RECYCLING

RECYCLING NEWSLETTER

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Plastics Sustainability Part 1 – *"Don't Bother Recycling"*

Melissa L. Kurtz, The Madison Group

Our Love/Hate Relationship

Plastics have been receiving increased attention in the media over the years as the result of heightened awareness over their environmental impact. Some of these messages are disturbing and pessimistic while others are hopeful and optimistic. If you, like myself, love this planet, it can be very confusing as to what to make of these mixed messages. This series will explore the controversy over plastics and how we can start to feel good about them again.

"Don't Bother Recycling"

Beginning in 2018, China would no longer accept the United States' contaminated plastic waste. Because shipping this waste to China was cost neutral, the United States had been slow to develop the appropriate facilities.

Bales of crushed PET bottles.

On top of that, the price of plastics was so low that it was often not financially worth recycling. This left waste management companies largely with plastic waste that no one wanted. They would have to pay a premium to have the plastic waste recycled or pay less to just incinerate it or have it placed it in a landfill.

Plastics can take up to 1,000 years to decompose in a landfill, which hardly seems like a convenient way to"get rid of them."Landfills can emit harmful gasesinto the earth's atmosphere and have the risk of contaminating groundwater in the region if not properly contained. Plastics can be incinerated and at the same time energy can be recovered from their combustion. Although this option may create some energy it also produces greenhouse gases and has the potential to release other hazardous chemicals into the air.

Plastic packaging, which represents 40% of total plastic production[1], is one of the most problematic types of plastic. Plastic packaging is designed for single-use and is difficult to recycle due to product contamination or material separation issues, in the case of multi-layered packaging.

Plastic packaging thrown in trash can.

If we give up and throw our recyclables in the trash, change will not come. Only if we recycle and recycle to our fullest extent will demand be created to drive innovation in this space and change the economics. In 2015, only 20.6% of plastic packaging waste was collected worldwide to be recycled.[2]

Winds of Change

There have been many positive signs that change is coming, although they do not get their fair share in the media, some of these include:

- **PureCycle Technologies** is using a new method to restore used polypropylene into resin that is effectively as good as new. Production is planned to begin in 2021.

- **Brightmark Energy** is using plastics renewal technology to turn polyethylene and polypropylene waste into diesel fuel and naptha. Their facility is scheduled to be completed by the end of 2020.

- **IBM** has invented a new recycling method for PET, called **VolCat**, which relies on a catalytic chemical process rather than mechanical separation and washing.

- **Terracycle** has partnered with a variety of companies to offer free, national recycling solutions for hard-to-recycle waste stream like multilayer packaging.

As we wait for the recycling industry to change, there are other steps that can be taken to lessen our impact to the planet. The first and foremost being, to reduce our dependence on single-use plastics. A simple start is to use a reusable water bottle that you take everywhere. If you are a soda drinker then try making homemade soda using reusable containers or choose an aluminum can over a plastic bottle. Aluminum recycling programs are financially viable, and aluminum can be recycled infinitely. Novel companies like Loop are also presenting solutions by offering consumable products in durable, reusable packaging.

Reducing consumption of single-use plastics has the added benefit of minimizing resource consumption and pollution associated with making the resin and product in the first place. The plastics industry is the fastest-growing source of industrial emissions, with 99% of the plastics market derived from fossil fuels.[3]

Alternatively, a concerted effort can be made to purchase products that have been created with recycled material. In doing so, you are demonstrating with your buying power that these types of products are important. This effort can encourage those companies to continue to make products with recycled packaging and other companies to follow in their footsteps.

Many of us bought into plastics and the dream that was sold along with them of recycling. The current state of recycling is in disarray, but with the need and motivation will come innovative ways to solve this problem. It may not be overnight. So, until then, keep recycling and supporting products that incorporate recycled material. |

Cleaning product with 100% recycled plastic packing.

[1] Lisa Anne Hamilton and Steven Feit,"Plastic & Climate: The Hidden Costs of a Plastic Planet,"Center for International Environmental Law (May 2019): 57

[2] Ibid., 55.

[3] Ibid., 8.

Did you know the SPE Foundation offers numerous scholarships to students who have demonstrated or expressed an interest in the plastics industry?
Visit www.4spe.org/foundation for more information.

BIODEGRADABLE POLYMERS IN VARIOUS ENV
According to Established Standards & Certificatio

NOTES

proven biodegradability

proven biodegradability for certain grades

biodegradability not proven

The biodegradability of plastics derived from these biodegradable polymers can only be guaranteed if all additives and (organic) fillers are biodegradable, too. Dying and finishing of cellulosic fibres, for example, may prevent their biodegradation in the environment.

Biodegradability depends on the complex biogeochemical conditions at each testing site (e.g. temperature, available nutrients and oxygen, microbial activity, etc.). Therefore, these generalised claims about biodegradation can only serve as approximations and need to be confirmed by standardised testing under lab conditions. In-situ behaviour can vary, depending on the mentioned conditions, size of the plastic, grade of the polymer and other factors. For instance, biodegradation testing is often performed after milling, showing the inherent nature of the material to biodegrade. In reality, the same level of biodegradation will be obtained, be it possibly within a different timeframe.

SLOWER BIODEGRADING POLYMERS

The polymers shown in the poster are rapidly biodegraded in the labelled environments, within the time frame of the corresponding standards or certificates. Some biopolymers, such as PBS or PLA in soil and also lignin/wood for virtually all environments, also biodegrade, but (much) more slowly. Full biodegradation can take several years to decades to be achieved. In addition, for some applications with a use phase in a certain environment (e.g. geotextiles), too rapid biodegradation is not desired, as their function should first be given for a few years. However, for these cases no standards exist so far.

[1] incl. P3HB, P4HB, P3HB4HB, P3HB3HV, P3HB3HV4HV, P3HB3Hx, P3HB3HO, P3HB3HD

[2] PLA is likely to be biodegradable in thermophilic anaerobic digestion at temperatures of 52°C within the time frame mentioned in standards. This does not apply to mesophilic digestion.

RENEWABLE CARBON

More figures available at www.renewable-carbon.eu/graphics

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VIRONMENTS
n Schemes

ENVIRONMENTS

IMPORTANT TEST CONDITIONS, CERTIFICATION SCHEMES AND STANDARDS
For more details, refer to the original documents.

MARINE ENVIRONMENT
Temperature 30°C, 90 % biodegradation within a maximum of 6 months. **Certification:** TÜV Austria OK biodegradable MARINE. Research on standards (both on test methods and requirements) is on-going.

FRESH WATER
Temperature 21°C, 90 % biodegradation within a maximum of 56 days. **Certification:** TÜV Austria OK biodegradable WATER. Research on standards (especially on requirements) is on-going.

SOIL
Temperature 25°C, 90 % biodegradation within a maximum of 2 years. **Certification:** TÜV Austria OK biodegradable SOIL and DIN CERTCO DIN-Geprüft Biodegradable in Soil. DIN-Geprüft Biodegradable in Soil is based on the European standard EN 17033 dedicated to mulch films but can be used for other products as well.

HOME COMPOSTING
Temperature 28°C, 90 % biodegradation within a maximum of 12 months. **Certification:** TÜV Austria OK compost HOME and DIN CERTCO DIN-Geprüft Home Compostable.

LANDFILL
No European standard specifications or certification scheme available since this is not a preferred end-of-life option for biodegradable waste.

ANAEROBIC DIGESTION
Thermophilic 52°C / Mesophilic 37°C A specific European standard or certification scheme for anaerobic digestion is not yet available. Anaerobic digestion in a biogas plant is mentioned in EN 13432 and EN 14995: 50 % biodegradation within two months, usually followed by aerobic digestion.

INDUSTRIAL COMPOSTING
Temperature 58°C, 90 % biodegradation within a maximum of 6 months. **Certification:** TÜV Austria OK compost INDUSTRIAL, DIN CERTCO DIN-Geprüft Industrial Compostable and both „Seedling". EN 13432 and EN 14995 are the European reference standards and the basis of these certification schemes.

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2021-11-18

As Soft as We Are: *A Story of Living Matter and Polymers (Plastics)*

By Mario Grimau

Polymer Engineer (MSc & PhD Polymer Physics); Materials Science and Engineering SME @ SPRING (https://www.springpack.net/)

Editor's Note: *This article was written in response to, "How Bad Are Plastics Really?", an opinion piece by Rebecca Altman, published in the January 2022 edition of* The Atlantic. *From the byline, Rebecca Altman is a Providence-based writer trained as an environmental sociologist. She is working on an intimate history of plastics for Scribner Books (US) and Oneworld (UK). The opening paragraph of the article recounts memories of her father, a plastics professional.*

Fortunately, the story of plastics is neither the story of the author's father who once worked making polystyrene derivatives for Union Carbide, nor is it the story that once posed "plastics" to Benjamin Braddock (played by Dustin Hoffman) as the best of the possible futures in the late 1960s film, *The Graduate*.

The history of plastics and its ubiquity today is much richer and kinder than this other, dark history. This new one, now based on stories of wars and industrial conspiracies, is about people seemingly unconcerned about the progress, safety, welfare and health of societies. Rebecca Altman's story on plastics is one of people who only seek petty, hidden and cruel economic interests, and nothing more.

There are many ways to explain the success of plastics in the modern era: from a business and wealth-creating point of view; from a materials science point of view; or even from a sustainable or "green" perspective. For when we say that plastics save energy (which the author of the article acknowledged in a rather trivial way and disparaged it as if it were something really minor) or that they contribute to a certain a social vision (since plastics are among cheapest materials in the world and are therefore also the most democratic ones), we see that they are like a kind of materials version of the Ford Model T in terms of their accessibility, affordability, and usability.

But there is another way of telling the plastics story, one that is a little more fundamental and more appropriate for this world where life is, and depends on, carbon. All living matter depends on the formation and stability of structures; structures that must remain stable for at least a comparable life span with a strange balance of energy and matter.

In one way or another, all life forms on this planet depend on carbon-based structures. In humans and other living beings of the animal world, these structures are represented mainly by collagen and chitin. In the plant world, cellulose and starch are the main sources of materials that generate structures. These molecules are not the only sources of structural materials - there are also keratins, bones, corals and shells, but the ubiquity of polysaccharides in all structures of living systems is not a coincidence.

Polysaccharides are the plastics from which living matter arises, and from which come the polymers that become our plastics, apparently now so discomfiting. The interrelation between carbon and life on this planet is not accidental. It basically has to do with the fact that we are on a planet in a very specific position and with a very precise atmosphere. It is precisely in these conditions where carbon-derived life is easier to create and is preserved in the most economical conditions, that is, in terms of energy consumption. In other words, living beings do not rust or corrode. We are also not water soluble, and we perform quite successfully (live and reproduce) in a 27° temperature range without much effort or discomfort.

In the same way, our plastics - the synthetic, human-made polymers created from our ubiquitous carbon - are, in many ways, the structural materials most akin to conditions on our planet. And this is not a punishment; rather it is a blessing. We can do many things with our plastics as well as with all our modern materials. All those things we need to live more and to live better. And to the extent that our materials are cheaper, more people can do those same, better things and enjoy longer, healthier, more productive lives. But living longer and living better has never been free and without consequences. Our presence on this planet has immense consequences for all the species that live here, including our own.

Increased life expectancy (and quality) does not come without a great cost to the planet. The costs, these externalities, are borne by the environment, by Mother Nature. However, it is clear that without plastics these costs would be even

higher. In other words, it is thanks to energy and materials derived from carbon that this generation can care about the others to come. Because if we had not built most of our life support system on this planet on that wonderful element, past generations would have long ago wiped out almost all living things on this planet, both plants and animals.

It remains true that we have not yet been able to free the planet from our effects so that a sustainable equilibrium – the ability to live our lives without compromising the ability of future generations to do the same – can be achieved. But if to some extent we have managed to stop bothering it, at least in terms of its living beings other than ourselves, it is because we have been able to use the carbon of past lives to sustain and build the life of today. |

Cutting Through the Fluff

Features - Industry Leaders

Edited by Megan Smalley, November 2, 2022

Kari Bliss, principal of sustainability at Padnos, has spearheaded many of the company's sustainability efforts in the past decade, including its recent research around recycling auto shredder residue.

Photos courtesy of Padnos

For many scrap companies, sustainability always has been part of their visions. For example, in 1905, Louis Padnos started Holland, Michigan-based Padnos by trading furs and rags with the hope he could extend the life of materials people had discarded.

Sustainability has become even more important in the 117-year-old company's recent history. Today, Padnos takes a closer look at its carbon footprint; environmental, social and governance (ESG) reporting; and the sustainability of its customers' facilities, too. Kari Bliss, principal of sustainability at Padnos, has influenced many of the company's efforts around sustainability in the past decade.

Bliss first joined **Padnos** as an account executive for the company's paper and plastics division in 2010 after spending the first part of her career in real estate construction. Although Bliss didn't have any scrap industry experience when she joined Padnos, she says the company wanted to hire someone with an outside perspective to grow its plastics division.

"Sometimes fresh eyes are a good way to grow," Bliss says. "I didn't have any preconceived notions coming in."

Bliss says she spent many nights studying the paper and plastics markets in the early years of her career at Padnos.

"Those first few years, I made a lot of mistakes trying to understand who is a good customer for us," she says.

Bliss says she was part of a great team that was willing to go the extra mile for its customers. She adds that the hard work and research she did paid off because she helped grow the plastics division to where it needed to split from the company's paper division. The plastics division even added compounding services to aid customers, and she says they are two fast-growing areas for Padnos.

In her career at Padnos, Bliss says she always considers ways the company can improve its sustainability performance. About three years ago, she became Padnos' first sustainability leader. Last year, Bliss was promoted to the role of principal of sustainability.

She shares some of the company's most recent efforts around sustainability in the interview that follows, including Padnos' work on Sustainability City and recycling plastics from auto shredder residue (ASR), or fluff.

Recycling Today (RT): Early in your career at Padnos, you helped the company get into compounding. What was it was like working in Padnos' plastics division and starting to offer compounding services?

Customers of Padnos at the company's Sustainability City

Recycling Today (RT): Early in your career at Padnos, you helped the company get into compounding. What was it was like working in Padnos' plastics division and starting to offer compounding services?

Kari Bliss (KB): The biggest challenge was getting everyone to see my vision. In the early days, I didn't know what I didn't know. We were doing the hard work of collection and downsizing the plastic, selling it to compounders. To me, it was obvious that compounding was the next logical step to vertically integrate our services. It took a lot of trial and error to create a narrative that others could get behind.

Ultimately, it took Jonathan Padnos, our president and CEO, joining the plastics division. He saw the possibility and set out to find a partner to get us up to speed fast. That partner, Gary Barnett, is still with us today [as vice president of plastics].

RT: How have its compounding business and plastics division become among the fastest-growing areas for Padnos?

KB: The narrative quickly changed from just being a recycler to offering closed-loop programs. We can take material from the customer, improve the mechanical properties and give it back to the customer, building a closed-loop system. This was the precursor to the work we do today to further the circular economy. As zero waste became the goal of every OEM [original equipment manufacturer], our services were in high demand. We aren't the largest recycler; we do have more diverse processing capabilities than our peers, and it gave us a competitive edge.

RT: Since joining Padnos, you have transitioned into a role overseeing sustainability efforts. What do you do on a day-to-day basis at Padnos as its principal of sustainability?

KB: I still spend time researching every day. Our customers depend on us to bring them the latest innovations for handling their materials. My team tracks our Scope 1, 2 and 3 emissions, and we provide carbon scores for our products. We believe in the value of private-public partnerships to build a circular economy. To that end, I study pending legislation, sit on various boards and speak at conferences.

RT: What has it been like coaching Padnos' customers on sustainability?

KB: Some of the best success stories we've had is in full collaboration with our customers. I'll go into a plant and see that they're trying to do the right thing. They may not realize how much waste is happening with how they handle their scrap materials.

For example, I might go to a customer that has 10 buildings, and they're hauling all their loose corrugated and film to one baler. The lightweight nature of the material could take one person all day to transport the material around. If we can put a piece of equipment in to help densify the material at the source of generation, it has a big impact on handling time and frees up valuable floor space. A traditional [return on investment, or ROI] calculation may miss some of the savings available.

RT: In recent years, Padnos also launched Sustainability City. Could you tell me more about that effort?

KB: Sustainability City is an 18,000-square-foot innovation space where we can take our time solving some of our customers' toughest challenges. We have room to lay out a full load of materials and gather enough data to develop better solutions. We regularly get in new equipment that can help densify material, so our customers can reduce their freight costs and lower carbon emissions.

Hundreds of customers have visited with the teams to participate in trials. This shared learning develops more solutions and helps with change management when improvements are implemented.

RT: In your role, you have also researched the recyclability of ASR. What got you interested in this, and what were your findings?

KB: Over 98 percent of the metal from cars and durable goods is captured in our shredder and downstream operation. What is left appears to be a hopeless mix of fabric, wood, foam, plastic, dirt and rubber. About eight years ago, a team member asked me what could be done with all the ASR that ends up as landfill cover. It piqued my interest, and I started to research what efforts had been made to solve the challenges. I discovered the obstacles were more financial than technical.

In 2020, consumers started to demand producers address climate change. Lots of companies were making bold commitments to reduce their carbon footprint and increase postconsumer content. I knew those goals would be hard to reach based on existing feedstocks. I dusted off my research and started to discuss the possibilities with other team members.

Eventually, I got enough team members interested that the project took off. My main contribution was to see the possible and not give up.

It took collaboration between our different business units to produce a product with a desirable ROI. For decades, manufacturers have used recycled content because it costs less than prime. Now, they need to use recycled content to honor their commitments and meet the demands of consumers.

To the best of my knowledge, we are the only ones in the United States mechanically recycling ASR. We're not using solvents; we're not using pyrolysis; we're not using any kind of molecular or chemical process, which means that our ASR is created with a much lower carbon footprint than plastic recovered from one of those other processes.

RT: How else is Padnos using its ASR?

KB: Polypropylene is a versatile material that is likely to increase in use over the next decade. Today, we are producing a 20-percent-talc-filled polypropylene from the ASR. It is one of the most widely used materials in automobile and durable goods manufacturing. As we move from internal combustion engine (ICE) to electric vehicles (EV), materials will change. An EV weighs about 1,000 pounds more than an ICE. That needs to change to improve the range, and plastics are one of the best ways to achieve lightweighting goals.

We're in negotiations with multiple OEMs who have expressed interest in our material. ASR plastic will be in products next year.

RT: What are the biggest challenges to recovering plastics from ASR?

KB: The mix of materials is staggering and inconsistent. Every material has different properties that need different sortation technologies. The development of these technologies will continue to be the challenge over the next few years.

Regarding the financial viability of [plastic recycled from] ASR, it really isn't going to be a cost savings. This material is not going to be cheaper than prime material. The savings come more about that it is a large source of postconsumer end-of-life content. It would be difficult for the OEMs to meet claims that they've made of having recycled content and reducing their carbon footprint without it.

RT: What are your hopes for the future regarding how the scrap industry will handle ASR overall?

KB: I would like to see our technology spread across the U.S., so all ASR becomes part of the circular economy.

Kari Bliss is principal of sustainability at Padnos, based in Holland, Michigan. For more information, visit https://padnos.com. |

PCE Sustainability 2023

Dana Darley manages business development and complex applications for the Plastics Division of Vecoplan LLC, a leading manufacturer of size reduction, separation, and recycling systems.

Holder of two US patents, Dana earned a degree in Mechanical Engineering from Clemson University and has been involved in the design, development, marketing and sales of plastics processing and recycling equipment for over 40 years.

During his career, Dana has held management positions at Process Control Corporation, Kreyenborg Industries, MAAG Pump and LCI Corporation, and operated his own consulting business, Extrusion Auxiliary Services, Inc. for 15 years.

Course Outline:

In-Plant Recycling and Reclaim of Extruded/Molded Plastic Scrap for Improved Sustainability

Dana Darley, Business Development, Vecoplan LLC, Archdale, NC USA

Producers of extruded/molded products have three main options when dealing with their own internal scrap 1) reuse it, 2) sell it, or 3) dispose of it. For all three, some type of reprocessing is usually beneficial. In this course we will review the logistics, economics, and processing technologies typically used for extruded/molded products, with the main focus on the in-house recovery of scrap that is then fed back into the raw material stream—an important first step in your plant's sustainability journey.

The main points of discussion are:

- Understanding the scrap being produced during the extrusion/molding process
- Review on-line reclaim options for continuous production waste
- Assess the economics/logistics of disposal, toll processing, and/or sale of production scrap
- Evaluate cost justifications for processing production scrap internally
- Determine the economics of bringing in outside industrial scrap for use in products
- Considerations of the extrusion/molding production process with additional levels of reclaim input
- Appraise the effects of reclaim material variations, such as bulk density, viscosity, purity, and heat history and how they may affect the final product
- Discuss the required processing technologies for recovery of plastic scrap including material handling, size reduction, metal and fines separation, washing, sorting, and pelletizing

The goals of the program are to provide the information required to process scrap material for efficient disposal, transport or re-sale, to evaluate the economic justifications for bringing scrap reprocessing capabilities in-house, and to review the processing technologies required for introduction of scrap material back into the primary production lines.

Date: Tuesday, January 17, 2023

Time: 11:00am – 12:00 pm

Where: Attend in person at The Polymers Center or view online

Location: Polymers Center
8900 Research Drive
Charlotte, NC 28262

Cost: Free to Attend

Email: dhawkins@polymers-center.org, or call 704-602-4100

This hybrid event can be attended in-person or onlinee. Please contact Daeng Hawkins to register and to get log-in information to view the event online. |

ANTEC® 2023

Denver, CO · March 27-30, 2023

ANTEC® 2023 will showcase the latest advances in industrial, national laboratory, and academic work. Learn about new findings and innovations in polymer research, products, and technologies. There will be multiple opportunities to spend time with colleagues at SPE-hosted meetings, receptions, networking luncheons, and SPE Chapter networking events.

Additional Conference Highlights:

- Pre-ANTEC Workshops
- Student Posters
- Welcome Reception
- Networking Receptions
- Honors & Awards Luncheon

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2022 SPE Recycling Division Scholarship Report

Dear SPE Recycling Division,

The SPE Foundation is pleased to share a report of your 2022 SPE Recycling Division Scholarship. Thank you for supporting these outstanding scholars.

Together, we awarded 77 scholarships to 51 individuals totaling $191,875 in 2022. We appreciate your contribution to this impact and are especially grateful for your decision to collaborate with us in this effort.

Kelsey and Evan benefit greatly from your support and generosity, as demonstrated in their thank you notes. We hope you enjoy reading about your impact and their educational and career goals.

Thank you for your investment in our future workforce!

Sincerely,

Eve Vitale

Eve Vitale, Chief Executive SPE Foundation

MIDLAND COMPOUNDING & CONSULTING

Kelsey Allis is a rising senior studying Plastics & Composites Engineering at Western Washington University. Her interests are in plastics processing, composites, and materials science. This summer, Kelsey interned as a Manufacturing Engineer for Fluke Corporation at their plastics facility in Everett, WA. Her role involves working closely with injection molding machines and troubleshooting problems such as part defects or issues with automatic systems.

"Thank you for awarding me the SPE Recycling Division Scholarship. My goal is not only to increase the amount of waste that gets recycled, but to also educate others about plastics recycling. Thank you for acknowledging my efforts in plastics recycling! This scholarship will help to ease the burden of my student loans and support me as I complete my degree in Plastics and Composites in Engineering. I plan to continue promoting plastics recycling and sustainability both on and off campus. I will continue my work synthesizing a reprocessable thermoset polymer once summer is over. I also hope to participate in another beach cleanup is over. I also hope to participate in another beach cleanup with SAMP/SPE Chapter at my university or a local Surfrider Chapter."

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Evan Yu is currently a graduate student at Nanyan Technical University (NTU) in Singapore studying materials science and engineering. In May of 2022, he graduated with Bachelor of Science Degree in Plastics/Polymer Engineering from the University of Massachusetts Lowell (UML) and successfully completed the UML honors college program. During his undergraduate studies, Evan worked as an undergraduate research under professor Wan-Ting (Grace) Chen. He helped to identify potential safer solvents for the removal of acrylic conformal coatings from electronic components. He also helped characterize and analyze chemically recycled mixed plastics about research from Electronic Waste. Evan is currently working on publishing a paper about research investigating the separation and chemical recycling of Polycarbonate from Electronic Plastic Waste.

"Thank you very much for nominating me as a recipient of the SPE Recycling Division Scholarship. I am very grateful for all your generosity and support towards both my future postgraduate education and beyond. I just started my new life and first semester on the other side of the world over here in Singapore at Nanyang Technological University studying materials science and engineering. I am currently in the process of obtaining a research assistant position at NTU within the department. I am also in the process of finishing up a manuscript draft on my previous recycling research conduction at UML that will hopefully be submitted for review by the end of the month of month. Again, thank you very much. Your support is greatly appreciated"

spe RECYCLING

Why Join?

It has never been more important to be a member of your professional society than now, in the current climate of change and global growth in the plastics industry. Now, more than ever, the information you access and the personal networks you create can and will directly impact your future and your career.

Active membership in SPE – keeps you current, keeps you informed, and keeps you connected.

The question really isn't "why join?" but …

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SPE RECYCLING NEWSLETTER provides technical and non-technical content aimed directly at the plastics recycling industry and members of the SPE Recycling Division. This professional publication is the perfect platform for your company to get the recognition it deserves!

The Plastics Recycling Division produces four, full-color issues in digital format per year. Circulation includes posting on on multiple SPE social media channels.

Publication measures 8.5 x 11" with all sponsorship ad spaces in full-color. All submitted files should be a minimum of 150 dpi in EPS, PSD, JPG or PDF format. For more information or questions, contact Conor Carlin, Editor, at ccarlin@4spe.org or 617.771.3321.

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Level 3 – PLA	7.66 x 4.5"	Logo on Sponsor Page, Rotating Ad	$1500	$300
Level 4 – PHA	7.66 x 10"	Logo on Sponsor and Home Pages, Full Banner Ad	$2500	$500

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To bring the PlastiVan® Program to your community, contact Julie Proctor at jproctor@4spe.org.

PlastiVan.org