the rise of production and consumption in countries with historic counterfeiting issues. Counterfeit devices can damage the reputation of a medical device OEM and cause lost sales, but more critically they can be harmful to patients. While there are many technologies and techniques that can be used to help prevent counterfeiting or detect counterfeit devices, device manufacturers need an understanding of the market dynamics for counterfeit goods and the behaviors of companies making counterfeit devices to know how best to protect their products. The market dynamics for counterfeiting and some anti-counterfeiting technologies will be reviewed.

... continued from page 2

11:30 “Chip” Kurt Breitenkamp – Exponent

Title: Assessing Potential Health Risks of Polymers Used in Wearable Devices

Abstract: The market for wearable medical devices continues to grow based on the introduction of fast, lightweight technology with improved ability to analyze and rapidly communicate patient vital signs and, in the future, changes in sweat and blood chemistry. One common trait of wearable devices, including wearable medical devices, is long-duration contact on the skin. Since most devices are constructed using many types of synthetic polymers, there has been increased awareness of how plastic device housings, adhesives, coatings, among other materials, may impact the user's health over time during use. In this presentation, we will discuss how analytical methods and literature-based toxicological risk assessments can be used to understand the potential toxicity of extractable and leachable compounds from wearable devices in simulated end-use scenarios. We will describe common leachable compounds we've identified during our testing of wearables and potential risk mitigation strategies to employ during device development.

Q & A

12:00 Lunch break

Session on New Processing Technologies

1:00 Charlie Martin – Leistritz

Title: Precision compounding via twin screw extruders for medical products

Abstract: Developed almost 100 years ago for natural rubber/plastics applications, processes via twin screw extrusion (TSE) are used to continuously compound cutting-edge plastics formulations for medical device and drug delivery systems. There are many mixing devices, but it has become evident why TSE processing offers significant advantages as compared to other manufacturing techniques. The well-characterized nature of the TSE process lends itself to ease of scale-up and process optimization, while also affording the benefits of continuous manufacturing. A comparison of the similarities and differences for a plastics format TSE and “GMP” class configuration will be presented.

1:30 Melissa Butrie - 3D Proscan

Title: Increasing Efficiency in Design and Validation of Plastic Parts Using CT Scanning

Abstract: CT scanning is being used for various industrial applications and enabling significant improvements in terms of process efficiency. It allows customers to perform defect analysis non-destructively, compare manufactured parts to CAD models or other parts, execute first article inspections and validations in less time, and reverse engineer models from legacy parts. Examples of real world scenarios, including a time and cost comparison for various dimensional inspection methods and a brief overview of the reverse engineering process, will be given. Some of the ways in which CT scanning ties into Additive Manufacturing will also be discussed.

... continued from page 3

2:00 Marcel Fenner – Priamus

Title: Process Monitoring and Control Systems as Basic Building Blocks for the 4th Industrial Revolution

Abstract: The use of cavity pressure and cavity temperature signals to monitor and control the injection molding process is state of the art in the production of technically sophisticated injection molded parts. The 4th industrial revolution is opening up untold possibilities in the automation of administrative, technical and planning processes. Such control systems are an ideal source of data of the highest relevance and information density.

Depending on the target to be achieved information from many different machines and devices can be collected and analyzed. Some examples are dryers, mold temperature controllers, hot runner controllers, robots, molds, injection molding machines and any other machine or devices with network capability. Specific gains of such systems can be a faster recognition of quality trends and correcting it accordingly, traceability, remote monitoring and controlling or the data is the base for better production planning.

2:30 Afternoon break

3:00 Suhas Kulkarni – Fimmtech

Title: Proven Methods to Reduced Process Development, Inspection & In-Process Inspection Times for Injection Molding of Medical Device Components

Abstract: Over the last several years, the requirements for medical products has changed in two ways. First the required volume of production has increased some components and assemblies by a significant amount and second, the products have become much more complicated with tighter tolerances and requirements. All this has led to increased developmental times, increased mold cavitation, increased inspection and increased costs. Understanding the molding parameters and performing a Designed Experiment (DOE) based on the molding factors can significantly reduce times and costs for development. The talk will present proven ways with some case studies and provide a road map that one could easily implement on their next project.

3:30 Steve Kurtz - Exponent

Title: A New Injection Moldable, Medical Grade HMWPE for Implant Applications

Abstract: We present the properties of a new polyolefin medical grade, GUR® 1001, which is a linear HMWPE that can be injection molded. Properties will be compared with GUR® 1020 UHMWPE. Biocompatibility data will be presented as well as an injection molding processing guideline. It will be shown that, despite its still relatively high molecular weight, injection molding of GUR® 1001 can be performed without degrading the material. Resulting properties of molded parts are comparable to compression molded parts of GUR® 1001. Furthermore, e-beam irradiation at different dosages has been performed to analyze property changes. Due to its lower molecular weight, the mechanical properties of GUR® 1001 do not reach the same level of as UHMWPE, but in certain medical applications the extraordinary wear resistance and impact strength are not required to the extent UHMW-PE grades offer.

... continued from page 4

4:00 Jurguen Giesow - Arburg

Title: 3D Printed Prototype Parts out of Production Material

Abstract: Rapid Prototyped parts through Freeforming capabilities with exactly the material that the part will be produced in mass production. Discussion on how this technology works and how it can help to quickly go through the Prototype stage and convert the generated information into the final product. Further we will review the capability of Freeforming and individualizing mass produced parts quickly in very unique ways.

4:30 Summary, closing remarks

4:45p – 6:00 Networking reception

Len Czuba, MiniTec Conference TPC Chairman
lczuba@CzubaEnterprises.com

Questions?

Call (or email) Len at +1 630.627.9242-o or +1 630.632.3560-m

For questions related to Exhibiting, Sponsorships & Registrations, contact:

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PRESIDENT'S MESSAGE



Happy New Year fellow SPE Members! The beginning of the New Year brings with it the inherent feeling of a fresh start. And speaking of fresh starts, the Southern California Section of SPE will be kicking off 2018 with our first ever MiniTec Conference! The MiniTEC will take place February 8th in Anaheim. We look forward to sharing with you all the knowledge we have regarding Plastics within the Medical Industry.

The MiniTEC isn't the only event we are looking forward to this year, we are anticipating an active 2018 with quality events including Technical seminars, Education Night, Golf Outing, Plant tours, and our Western Plastics Trade Fair.

I would like to invite you to attend any and all events that we are hosting. These meetings not only offer great ways to learn and network with fellow plastic friends, but it also gives you an opportunity to give back to the Plastics Society and help us grow our community here in Southern California.

Thank you for your continued dedication to the society. We look forward to seeing you in the New Year!

All the best,
Ashley Spittle
SoCal SPE President



Happy New Year

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DINNER MEETING WRITE-UP



We had a very successful event with one of the largest turnouts, thanks to Prestige Mold and Pres-Tek Plastics for allowing all of us to embark on an exceptionally informative tour! If you missed the plant tour, here are a few highlights.

Prestige Mold Inc. is a high-technology mold manufacturing company using robotic automation manufacturing cells to ensure ultimate quality, interchangeability, and on-time delivery. The company offers product design assistance, mold design, preproduction tooling, production tooling, hot runner molds, two-material molds, LIM molds, stack molds, tooling R&M, and mold sampling. Pres-Tek Plastics, Inc. is a world-class medical molding and technology center. The impressive facility includes a Class 8 cleanroom, Tech Center for mold qualification, Metrology Lab, validated processing, automation, and validation equipment.

After everyone had a chance to enjoy dinner and deserts also provided by the hosts, the attendees were divided into small groups to start the tour. CEO Donna Purcell personally welcomed each group and sent off on tour with a knowledgeable staff. First stop was the design group activities. Since the company's mold design process is geared toward automation and starts with a significant investment of time working with the customer to finalize the part design before mold design begins. Each new job starts with the generation of a Solidworks 3D CAD part model that is refined to ensure that it has the proper draft angles, radii and so on to facilitate molding.



The tour continued through various departments where the robotic automation was evident everywhere. We were able to see the cells fitted with a System 3R Workmaster robot and storage magazines that hold electrodes, steel workpieces, and cutting tools. Also, all the cells can accommodate System 3R's integrated tooling system. This tooling system uses standard workpiece pallets that load

... continued on page 8 and 9

into mating pneumatically operated chucks installed in the machines, allowing repeatable workpiece location on Prestige Mold's ram EDM units, CMM and high-speed milling machines. The last stop before moving on to the building next door to Pres-Tek was CMM inspection area where a Workmaster robot and 140-location storage magazine was integrated with the CMM to allow around-the-clock inspection.

Pres-Tek is 17,285 square feet facility which includes the 5,000-square-foot Class 100,000 clean room and the 2,800-square-foot controlled-environment white room. We were able to see the eight presses in its clean room, four more in the white room and an open bay for turnkey projects. All electric molding machines range from 110 tons to 300 tons along with custom part handling systems including robots, end of arm tooling, part separation units and various indexing stations.







FIMMTECH

You Are Invited!

FimmTech Inc is moving to a new location in January and is having an Open House on the 18th of January. Please mark your calendars and join us for this exciting expansion!

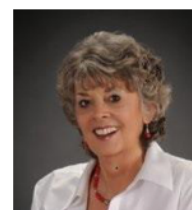


Goal of the Tech Center

- To offer courses and certifications in Plastic Injection Molding and Plastics Technology
- To expose the Molding Community to the latest technologies in Injection Molding
- To offer R&D support to companies involved with injection molding. A 66-ton Arburg molding machine with test facilities is available now with soon to be added facilities.

Agenda

- 2.00 PM to 2.30 PM: Registration
- 2.30 to 5.30 PM – Introduction and Technical Seminars
 - *Introduction by Suhas Kulkarni and Vishu Shah*
 - *'From Black Art to Science: A Brief History of Plastics Processing' by Clare Goldsberry from Plastics Today, an industrywide international magazine*
 - *'How Over The Wall Engineering Affects Process Capability and Process Robustness' by Suhas Kulkarni*
 - *'R&D a Necessary Element for Innovation and Product Function' by Vishu Shah and Tuan Dao*
 - *'The FimmTech Agenda: A look into the future offerings with some testimonials from existing customers such as Hunter Industries, MOS Plastics, Edgewell, TVS and others*



Location: 5900 Sea Lion Place, Carlsbad, CA – 92010, Tel: (760) 525



SPE ANTEC Orlando @NPE 2018

**SPE ANTEC Orlando @NPE 2018**

Society of Plastics Engineers Annual Technical Conference

Date: 5/7/2018 - 5/10/2018

Venue: Orange County Convention Center, Orlando FL, United States

WHERE THE FUTURE OF PLASTICS UNFOLDS

To maintain a competitive advantage, you need to keep up with the latest game-changing technologies and breakthrough innovations—and every three years, the world's most influential plastics trade event brings it all together for you.

NPE2018: The Plastics Show provides exclusive access to the people, processes, science and ideas that are shaping the future of plastics. Build connections, exchange ideas and explore the largest concentration of machinery, tools, technology and professional training available in today's industry marketplace.

Join 65,000+ professionals from 128 countries and from every aspect of the industry and its vertical and end-user markets—and experience the future of plastics for yourself.

ANTEC produced by the Society of Plastics Engineers, is the largest, most respected and well known technical conference in the plastics industry. As the largest technical conference for plastics in the world for over 70 years, ANTEC has successfully expanded from U.S. into Europe, India and the Middle East with further expansion to global locations in 2015 and beyond.

Each event boasts technical and business presentations on new and updated technologies, panel discussions and tutorial sessions. Networking events and student functions provide attendees with face-to-face interaction with expert representatives from the largest industry segments.

PRODUCT LIABILITIES AND TESTING

Between 1970 and 1980, one phrase caught the attention of the manufacturers and suppliers more than any other phrase: product liability. The Consumer Product Safety Commission reports that the number of product liability suits increased 983% from 1974 to 1988. In 1991 it was reported by the insurance industry that \$1.6 billion was paid out in product liability losses. They also reported that an additional \$1.1 billion was spent on legal costs (1). The cost of liability insurance has increased substantially in the last five years. Virtually every industry has been plagued with liability suits, and the plastics industry is certainly no exception.



The entire concept of product liability suits emerged from the total lack of concern regarding product safety that characterized product designers and manufacturers. The Occupational Safety and Health Administration (OSHA) reports the loss of over 10,000 lives each year and over 2 million disabling injuries annually (2). Recently, a material supplier and a plastic fittings manufacturer and distributor were sued by an angry consumer because plastic fittings failed prematurely, flooding an entire building and ruining



expensive furnishings and carpeting. In another case, a molding machinery manufacturer was sued because a machine operator lost his right hand while trying to free a part from the mold and accidentally tripped the switch that closed the mold. Yet another classic illustration of a plastic product liability case involved a small manufacturer of PVC handles that were incapable of handling high heat. The handle was softened by high temperature, exposing live electrical contacts and electrocuting a person.

From the preceding discussion, it is clear that product liability and product safety are interrelated. The majority of manufacturers, especially the smaller ones, allow themselves to become the target of such product liability suits by thinking that they are impervious to such suits. The fact of the matter is that product liability involves everyone: material manufacturers, product designers, fabricators, sellers, and installers. The manufacturer may be held liable if:

1. The product is defective in design and is not suitable for its intended use.
2. The product is manufactured defective and proper testing and inspection was not carried out.
3. The product lacks adequate labeling and warnings.
4. The product is unsafely packaged.
5. The proper records of product sale, distribution, and manufacturer are not kept up to date.
6. The proper records of failure and customer complaints are not maintained (3).

... continued on page 12

What can a machine manufacturer do to avoid expensive lawsuits? What are the steps a manufacturer of a product must take before placing the product into the hands of somewhat novice customers? How can a molder who is merely providing a service to the industry protect himself from unknowingly getting involved in such product liability problems? How many ways can a design engineer design a product with all the safeguards built-in without affecting the product's originality, cost, and his or her creativity? How can a material supplier prevent getting sued because a product made from his material failed because of product design problems and not material quality?

Obviously, there is no single answer to all of these questions. The following is a general guideline everyone should follow to steer clear of unwarranted product liability suits.

17.2. PRODUCT/EQUIPMENT DESIGN CONSIDERATIONS

The product or equipment design engineer is often considered a prime mover of product safety. The key factors to be considered in designing a safe product or equipment are consumer ignorance, manufacturing mishaps, and deliberate misuse. A team of designers must review the design individually and collectively from different viewpoints and all possible angles. If a company is not large enough to staff a team of designers, so outside consulting firm should be allowed to review the design. Product insurance representatives should also be consulted during preliminary design since many insurance companies have engineers on staff as safety consultants. The design engineer should also be familiar with all standards and regulations concerning his or her product. Some of the other minor design considerations are selecting components with a high degree of reliability, designing systems to permit ready access for operating, repairing, and replacing components, designing equipment that takes into consideration the capabilities and limitations of operators, designing components that are incapable of being revised or improperly installed, and anticipating all possible environmental and chemical hazards (4).

17.3. PACKAGING CONSIDERATIONS

Packaging in a broad sense is defined as the outer shell of the product. Since plastics are used extensively as an encloser material for products such as appliances, electrical equipment, liquid chemicals, food, and beverages, the product safety and liability considerations are of extreme interest. The product enclosures should be designed to be tamperproof to prevent the insides from being exposed to persons unfamiliar with the potential hazards. The packaging material should be tested for toxicity, chemical compatibility, and environmental resistance. Identification labels indicating product name, model number, serial and lot number, date code, and manufacturing code have been found useful in making products safer.

17.4. INSTRUCTIONS, WARNING LABELS, AND TRAINING

One of the major lines of defense against the product liability suits is providing adequate instructions, warning labels, and training to the consumer as well as to the installer and service persons. All products cannot be made 100 percent safe. There will always be some degree of risk involved in handling certain products or machinery. Therefore, designers of the product or equipment must take into account the safety aspect and come up with a systematic procedure to deal with well-designed but inherently hazardous products. First, a clear, concise, but easy to read instruction manual is in order. The writer of such an instruction manual must take into account possible misinterpretation by the reader and must be aware of the consequences in case this happens.

... continued on page 13

The machinery or product manufacturer should not only comply with government or industry regulations regarding warning labels but also place warning labels on his own wherever it is deemed necessary to prevent accidents. The warnings should not only “warn” but also indicate the consequences of disregarding the warning (5). Machinery manufacturers, as well as fabricators, can prevent the majority of accidents by implementing a proper training program for machine operators, installers, maintenance personnel, and foremen. Developing a safety training program on specific machines that the operators will be working with, having safety refresher courses, and distributing safety bulletins are a few of the most useful suggestions that have proven very successful (6).

17.5. TESTING AND RECORDKEEPING

One of the most powerful weapons any manufacturer trying to steer clear of product liability suits can have is a comprehensive testing and recordkeeping program. In many cases, quality control records may be the only defense the manufacturer may have in a courtroom.

The quality control testing should start with an inspection of the raw material and components as they are received. Whenever possible, the supplier should be required to meet military or other industry specifications. If the raw material or components are to be used in a potentially hazardous product, the supplier should be requested to provide certification along with each shipment. In-process testing is equally important. Here again, the quality control and destructive or nondestructive testing requirements should be set in accordance with industry standards. In the case of machine manufacturers, a thorough pre-shipment inspection should help eliminate any surprises. In some cases, it is advisable to retain an independent testing laboratory. The data generated by the independent test laboratories is often found to be more useful and convincing than self-generated data in courtroom defense. Four good reasons outlined below make a strong case for independent testing for product liability (7).

1. **Objectivity.** A manufacturer may be too close to his own products to maintain an impartial, unbiased viewpoint regarding their safety features. An outside safety engineer can look at the products impassionately, pointing out unsafe features that may escape an internal review.
2. **Exposure.** Independent engineering and testing laboratories make it their business to keep abreast of current specifications and safety laws as well as proposed safety legislation.
3. **Independence.** Since accountability is becoming a more important aspect of product liability, a documented report containing solid evidence of testing and fail-safe analysis by an independent firm carries much weight in establishing the intent of the manufacturer to design and make safe products before they reach the market.
4. **Anticipation.** Product testing before the injury and product liability suits is good preventive medicine.

The other important task for a manufacturer is recordkeeping. A well-organized recordkeeping policy accomplishes many objectives. First, it establishes that the company is taking reasonable precautions to produce safe products. Second, in the event of an accident or injury, it allows the manufacturer to backtrack and pinpoint the cause of failure. Third, with the help of records, the manufacturer can prove that his product did, in fact, meet the minimum requirements. It is advisable to keep records of design,

... continued on page 14

manufacturing, inspection, quality control, and testing procedures and results on file for at least five years. The retention period should be based upon individual product need. The records should also include material specification, suppliers, serial and lot numbers, and customer names (8). Other useful documents include the company's safety policy manual, design changes, failure reports, marketing and shipping records, and advertisement records.

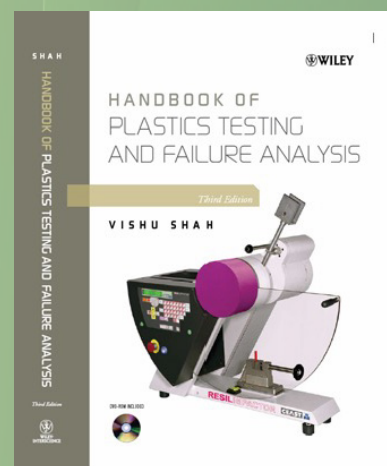
17.6. SAFETY STANDARDS ORGANIZATIONS

Appendix E lists the organizations responsible for setting standards for safety.

REFERENCES

1. Goodden, R. L., Preventing and Handling Product Liability, Marcel Dekker, Inc., New York, 1996.
2. Kolb, J. and Ross, S. S., Product Safety and Liability, McGraw-Hill, New York, 1980, p. 4.
3. Ibid., p. 12.
4. Ibid., p. 330.
5. Ibid., p. 208.
6. Allchin, T., "Product Liability in Plastics Industry," SPE Pacific Tech. Conf. (PACTEC). 57, 1975, p. 57.
7. Zavita, Reference 1, p. 34.
8. Fountas, N., "Product Liability—Prepare Now for Judgment Day," Plast. World (Feb. 1978), p. 68.

* From Handbook of Plastics Testing Technology 3rd Edition
By Vishu Shah



MEMBERSHIP SPOTLIGHT

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EDUCATION

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Plastics Engineering Technology Certificate Program

Plastics Theory and Practice / Plastics 101

Plastics Theory and Practice is part of an ongoing certificate program offered by the College of the Extended University at Cal Poly Pomona. The four-course program provides practical instruction applicable to materials, processing, product design and tooling.

When: Saturday, January 20th and 27th

Why should you attend?

This short course is designed for professionals entering the field of plastics desiring to acquire the basic knowledge of Plastics industry in general. Plastics Theory and Practice is also suitable for individuals in plastics sales, purchasing, marketing and management positions that do not possess a technical, engineering or scientific background. This course should also be valuable for technical, scientific and engineering personnel, either entering the field of plastics or interest-ed in broadening their knowledge of materials and processing techniques. The objective of the course is to expose partic-ipants to the basics and point them in right direction so that they can obtain more information through websites, books and periodicals to further enhance their career. The PowerPoint presentation used in the course is descriptive and practical and presented in simple, easy to understand language without being extremely detailed or technical. It is widely illustrated with animations, diagrams and photographs.

Who should attend?

Sales and marketing personnel, engineers, product and tool designers, purchasing managers, plant managers, tool mak-ers, molding supervisors, quality assurance personnel and anyone who wants to acquire basic knowledge of plastics in general and/or take a refresher course on the subject.

... continued on page 16

Content

Polymer structure properties and applications Processing techniques
 Plastics terminology Plastics tooling, Plastics processes
 Product design basics Assembly and secondary operations
 Material selection process Decorating and printing
 Testing and failure analysis Interpreting data sheets
 Plastics industry standards Plastics identification
 Plastics recycling

In addition, students will receive a variety of useful handouts showing How and Where to get more detailed information concerning a variety of plastics-related topics.

Date(s)	Saturdays, January 20 and 27, 2018
Course Time	8:00 a.m.-5:00 p.m.
Location	Cal Poly Pomona, Bronco Student center
Fee	\$375
Special Pricing	A 10% discount is offered on all non-credit courses based on the following: • Current Cal Poly Pomona Alumni Association members with proper ID • Current Cal Poly Pomona faculty and staff with proper I
Course Status	Non-credit
Textbook	None
Syllabus	There is no syllabus available for this course
Instructor	Vishu H. Shah
Course Code	PET120

Students may call the College of the Extended University at 909.869.2288 to be placed on the class roster; fees must be paid to guarantee a seat in any class.

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

For more information call: College of the Extended University 909-869-2288 or
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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



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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
Director: Skip Humphry, International Plastics Equipment	951-830-7010	intl.plasticsequip@verizon.net
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	mdauphinee@missionplastics.com
Committee Chairs		
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
Tech Program Chair: Suhas Kulkarni/Vishu Shah, FIMMTECH/ Consultek	760-525-9053	suhas@fimmtech.com
Advertisement Chair: Michael Espinosa, Triangle Sales	909-957-7412	michael@trianglesalesinc.com
Buyers Guide Committee Chair:		
Database Expansion Chair: Michael Espinosa, Triangle Sales	909-957-7412	michael@trianglesalesinc.com
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	mdauphinee@missionplastics.com

2017-2018 YEAR CALENDAR www.socalspe.org

SEPTEMBER 2017

S	M	T	W	Th	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

September 28

Evening Technical Meeting

Nanotubes

6:00 PM

Dave & Busters, Orange, CA

March 15

EDUCATION NIGHT 6 PM
NHRA Museum Pomona



MARCH 2018

S	M	T	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28	29	30	31

OCTOBER 2017

S	M	T	W	Th	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

No Events

No Events

APRIL 2018

S	M	T	W	Th	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30					

NOVEMBER 2017

S	M	T	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30		

November 16

Plant Tour
Prestige/Pres-Tek

6:00 PM

Rancho Cucamonga, CA

May 24

Workshop

Molding, Past-Present-Future

TBD
Irvine

MAY 2018

S	M	T	W	Th	F	S
		1	2	3	4	5
6	7	8	9	10	11	12
13	14	15	16	17	18	19
20	21	22	23	24	25	26
27	28	29	30	31		

DECEMBER 2017

S	M	T	W	Th	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30
31						



June 21



Annual Golf Outing

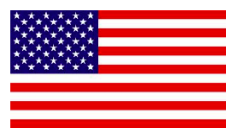
JUNE 2018

S	M	T	W	Th	F	S
					1	2
3	4	5	6	7	8	9
10	11	12	13	14	15	16
17	18	19	20	21	22	23
24	25	26	27	28	29	30

JANUARY 2018

S	M	T	W	Th	F	S
	1	2	3	4	5	6
7	8	9	10	11	12	13
14	15	16	17	18	19	20
21	22	23	24	25	26	27
28	29	30	31			

No Events



Happy 4th!

JULY 2018

S	M	T	W	Th	F	S
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15	16	17	18	19	20	21
22	23	24	25	26	27	28
29	30	31				

FEBRUARY 2018

S	M	T	W	Th	F	S
				1	2	3
4	5	6	7	8	9	10
11	12	13	14	15	16	17
18	19	20	21	22	23	24
25	26	27	28			

February 9

MiniTEC

What is new in Medical
Device Materials &
Processing Technology

Sheraton Park Hotel
Anaheim, CA

August 16



Phoenix Club
Anaheim

AUGUST 2018

S	M	T	W	Th	F	S
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22	23	24	25
26	27	28	29	30	31	