Society of Plastics Engineers Medical Plastics Division 2023 Summer Newsletter

Letter from the Chair

Greetings MPD Members & Friends! Welcome to our Newsletter!

As the first half of 2023 draws to a close – I take a moment to pause and catch my breath. The MPD Board has been extremely active and accomplished a great deal with our two premier technical events (MiniTec & ANTEC) – please see the details within our newsletter.

A huge Thank You to all of our BOD members and volunteers!

With the remainder of my letter - I wanted to take a moment to highlight the importance and benefits of professional mentoring. As we progress through our careers, having a mentor can be a valuable asset in achieving our goals and reaching our full potential. Likewise, mentoring others can be an incredibly rewarding experience that not only benefits the mentee but the mentor as well.

In the first half of this letter, I want to focus on the benefits of being mentored. First and foremost, having a mentor can provide you with valuable guidance and support. Mentors can offer insight into the industry, share their experiences and knowledge, and help you navigate difficult situations or decisions.

Continued the next page…

Inside This Edition…

Continued from the previous page…

Furthermore, a mentor can provide you with opportunities for personal and professional growth. They can challenge you to set goals, provide feedback on your performance, and help you develop the skills you need to succeed.

Another benefit of having a mentor is the networking opportunities they can provide. Mentors can introduce you to people in your field, connect you with potential employers or collaborators, and help you build your professional network.

I've been extremely fortunate to have many great mentors throughout my career (too many to count), but I would like to recognize Len Czuba (MPD Emeritus) as a key mentor in my career.

Len has been unselfish in his time and commitment to helping me develop as a professional – thank you Len!

Continued next page…

GREETINGS FROM THE CHAIR

Continued from the previous page…

Now, let's shift gears and focus on the benefits of mentoring others. First and foremost, mentoring can be incredibly rewarding. By sharing your knowledge and experience, you can help someone else achieve their goals and reach their full potential.

Furthermore, mentoring can help you develop your leadership skills. By guiding and supporting someone else, you can improve your communication skills, learn to delegate effectively, and develop your coaching abilities.

Mentoring others can also help you stay engaged and motivated in your own work. By helping someone else grow and develop, you may be inspired to take on new challenges and learn new skills yourself.

Finally, mentoring others can help you leave a lasting impact on your industry. By sharing your knowledge and experience, you can help shape the next generation of professionals and contribute to the ongoing development and growth of your field; a great opportunity to “pay-it-forward” to the next generation of plastics professionals.

In conclusion, whether you are seeking a mentor or looking to mentor others, the benefits of professional mentoring are clear. Mentoring can provide guidance, support, and opportunities for growth and development, while also allowing you to make a meaningful impact on the industry and the people around you.

Thank you for reading and enjoy our newsletter!

Best Regards,

Louis Somlai

Are you interested in volunteering for the BOD?

Please email Louis Somlai

somlai_louis@lilly.com

GREETINGS FROM THE NEWSLETTER EDITOR

Dear esteemed members of the Medical Plastics Division,

Welcome to the newest edition of our highly acclaimed newsletter! Your valuable input has been instrumental in enhancing this communication platform, and I encourage you to continue providing feedback to me at vijay.kudchadkar@westfall-technik.com.

I am thrilled to share that our recent events - MiniTec 2023 in Anaheim, CA, and Antec 2023 in Denver, CO - were enormous successes. It was truly wonderful to have the opportunity to meet face-to-face again and witness the exceptional presentations and posters. In this newsletter, you will find captivating photos capturing the essence of our events. Looking ahead, we are already gearing up for the Minitec 2024 and Antec 2024.

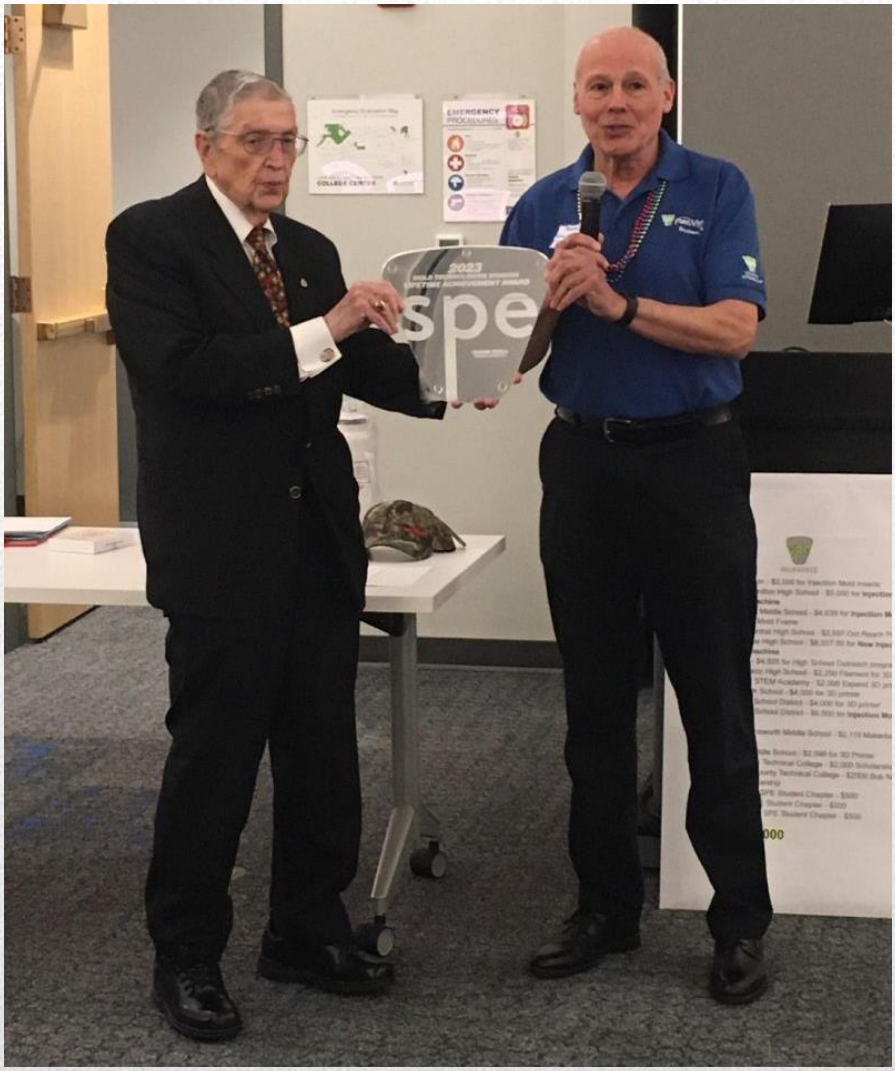
I am delighted to announce that Glenn Beall, our esteemed Emeritus member and Plastics Hall of Fame inductee, has been honored with a prestigious Lifetime Achievement Award from SPE Milwaukee. Glenn Beall, a highly accomplished engineer, consultant, educator, and editor, has made significant contributions to the field of plastics design. Throughout his illustrious career, he has been extensively involved in numerous plastics engineering associations, showcasing his immense dedication and passion.

Continued the next page…

Newsletter Suggestions?

Please email:
Vijay Kudchadkar Vijay.Kudchadkar@westfall-technik.com

Continued from the previous page…



Glenn Beall's profound impact on the world of plastics design is widely acknowledged, and he has served in a multitude of roles including engineer, inventor, consultant, educator, editor, author, and industry advocate.

In light of the negative attention surrounding the term "plastics," it is crucial to remind ourselves of the multitude of benefits plastics offer. To reaffirm this, we have compiled a comprehensive list of 100 benefits of utilizing plastics in medical devices, which you will find in the following section.

Best regards,

Vijay Kudchadkar

100 Benefits of Plastics in Medical Devices

100 Benefits of Plastics in Medical Devices

1. **Biocompatibility:** Plastics can be engineered to be biocompatible, ensuring compatibility with living tissues and minimizing the risk of adverse reactions or tissue damage.

2. **Lightweight:** Plastic materials are lightweight, making medical devices more comfortable for patients to use and reducing the strain on healthcare professionals during procedures or treatments.

3. **Versatility:** Plastics offer a wide range of properties and can be molded into various shapes, sizes, and forms, allowing for the production of diverse and customized medical devices.

4. **Durability:** Plastics are durable materials that can withstand rigorous use, repeated cleaning or sterilization processes, and mechanical stress, ensuring the longevity and reliability of medical devices.

5. **Transparency:** Certain plastics are transparent, enabling healthcare professionals to easily monitor fluid levels, detect blockages, or observe the condition of tissues during medical procedures.

6. **Cost-effectiveness:** Plastics are generally more cost-effective than alternative materials, such as metals or ceramics, making medical devices more affordable and accessible to healthcare providers and patients.

7. **Resistance to corrosion:** Plastics are resistant to corrosion, reducing the risk of degradation or contamination when medical devices come into contact with bodily fluids or undergo sterilization.

8. **Electrical insulation:** Plastics provide excellent electrical insulation properties, preventing unwanted electrical conductivity and ensuring the safe operation of medical devices that incorporate electrical components.

9. **Sterilizability:** Many plastics can be easily sterilized using common methods such as steam, ethylene oxide (EtO) gas, or gamma radiation, maintaining a high level of cleanliness and minimizing the risk of infection.

10. **Chemical resistance:** Plastics exhibit resistance to a wide range of chemicals, protecting medical devices from potential chemical interactions and maintaining their integrity and functionality.

Please note that while plastics offer numerous benefits in medical devices, each specific application and device design should be thoroughly evaluated and validated for safety, efficacy, and compliance with regulatory requirements.

11. **Flexibility:** Plastics can be designed to be flexible or elastic, allowing for the production of medical devices that conform to the body's contours, such as catheters or wound dressings.

12. **Low friction:** Certain plastics have low friction coefficients, reducing the risk of tissue damage or discomfort during medical procedures that involve the insertion or movement of devices within the body.

13. **Multi-Component Integration:** Plastics allow for the integration of multiple components within a single molded part, reducing the need for assembly and potential points of failure in complex medical devices.

14. **Recyclability:** Many medical-grade plastics are recyclable, contributing to sustainability efforts by reducing waste and resource consumption in the production of medical devices.

15. **Ease of fabrication:** Plastics can be easily fabricated using a variety of techniques such as injection molding, extrusion, or 3D printing, enabling efficient and scalable manufacturing of medical devices.

16. **Customizability:** Plastics offer a high degree of design flexibility, allowing for the creation of complex geometries or the integration of multiple functions within a single medical device.

17. **Reduced risk of contamination:** Plastics can be produced with smooth and non-porous surfaces, minimizing the risk of bacterial or fungal growth and facilitating easier cleaning and disinfection.

18. **Compatibility with imaging techniques:** Plastics can be engineered to have minimal interference with medical imaging techniques such as X-rays, CT scans, or MRI, ensuring accurate diagnosis and monitoring.

19. **Reduced allergenic potential:** Plastics can be selected or modified to minimize allergenic reactions, making them suitable for use in medical devices that come into direct contact with the skin or body fluids.

20. **Innovation and advancement:** The use of plastics in medical devices has spurred innovation and advancements in healthcare, enabling the development of novel technologies and improving patient outcomes through enhanced diagnostics, treatments, and patient care.

Please note that while plastics offer numerous benefits in medical devices, each specific application and device design should be thoroughly evaluated and validated for safety, efficacy, and compliance with regulatory requirements.

21. **Flexibility in design:** Plastics can be easily molded into intricate shapes, allowing for the creation of complex medical devices that fulfill specific functions or fit unique patient needs.

22. **Bio-inertness:** Some plastics are bioinert, meaning they do not react with bodily tissues or fluids, reducing the risk of inflammation or immune responses when used in medical devices.

23. **Resistance to stress cracking:** Plastics can be engineered to be resistant to stress cracking, ensuring their structural integrity even under high stress or strain, making them suitable for load-bearing applications.

24. **Easy sterilization validation:** Plastics can be sterilized using standard methods, and their compatibility with various sterilization techniques makes validation of the sterilization process easier.

25. **Resistance to degradation:** Plastics can withstand exposure to environmental factors such as UV radiation, humidity, or temperature variations, ensuring the long-term stability and performance of medical devices.

26. **Radio-opacity:** Some plastics can be made radio-opaque, allowing them to be easily visualized under X-ray or fluoroscopy, aiding in device placement or monitoring during medical procedures.

27. **Ease of assembly:** Plastics can be designed with features that facilitate easy assembly, reducing manufacturing complexity and enabling efficient production of medical devices.

28. **Anti-static properties:** Plastics can be formulated to have anti-static properties, preventing the buildup of static electricity and minimizing the risk of electrostatic discharge in sensitive medical environments.

29. **High strength-to-weight ratio:** Plastics can offer high strength while being lightweight, allowing for the production of sturdy yet portable medical devices, such as portable diagnostic equipment or wearable devices.

30. **Smart Material Properties:** Plastics can be engineered as "smart" materials that respond to external stimuli, enabling the development of devices with adaptive functionalities, like controlled drug release based on physiological conditions.

Please note that while plastics offer numerous benefits in medical devices, each specific application and device design should be thoroughly evaluated and validated for safety, efficacy, and compliance with regulatory requirements.

MPD Sponsor – Covestro

31. **Impact resistance:** Plastics can be engineered to have high impact resistance, making medical devices more robust and able to withstand accidental drops or impacts during use.

32. **Low thermal conductivity:** Plastics have low thermal conductivity, reducing heat transfer and minimizing the risk of thermal discomfort or burns when medical devices come into contact with the skin.

33. **Enhanced drug delivery:** Plastics can be used in drug delivery systems to control the release of medications, ensuring precise dosing, and improving therapeutic outcomes.

34. **Non-magnetic properties:** Unfilled thermoplastics are non-magnetic, making them suitable for medical devices used in environments where magnetic fields, such as MRI rooms, are present.

35. **Reduced risk of allergic reactions**: Plastics can be selected or modified to be hypoallergenic, minimizing the risk of allergic reactions in patients with known sensitivities or allergies.

36. **Compliance with regulatory requirements:** Plastics used in medical devices can meet regulatory standards such as biocompatibility, sterility, or chemical resistance, ensuring compliance with safety and quality regulations.

37. **Integration of electronics:** Plastics can be designed to incorporate electronic components, enabling the development of advanced medical devices with integrated sensors, displays, or wireless communication capabilities.

38. **Flexibility in color options:** Plastics offer a wide range of color options, allowing for color-coded medical devices, which aid in easy identification, organization, or differentiation of various devices.

39. **Improved patient comfort:** Plastics can be shaped and textured to enhance patient comfort when in contact with the skin or sensitive areas, reducing irritation or discomfort during prolonged use.

40. **Reduced noise transmission:** Plastics can help reduce the transmission of noise or vibrations, ensuring a quieter environment during medical procedures or patient monitoring.

Please note that while plastics offer numerous benefits in medical devices, each specific application and device design should be thoroughly evaluated and validated for safety, efficacy, and compliance with regulatory requirements.

41. **Compatibility with additive manufacturing:** Plastics can be effectively used in additive manufacturing techniques such as 3D printing, allowing for rapid prototyping and customization of medical devices.

42. **Enhanced ergonomics:** Plastics can be molded or shaped to optimize ergonomic design, ensuring comfortable handling for healthcare professionals and ease of use for patients.

43. **Reduced risk of breakage:** Plastics can withstand impact or bending without breaking, reducing the risk of device failure or injury in case of accidental mishandling.

44. **Scalability:** Plastics offer scalability in production, allowing for large-scale manufacturing of medical devices to meet increasing demand and provide cost-effective solutions.

45. **Improved aesthetics:** Plastics can be molded into visually appealing designs, enhancing the aesthetics of medical devices and potentially improving patient acceptance and compliance.

46. **Reduced risk of contamination transfer:** Plastics can be manufactured as single-use disposable devices, minimizing the risk of cross-contamination between patients and improving infection control practices.

47. **Remote monitoring integration:** Plastics can be seamlessly integrated with electronics, facilitating the creation of wearable medical devices that monitor vital signs and transmit data to healthcare providers for remote patient monitoring.

48. **Reduced thermal expansion:** Plastics have low thermal expansion coefficients, maintaining dimensional stability and minimizing the risk of distortion or malfunction due to temperature changes.

49. **Enhanced wear resistance:** Plastics can be formulated to have improved wear resistance, ensuring the longevity and reliability of medical devices subjected to friction or repetitive motion.

50. **Compliance with biostability requirements:** Plastics used in medical devices can meet biostability requirements, remaining stable and inert when in contact with biological fluids or tissues.

Please note that while plastics offer numerous benefits in medical devices, each specific application and device design should be thoroughly evaluated and validated for safety, efficacy, and compliance with regulatory requirements.

51. **Soft Robotics Applications:** Plastics can be used in soft robotics components of medical devices, allowing for more flexible and adaptable devices for tasks like minimally invasive surgeries or patient assistance.

52. **Improved hygiene:** Plastics can be produced with smooth surfaces and minimal joints or crevices, reducing the risk of bacteria or debris accumulation and facilitating easy cleaning and disinfection.

53. **Integration of microfluidics:** Plastics can be used in microfluidic systems, allowing for precise manipulation and control of small volumes of fluids for diagnostic or analytical purposes.

54. **Enhanced precision:** Plastics can be molded with high precision, enabling the production of medical devices with tight tolerances, critical for accurate measurements or fine surgical procedures.

55. **Reduced interference with electromagnetic fields:** Plastics can be designed to have low electromagnetic interference properties, minimizing disruption to sensitive medical equipment or electronic devices.

56. **Compatibility with drug formulations:** Plastics can be selected based on their compatibility with specific drug formulations, ensuring stability, and preventing leaching or degradation of medications.

57. **Reduced risk of contamination in cleanroom environments:** Plastics can be manufactured under controlled conditions, minimizing particle generation and reducing the risk of contamination in cleanroom environments.

58. **Low water absorption:** Plastics can have low water absorption properties, ensuring dimensional stability and minimizing the risk of swelling or degradation when exposed to moisture or fluids.

59. **Improved chemical stability:** Plastics can be engineered to exhibit excellent chemical stability, resisting degradation or reactions when exposed to various chemicals or cleaning agents.

60. **Improved tactile feedback:** Plastics can be molded or textured to provide tactile feedback, enabling healthcare professionals to have better control and precision during procedures or interventions.

Please note that while plastics offer numerous benefits in medical devices, each specific application and device design should be thoroughly evaluated and validated for safety, efficacy, and compliance with regulatory requirements.

61. **Enhanced haptic properties:** Plastics can be formulated to provide specific haptic properties, such as softness, flexibility, or rigidity, enhancing the tactile experience and control during device use.

62. **Reduced friction with other materials:** Plastics can be engineered to have low friction coefficients when in contact with other materials, minimizing wear, and enabling smooth movements in medical devices.

63. **Reduced risk of thermal injury:** Plastics can be selected or designed to have high heat resistance, reducing the risk of thermal injury when medical devices come into contact with heat sources or hot surfaces.

64. **Improved chemical compatibility with drugs:** Plastics can be chosen based on their chemical compatibility with specific drugs or drug formulations, ensuring the stability and efficacy of medications when in contact with the device.

65. **Reduced risk of device migration:** Plastics can be designed to have surface features or textures that promote secure attachment or integration within the body, reducing the risk of device migration or dislodgment.

66. **Reduced manufacturing costs:** Plastics can be produced using cost-effective manufacturing processes, reducing overall production costs and making medical devices more affordable for healthcare providers and patients.

67. **Improved patient mobility:** Medical devices made from lightweight plastics enable enhanced patient mobility and comfort, allowing individuals to go about their daily activities with greater ease.

68. **Enhanced mechanical strength:** Plastics can be engineered to have high mechanical strength, enabling the development of robust medical devices that can withstand demanding applications or harsh environments.

69. **Improved dimensional stability:** Plastics can maintain their shape and dimensions over time, ensuring the accuracy and reliability of medical devices that require precise measurements or alignments.

70. **Reduced risk of allergic dermatitis:** Plastics can be selected or modified to be hypoallergenic, minimizing the risk of allergic dermatitis or skin reactions when in direct contact with the skin.

Please note that while plastics offer numerous benefits in medical devices, each specific application and device design should be thoroughly evaluated and validated for safety, efficacy, and compliance with regulatory requirements.

71. **Wearables and IoT Integration:** Plastics can be seamlessly integrated with Internet of Things (IoT) technologies, enabling real-time data collection and transmission in wearable medical devices.

72. **Microscale Devices:** Plastics can be microfabricated to create miniature medical devices, suitable for applications like microfluidics, minimally invasive procedures, or targeted drug delivery.

73. **Enhanced connectivity:** Plastics can be integrated with connectivity features, such as wireless communication or data transfer capabilities, enabling remote monitoring or seamless integration with healthcare systems.

74. **Nanotechnology Integration:** Plastics can incorporate nanomaterials to create medical devices with enhanced properties, such as improved drug delivery or increased sensitivity in diagnostic sensors.

75. **Reduced risk of cross-contamination in multi-use devices:** Plastics can be used to create disposable components or covers for multi-use medical devices, minimizing the risk of cross-contamination between patients.

76. **Enhanced precision in drug delivery:** Plastics can be molded into precise geometries, enabling accurate drug delivery or controlled release mechanisms, ensuring optimal therapeutic outcomes.

77. **Reduced risk of infection:** Plastics can be manufactured with antimicrobial additives, reducing the risk of microbial colonization or infection associated with medical device use.

78. **Compatibility with biological assays:** Plastics can be chosen based on their compatibility with biological assays or diagnostic tests, ensuring accurate and reliable results during laboratory analysis.

79. **Enhanced chemical inertness:** Plastics can be engineered to have high chemical inertness, minimizing the risk of interactions or reactions with chemicals or biological substances used in medical procedures.

80. **Reduced risk of needlestick injuries:** Plastics can be used in the development of safety-engineered medical devices, such as needle-free injection systems, reducing the risk of needlestick injuries and associated infections.

Please note that while plastics offer numerous benefits in medical devices, each specific application and device design should be thoroughly evaluated and validated for safety, efficacy, and compliance with regulatory requirements.

100 Benefits of Plastics in Medical Devices

81. **Improved heat dissipation:** Plastics can be designed with properties that facilitate heat dissipation, preventing overheating in medical devices with heat-generating components, such as electronics.

82. **Reduced risk of device-induced trauma:** Plastics can be used in the production of medical devices with smooth or rounded edges, reducing the risk of tissue damage or trauma during device insertion or use.

83. **Reduced risk of device rejection:** Plastics can be engineered to have low immunogenicity, reducing the risk of device rejection or immune responses when used in implantable medical devices.

84. **Enhanced stability in harsh environments:** Plastics can withstand exposure to harsh environmental conditions, such as extreme temperatures, humidity, or chemical exposure, maintaining device stability and functionality.

85. **Compatibility with telemedicine:** Plastics can be integrated with telemedicine technologies, facilitating remote patient monitoring, data transmission, or virtual consultations for improved healthcare delivery.

86. **Improved patient compliance:** Plastics can be used to create user-friendly and aesthetically pleasing medical devices, enhancing patient acceptance and compliance with treatment regimens or device usage.

87. **Reduced risk of cross-reactivity:** Plastics can be selected to minimize cross-reactivity with common allergens or sensitizing agents, reducing the risk of allergic reactions or hypersensitivity in patients.

88. **Enhanced visibility in low-light conditions:** Plastics can be manufactured with properties that enhance visibility in low-light conditions, allowing for better visualization of medical devices during procedures or surgeries.

89. **Reduced risk of contamination during storage or transport:** Plastics can be used to create sterile and sealed packaging for medical devices, protecting them from contamination during storage or transportation.

90. **Improved bioabsorbability:** Some plastics used in medical devices are bioabsorbable, gradually breaking down and being absorbed by the body over time, eliminating the need for device removal.

Please note that while plastics offer numerous benefits in medical devices, each specific application and device design should be thoroughly evaluated and validated for safety, efficacy, and compliance with regulatory requirements.

MPD Sponsor – Avient

100 Benefits of Plastics in Medical Devices

91. **Compatibility with minimally invasive procedures:** Plastics can be used in the development of minimally invasive medical devices, such as endoscopes or laparoscopic instruments, enabling less invasive procedures and faster patient recovery.

92. **Aesthetic Customization:** Plastics can be molded into aesthetically pleasing designs, which is particularly relevant for external medical devices, enhancing patient self-esteem and acceptance..

93. **Enhanced visibility in imaging modalities:** Plastics can be formulated to be radiolucent or MRI-compatible, ensuring clear visibility and minimal interference in imaging modalities used for diagnostic or monitoring purposes.

94. **Reduced risk of thermal damage to surrounding tissues:** Plastics can have low thermal conductivity, minimizing heat transfer and reducing the risk of thermal damage to surrounding tissues during energy-based medical procedures.

95. **Compatibility with robotic-assisted surgeries:** Plastics can be used in the development of medical devices compatible with robotic-assisted surgeries, enabling precise movements and accurate surgical interventions.

96. **Reduced risk of contamination from medical device components:** Plastics can be manufactured with tight tolerances, ensuring proper fitting and reducing the risk of contamination from loose or ill-fitting device components.

97. **Enhanced flexibility for catheter-based procedures:** Plastics can be used in the production of flexible catheters, enabling smooth navigation through blood vessels or other anatomical structures during procedures.

98. **Reduced risk of material fatigue:** Plastics can be engineered to have high fatigue resistance, ensuring the longevity and reliability of medical devices subjected to repetitive stress or motion.

99. **Compatibility with biological scaffolds:** Plastics can be used in the development of scaffolds for tissue engineering or regenerative medicine, providing a biocompatible support structure for tissue growth or repair.

100. **Improved device tracking and identification:** Plastics can be easily marked or labeled with identification codes or tracking information, facilitating device traceability, inventory management, and patient safety.

Please note that while plastics offer numerous benefits in medical devices, each specific application and device design should be thoroughly evaluated and validated for safety, efficacy, and compliance with regulatory requirements.

Meet your SPE MPD Board of Directors

Emeritus Members

Glenn Beall, Glenn Beall Plastics Ltd

- Emeritus Member
- Historian
- glennbeallplas@msn.com

Len Czuba, Czuba Enterprises

- Emeritus Member
- Awards & Social Committee Chair
- LCzuba@CzubaEnterprises.com

Special Advisors to the Board

Vipul Davé PhD, Johnson & Johnson

- VDave1@its.jnj.com

Maureen Reitman PhD, Exponent

- mreitman@exponent.com

MEET YOUR SPE MPD BOARD OF DIRECTORS

Officers

Louis Somlai, Eli Lilly

- Chair of the Board, Communications Committee
- Term End: 2024
- somlai_louis@lilly.com

Pierre Moulinié, Covestro

- Secretary
- Term End: 2024
- pierre.moulinie@covestro.com

Ned LeMaster, DuPont Delrin

- Councilor, Vice-Chair
- Term End: 2024
- ned.e.lemaster@dupont.com

Bhavin Shah, Millipore Sigma

- Treasurer, Finance Committee
- Term End: 2024
- bhavin.shah@milliporesigma.com

Ali Ashter, Advanced Plastics Enterprise

- Past Chair
- Term End: 2024
- ashter2000@gmail.com

MEET YOUR SPE MPD BOARD OF DIRECTORS

MPD Board Members with Term Expiring in 2026

Ravishankar Ayyar, Eli Lilly

- Membership Committee Chair
- rayyar@lilly.com

Ajay Padsalgikar, Biolinq

- MPD Technical Program Committee – Co-Chair
- Padsalgikar@gmail.com

Gregorio Veléz-García, Stryker Corporation

- Membership
- Gregorio.Velez@stryker.com

Are you interested in volunteering for the BOD?

Please email Louis Somlai
somlai_louis@lilly.com

MEET YOUR SPE MPD BOARD OF DIRECTORS

MPD Board Members with Term Expiring in 2024

Margie Hanna, Czuba Enterprises

- Member - Finance Committee
- m_hanna@yahoo.com

Vijay Kudchadkar, Westfall-Technik

- Communications Committee – Newsletter Editor
- Vijay.Kudchadkar@westfall-technik.com

Kyle Kulwicki, Kimball Electronics

- Membership Committee
- kyle.kulwicki@kimballelectronics.com

Kumin (Charles) Yang, Boston Scientific

- MiniTec co-Chair
- Kumin.Yang@bsci.com

Rob Klein, AtriCure

- TPC Chair
- rklein@atricure.com

Selvaanish Selvam, Avient

- Communications Committee
- selvaanish.selvam@avient.com

Amin Sedighiamiri, AstraZeneca

- am.sadighi@gmail.com

MEET YOUR SPE MPD BOARD OF DIRECTORS

MPD Board Members with Term Expiring in 2025

Donna Bibber, Isometric Micro Molding

•dbibber@isomicro.com

Tom Meehan, Eastman

- Communications Committee
- tmeehan@eastman.com

Jeff Ellis, EWI

- JEllis@ewi.org

SPE Liaison

Kathy Schacht, SPE

- SPE Liaison
- kschacht@4spe.org

COUNCILOR'S REPORT

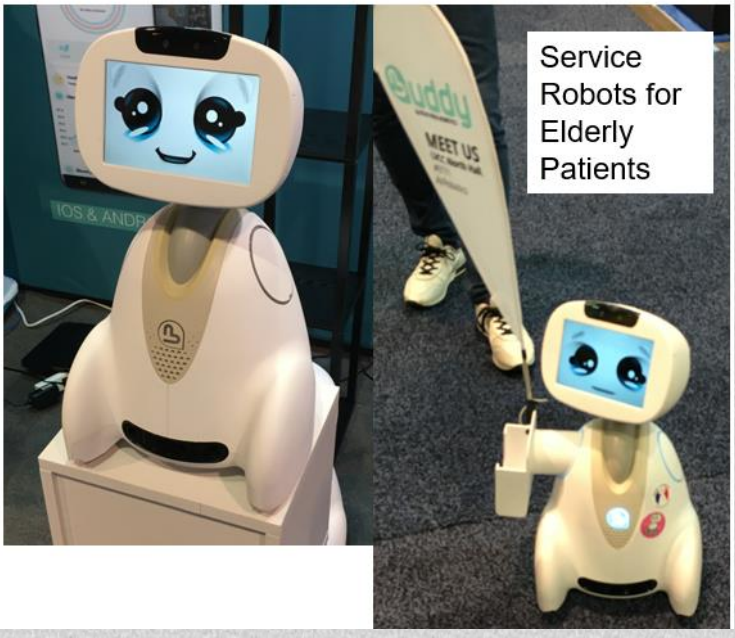
COUNCILOR'S REPORT

Dear fellow Medical Plastics Division Members,

It's hard to believe that we are almost halfway through 2023. They say time flies when you are having fun, and we've been having a ton of it this year. Seems like we hit the ground running in '23 and haven't stopped. Here are some highlights:

I was privileged to travel to Las Vegas for CES 2023. This was a first time attending this show for me, and it was massive! The show is spread across several exhibit halls and hotels. In two full days of walking, I probably only covered 80% of the exhibits, but I made sure to spend extra focus on the Healthcare section of the show. As one would expect, the focus here was "Digital Health" – with key trends like Patient Connectivity and Patient Mobility. Some device examples highlighting these respective trends were continuous glucose monitors, blood pressure smart watches, metered medicine dosing, bed sensors, and with respect to patient mobility adjustable beds, electric wheelchairs and carts were featured. Other interesting devices on display were Service Robots for personal care and VR Systems for eye care and vision correction. Below, are a few of the hundreds of photos I took:

VR Systems for Eye Care and Vision Correction



Continued next page…

Continued from the previous page…

Wheelchairs and Carts with Multi-axis Pivot

Metered Medicine Dosing

In February, I attended our Division's flagship event MiniTec during the MD&M West show in Anaheim, CA. This year we had two full days of solid content, and some excellent networking events and opportunities.

Below are some of the photos from the wine and cheese networking event at MiniTec'23:

Continued next page…

Continued from the previous page…

ANTEC '23, was held in late March this year. The event started with a Leadership Roundtable followed by a Council Session on Monday, March 27th. We learned in late January, during another Leadership Roundtable that this Council Session was not going to be a Formal Council Meeting, but rather a Council Gathering. The majority of the Leadership Roundtable and Council Gathering was centered around the recent surprise announcement by SPE HQ of an acquisition of a for profit organization called 3Dnatives. This was an informative session, and there will be an opportunity to attend a similar overview during a virtual Leadership Roundtable on June 27th in case you weren't able to attend during ANTEC. Of important note during these two sessions was the fact that the Medical Plastics Division was well represented with at least seven of our Board Members in attendance. I was also proud to share a short overview of the great work that the MPD has done over the past year including MiniTec, Monthly Webinar & Networking Events, and a Special Night for Glenn Beall. The technical content at ANTEC was limited due to the number of available tracts, but all in all, I'd say that it was decent content. The Medical Plastics tract was well attended reaching headcounts as high as 64 at a given time. It was a very busy week, and I was happy to spend time with fellow board members and industry peers. Below was a photo taken during one of the networking events at ANTEC:

Continued next page…

Continued from the previous page…

Moving on to some more current news, I attended an awesome event hosted by the Central Indiana Chapter. This great networking event, Track Day (at the famous Indianapolis Motor Speedway), was preceded by a "Fuel Up 500" breakfast hosted by Kimball Medical, who opened up their doors for a plant tour. It was really exciting to see all the great work taking place at Kimball, and also great to see some fellow MPD BOD members as seen below:

Continued next page…

Continued from the previous page…

This leads us into this week, where I attended the May Chapter Roundtable. Topics covered here were an update on the 3Dnatives acquisition, Plastics Engineering Magazine, ANTEC '24, and an announcement of the next Leadership Roundtables. As mentioned earlier, there will be a Leadership Roundtable in June, which will focus on an overview of 3Dnatives. I encourage you to attend if able. If you do not get cc'd on the invitation but would like to attend and I'll forward to you. Another major announcement from SPQ HQ: the May-June edition of Plastics Engineering will be the final print copy ever produced. From there, all content will be web based, so save your final copy if you are a collector. There was a lot of discussion around ANTEC '24. Too much to cover here, but the short summary is that the tentative dates are March 4-7, 2024, and tentative locations in lead consideration are St. Louis and Baltimore. The meeting closed with remarks from Scott Eastman – who announced that there will be another Roundtable in July focusing on the future strategy of SPE. It's my understanding that this was intended to be a council meeting, but I need to confirm with Scott. He is also looking for topics to consider for discussion during the July meeting. Please let me know if there is a topic that you'd like for me to submit.

Lastly, as fast as the first half of this year has gone, I'm certain the second half will pass by just as fast. My council term ends in June of '24, and we'll be needing a new councilor at that time. Please let me know if you'd be interested in the role of Councilor for the Medical Plastics Division. It is a great opportunity to serve our Division and also get to know the inner workings of SPE.

Thank you,

Ned

Newsletter Suggestions?

Please email:

Vijay Kudchadkar Vijay.Kudchadkar@westfall-technik.com

MiniTec 2023

MPD MiniTec at the MD&M 2023

The Medical Plastics Division held our 6th annual MiniTec in Southern California; the 3rd time in which we partnered with the MD&M Expo organizers in Anaheim. This year our committee decided to hold a 2-day conference starting on Monday of the week of the MD&M show. This gave us the opportunity to feature almost twice as many speakers as in previous 1-day MiniTec's. And since we were able to start on Monday (typically the set-up day for the MD&M Expo), this did not take anyone away from walking the show that day.

Keynote speaker: Shrojal Desai PhD, PMP, AIMBE-Fellow

Our program started strong on Monday morning with our Keynote Speaker, Dr. Shrojal Desai. The VP of Engineering, Polymers & Textiles Center of Excellence from Edwards LifeSciences. He gave an inspiring presentation on the importance of polymers in providing life-giving products to cardiac patients worldwide. After his presentation, Dr. Desai took questions and gave further insights into the importance of medical polymer technology in the development of next generation products. He remained with our MiniTec group all morning.

Continued next page…

MPD MiniTec at the MD&M 2023

Then with the help of our MPD moderators: Rob Klein, Jeff Ellis, Tom Meehan & Louis Somlai, we presented our technical program featuring six presentations in the morning and another six in the afternoon. The speakers cover a wide range of topics from Enabling materials, Precision & Tight Tolerance Molding, Process Optimization & Design and Sustainable Solutions for Devices.

Throughout the day we enjoyed coffee breaks and lunch, giving everyone the chance to network with colleagues, interact with our speakers and check in with the office.

The afternoon concluded with a very well-attended Wine & Cheese reception to allow a wider “meet & greet” with other industry professionals attending. And since the Informa conference program did not officially start until Tuesday, we had the place to ourselves!

Our Tuesday program began after the Informa Keynote speaker. We kicked off our program just after 10:00a and again featured presentations, nine in all, on Compliance in the Current Device Climate, Advance Processing with Sustainability in Mind and Extractables & Leachables in Drug Delivery Systems. Thanks to our Tuesday moderators Ajay Padsalgikar, Ali Ashter and Ned LeMaster for helping present the program.

Continued next page…

MPD MiniTec at the MD&M 2023

A special feature on Tuesday was the lunchtime “Lightning Panel” featuring three speakers each giving about a 10-minute summary of their new technology with the invitation for follow up discussions after the conclusion of the panel presentations. Many attendees remarked that they very much enjoyed hearing these abbreviated topics especially if they had not ever previously elected to sit in on the full presentations on the topic.

Many of the MiniTec attendees also were able to spend Wed & Thu of that week walking the show floor or sitting in on our Informa conference offerings. And there were several after-show receptions that allowed the conversations to continue into the evening!

To sum it up, the MiniTec 2023 in Anaheim on Feb 5 & 6, was a huge success and we especially thank all our speakers! Thanks also goes to the MPD committee that helped organize and host this event for all Medical Plastics Division members as well as industry professionals! It was a fun and enjoyable as well as educational event!

Because of the success of the MiniTec this year, we are excited to announce that we will plan to repeat the event next year on Monday and Tuesday, Feb. 5th & 6th, 2024 which is again the week of the MD&M 2024 show! We have been invited back by our Informa partners and are now accepting speaker / presentation proposals. The extended deadline is August 1st. Please consider being part of our program and sharing your latest and greatest products & technologies! For details, see our website.

Continued next page…

Finally, we must remember to thank our sponsors for this event. Their support allows the MPD to help fund students pursuing an education in our field: Plastics/Polymers and, in particular, Medical Plastics for healthcare! We thank:

- Invista
- Stress Engineering Services, Inc.
- Apiject
- Leistritz
- Delrin
- Evonik
- Barnes
- Sever
- Celanese

Sincerely,

Len Czuba & Ned LeMaster

MiniTec 23 Co-Chairs

Continued next page…

Thank you to our MiniTec 2023 Sponsors

ANTEC 2023

Medical Plastics Division at ANTEC 2023

The Medical Plastics Division had a strong showing at the SPE ANTEC 2023, held in Denver from March 26th through 30th. Although it was less than two months after the MiniTec MD&M held in Anaheim, more than 10 board members attended ANTEC (Louis, Ned, Ali, Rob, Vijay, Len, Margie, Tom, Donna, Charles, Chris).

Events during the week included: MPD Dinner on Sunday night, SPE Meeting of the Councilors on Monday, Technical talks and poster sessions Tuesday through Thursday, SPE Receptions on Monday and Tuesday night, SPE awards on Wednesday, and Division meetings on Wednesday night.

The Medical Plastics technical session was held on Wednesday with 6 excellent presentations, moderated by Charles Yang. Speakers included Xiaoping Guo from Abbott Laboratories, Md Kamrul Hasan from Pacific Northwest National Laboratory, Ralf-Urs Giesen from University of Kassel, Josh Wagner from Covestro, and Donna Bibber from Isometric Micro Molding.

MPD also held a business meeting on Wednesday, led by Rob Klein and Louis Somlai, during which we reviewed our ongoing activities and met several new people with interest in medical plastics. This was a great place to engage new members and we have already had several follow up discussions with the new folks.

Although attendance at ANTEC 2023 was low relative to pre-Covid ANTEC's, there was still a lot of value for attendees. Especially since MPD had so many board members attend, it was a great opportunity to represent MPD within the larger SPE, meet potential new members, network with SPE members and leaders outside of MPD, and plan for the future.

We did not get the opportunity to present a Medical Plastics Workshop at ANTEC. Instead, we are planning on presenting this later in the year in a virtual workshop.

Continued next page…

Continued from the previous page…

Other highlights included:

- Direct discussions with SPE leaders, including those on the Executive BoD and Foundation BoD, such as at Farrey, Ivan Lopez, Bruce Mulholland, Conor Carlin, Lynzie Nebel, Scott Eastman, Eve Vitale, Jeremy Dworshak, and others.
- Reviews of current and future business direction of SPE from HQ's perspective.
- Discussions with 3DNatives leaders Alexandre Martel and Filippos Vouliotis. 3DNatives, a networking and content generator focused on Additive Manufacturing and based in Paris, was recently acquired by SPE.
- A student poster session that was full of energy and a great way to engage with students. There were ~5 posters out of ~60 that were directly related to medical plastics.
- Excellent networking with the more than 10 MPD board members who attended – great food, drinks, and conversation!

As expected, the major theme of ANTEC 2023 was Sustainability, in various forms, including for electric vehicles. But there also many talks on improved processing and rheology, new resins and additives, analysis methods, digital methods, additive manufacturing, and others.

Overall, three major themes were clear from ANTEC 2023. First, the in-person interactions with core SPE members are very important to all of us. ANTEC gives us an opportunity to network directly with non-MPD SPE leaders as well as students and potential new members that we do not have elsewhere. For example, we made contacts with several academic professors and students who we are planning to engage further. Also, we can get valuable face time with SPE leaders that would be difficult to get elsewhere.

Second, the annual ANTEC conference has declined from pre-Covid years. For MPD, this is in contrast to our MiniTec at MD&M West, which has had steady attendance relative to pre-Covid and grown in the number of presentations and sponsors.

Continued next page…

Continued from the previous page…

Third, some of the technical divisions and regional divisions have done well to weather the Covid years. This includes those that have either strong regional links (Automotive & Detroit/Chicago; Polyolefins & Houston; etc.) or ones that have active leadership (MPD, Rheology, Colors and Additives, etc.).

In summary, ANTEC 2023 was a successful event and an excellent venue for MPD members to network both internal and external to MPD, and to learn about recent activities in the larger SPE sphere. We appreciate all who took the time to attend and present!

Sincerely,

Rob Klein

Technical Program Chair, MPD Board of Directors

Speaker: Joshua Wagner

"Leveraging the Chemistry and Properties of Polycarbonate to Achieve Maximum Productivity, Lower Energy Consumption, Reduce Waste and Lower Carbon Footprint"

Speaker: Xiaoping Guo

"Formulary and Thermo-Chemical Property & Behavior of a Medical-Grade, UV-Curable Epoxy Adhesive"

Continued next page…

Speaker: Md Kamrul Hasan

"Effects of Ionizing Irradiation on Mechanical Properties of Polymeric Medical Devices"

Speaker: Donna Bibber

"A Comparison for Micro Applications: 3D Printed Parts, Parts Molded from 3D Printed Molds, and Parts Molded from Traditional Molds"

Continued next page…

Speaker: Ralf-Urs Giesen

"Multicomponent Injection Molding With Liquid Silicone Rubber (LSR) and Acrylonitrile-Butadiene-Styrene (ABS) for Medical Device Applications"

Speaker: Xiaoping Guo

"Justification of a Molten Polymer Process Change to a Legally Marketed Medical Device via Comparative Statistical Analysis of Thermal Stabilities of Material"

Continued next page…

Treasurer's Report

TREASURER'S REPORT – Bhavin Shah

SPE MPD Q1 2023 TREASURER'S REPORT

Financial Report for the Period:	Jan 1, 2023 – March 31, 2023
Section/Division Name:	Medical Plastics D36
Balance as of Jan 1, 2023	**$ 43,236.25**
Income	
MiniTec 2023 Sponsorship	7,237.50
Student Scholarship reserved fund return from SPE Foundation	10,000.00
Total Income	**$ 17,237.50**
Expenses	
Glenn Beall Recognition Award Night Speaker Registration expense report	250.00
MiniTec 2023 expense (reception, poster, gift cards, etc)	4,807.13
MPD Board dinner	1,039.72
Funds transferred to CD's	30,000.00
Total Expenses	**$36,096.85**
Ending Balance as of March 31, 2023	**$ 24,376.90**

Do you have questions about the Treasurer Report?

Please email Bhavin Shah
treasurer.mpd@gmail.com

Upcoming Events

SPE MPD WEBINARS

The Medical Plastics Division and Webinar Team plans to host a series of webinars during 2023, with a goal of at least three or four. Some of the topics in consideration include: Advances in Medical Tubing Materials, Drug Delivery and Implantable Materials, Materials for Excipient Release, Relevant Changes in Regulatory Directives, Biodegradable & Resorbable Polymers in Med Device, Best Practices for Introduction of New Polymers in Med Device, Speed to Market through Improved Development, and Advances in Friction Reducing Materials. We are even considering a series on project management.

We welcome your interest to participate, as well as suggestions for topics and/or speakers. Please contact the MPD Webinar team:

Pierre Moulinié (pierre.moulinie@covestro.com),
Ned LeMaster (ned.e.lemaster@dupont.com)

Upcoming Events

spe MEDICAL PLASTICS

Oct 4-5, 2023
Virtual

March 4-7, 2024
St. Louis, MO

MiniTec 2024

MPD Workshop

Antec 2024

Feb 5-6, 2024
Anaheim, CA

Please visit **mpd.4spe.org** for more details

Are you interested in sponsoring MPD events?

Please email: Christopher Konitzer, christopher.konitzer@avient.com

MPD SPONSORSHIP OPPORTUNITIES

SOCIETY OF PLASTICS ENGINEERS – MEDICAL PLASTICS DIVISION

About Us - The Medical Plastics Division exists to encourage the interchange of technical and regulatory information on the polymer materials/components used in medical devices and in device containers among the scientists and engineers who are working in medical device and related industries.

With over several hundred members and webinars, newsletters, and conferences arranged every year, MPD allows sponsors a unique opportunity to establish deep connections within the plastics community.

MPD NEWSLETTER SPONSORSHIP OPPORTUNITY

Be a sponsor on our Award-winning Division Newsletter! Below are the prices and sizes available for purchase. Do not miss this rare opportunity to have your company seen by thousands of readers every year!

Full page - $1500
Half page - $850
Quarter Page - $450
Eighth Page - $250

The newsletter, as scheduled, is prepared and circulated four times per year. Every MPD member receives a copy emailed directly to their listed address. Additional copies are also circulated via the Chain and broader social media (LinkedIn, Twitter) in our continuing effort to reach new and prospective members and other interested individuals.

Follow us on our social media platforms to stay up to date on the latest medical plastics news!

- **SPE - Medical Plastics Division Micro Website**
- **SPE - Medical Plastics Division - LinkedIn**
- **SPE - Medical Plastics Division - Twitter**

BENEFITS OF BEING A SPONSOR:

- INSTANT MARKET ATTENTION FROM HUNDREDS OF MEMBERS
- LOGO AND AD PLACEMENT ON NEWSLETTERS, WEBINARS, AND CONFERENCES
- ACCESS TO MPD BOARD AND QUARTERLY UPDATES
- SOCIAL MEDIA POSTS

Are you interested in sponsoring MPD events?

Please email: Christopher Konitzer, christopher.konitzer@avient.com