



SPECsheet

SOCIETY OF PLASTICS ENGINEERS – CLEVELAND SECTION

September 2016 Vol. 60 No. 1

www.specleveland.org

Editor: [Bruce Bille](#)

Upcoming Meeting: Monday, September 12, 2016

The Technology House Carbon CLIP Process Demo & Tour

Location:

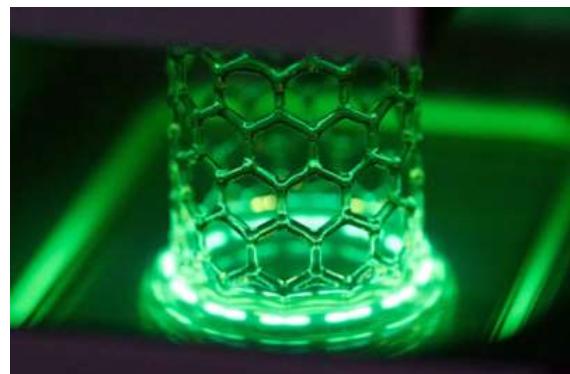
[The Technology House](#)
[10036 Aurora-Hudson Road](#)
[Streetsboro, Ohio 44241](#)

Agenda:

4:00-5:00 SPE-C Board meeting (and any volunteers interested in joining)
5:00-5:30 Check-in, socialize
5:30-6:15 Presentation about CLIP
6:15-7:00 TTH Tour
7:00 Dinner and Q&A

Price: Members/Guests: \$20
Retired SPE members: \$15
Students: \$5
Pay at door

Quick Clicks:
[President's Message](#)
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[About the Speaker](#)
[TOPCON](#)
[About SPE-Cleveland](#)
[SPE-Cleveland Website](#)



Reservations:

Reservations must be in by noon on Friday, September 9th, and can be made with Dan Crist at mail@cmd-tip.com or 440-227-5424. The Technology House reserves the right to refuse admission to competitors and their employees.

Directions to Sept 12th Meeting

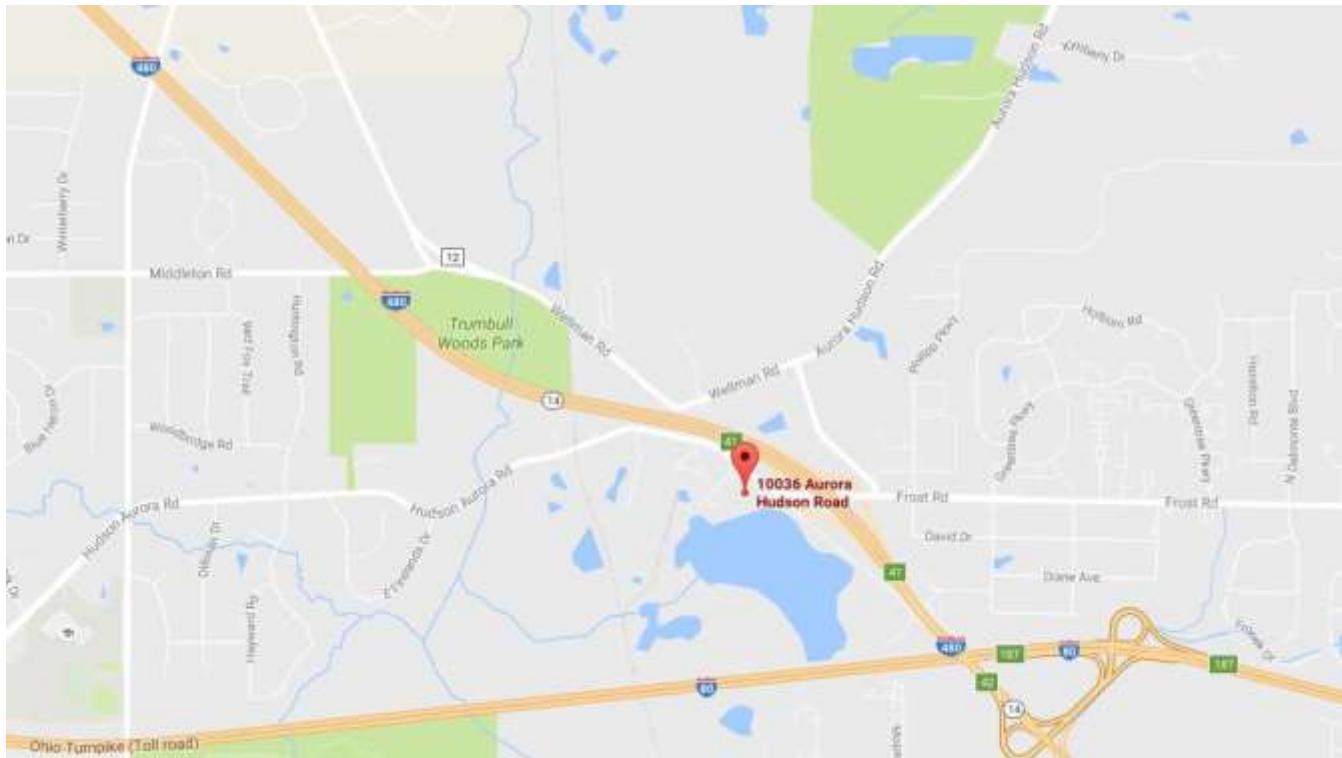
Directions from Cleveland:

Proceed east/south on I-480East

Exit 41 at Frost Road, turn right (west)

First building on left is The Technology House.

(Click on the map to view in Google maps)



About the Speaker

Mark Horner is the Vice President of Business Development and is one of the founding members of The Technology House. When the company started in 1996 as a rapid prototype service bureau, it had five employees, one SLA machine and one seat of PRO/Engineer CAD software. Since that time, Horner has helped The Technology House grow into a full service company offering product development, additive manufacturing, production injection molding and production CNC machining, including five-axis machining, helping companies develop and produce parts in industries such as medical, aerospace and consumer products.



Horner was introduced to the rapid prototyping field in 1989 at Packard Electric in Warren, Ohio. There he trained to operate an SLA-250 machine that was serial number 6 produced by 3D Systems. The machine helped Packard's component engineering department begin to rapid prototype its new electrical connector designs for the automotive industry.

About the Monthly Meeting

How CLIP Works

CLIP, which stands for Continuous Liquid Interface Production, is a photochemical process using both light and oxygen to build parts. It works by projecting UV images, generated by a digital light projector, through an oxygen-permeable window into a reservoir of UV curable resin. The UV images when projected are solidified as the build platform rises.

Carbon CLIP

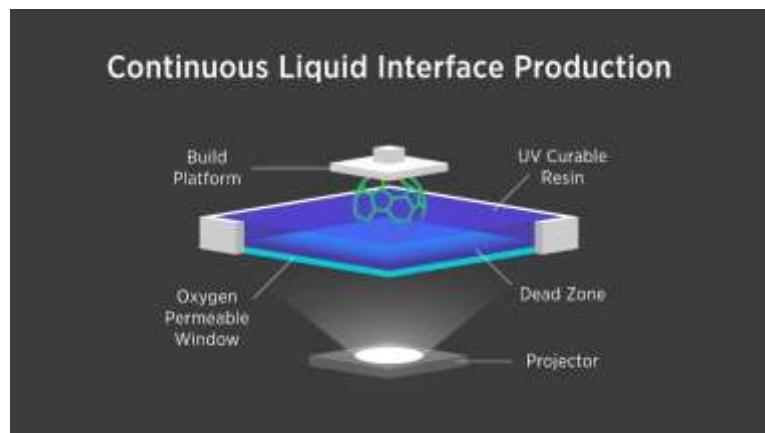
In October, The Technology House (TTH) was selected as a Beta-site for the new Carbon M1 printer. Currently, TTH is one of only a handful of service bureaus in the world with the ability to 3D print prototype and production parts from the Carbon M1 3D Printer. As of July 2016, TTH has three (3) Carbon M1 machines up and running. Here is a list of Carbon's advantages over other 3D printing technologies are:

CLIP Advantages

1. Wide Array of Engineering Grade Polyurethane Materials.
2. Faster Build Speeds
3. Production Quality Surface Finishes
4. Consistent Mechanical Properties
5. Connected to Learn, Update and Improve Builds and Processes

The Carbon M1 CLIP Machine

Build platform size: 144mm x 81mm x 330mm



CLIP Engineering Grade Materials

The materials available for additive manufacturing on the CLIP machine were designed to rival current thermoplastic materials. Parts will be tough, resilient, isotropic and machinable. Each material was engineered to provide similar properties to production injection molding materials like ABS, Glass Filled Nylon, Polypropylene and Soft Durometer Santoprene. CLIP materials have consistent mechanical properties because the parts are isotropic. The resulting part will have characteristics similar to an injection molded thermoplastic. TTH currently builds in the following materials:

PR Prototyping
RPU Rigid Polyurethane
FPU Flexible Polyurethane

EPU Elastomeric Polyurethane
CE Cyanate Ester for high heat applications

Future SPE Cleveland Section Programs

Sept 12	Carbon CLIP Process Demo/Tour	The Technology House Streetsboro, OH
Sept 20-22	2016 TopCon Stretching Performance with TPEs	Hilton Fairlawn
Oct 10	Vadxx Scrap Plastic to Oil	Hilton Fairlawn
Nov 14	Reuther Mold Mold Design and Manufacture	Cleveland
Dec 5	Holiday Celebration featuring the Madrigal Singers	Taverne of Richfield
Jan 9	A. Schulman, Inc.	Hilton Fairlawn
Feb 13	Cleveland Federal Reserve Bank NE Ohio Economy	Hilton Fairlawn
Mar 13	Valtris – Additive Development and Manufacturing, Plant Tour	Cleveland
Apr 10	Industry/Teacher Collaboration Plastics in Education	Hilton Fairlawn
May 15	Awards Night	TBD

MAY 2016 MEETING REVIEW

The Cleveland Section of the Society of Plastics Engineers gathered for our annual awards banquet at Ratatouille in Beachwood, OH on May 9th 2016. The event looked to our next generation's motivated students to show what their skills and imaginations can produce. We listened to winners of the Northeast Ohio Science Fair SPE Awards give brief summaries of their projects before sitting down to a tasty meal. The section also acknowledged the SPE Cleveland Essay Contest winners for this year, by naming the winners, their essays' titles, and their awards. The meeting continued with discussions about next year's plans for the section, and ideas as to how to gather engagement from inactive members. Finally, the group settled for short networking session where attendees could trade stories and information with each other and with the potential engineers of the future. The Cleveland Section of SPE Board of Directors 2016 would like to thank all of our members, and, specifically, the attendees of our events and students that submitted essays and projects for a great year.

Following is the list of winners from both the Cleveland SPE Essay Contest, and the NEOSF SPE Awards.

Essay Contest Winners

- | | |
|-----------|--|
| 1st Place | “Plastic in Prosthetics”
Co-Authors: Grace Lihani and Anna Seffemich - \$100.00 Award |
| 2nd Place | “Enjoy Your Flight, Mr. Plastic”
Co-Authors: James Cook and Matthew Goepfert - \$75.00 Award |
| 3rd Place | “The Hidden Hero of the World”
Co-Authors: Natalie Tisdale and Kyle Leonard - \$50.00 Award |
| 4th Place | “Plastic: A Key Element of Modern Day Music”
Co-Authors: Alex Lenhart and Calista Lewis - \$25.00 Award |

NOESF Winners

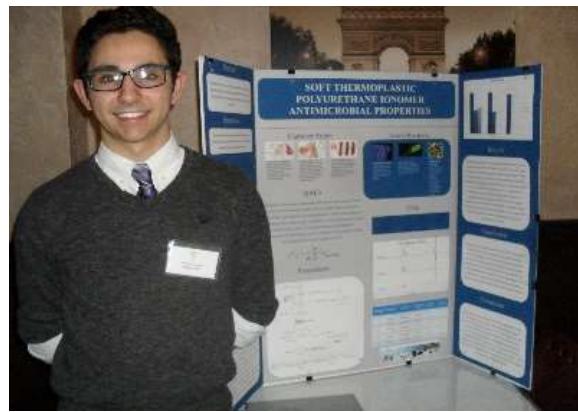
- | | |
|-----------|--|
| 1st Place | “Soft Thermoplastic Polyurethane Ionomer – Antimicrobial Properties”
Author: Joseph Conti – St. Vincent, St. Mary High, Grade 11-12 |
| 2nd Place | “Layer by Layer Fabrication of Antifouling Surfaces Inspired by the Lotus Leaf”
Author: Abby Volk – St. Vincent, St. Mary High, Grade 11-12 |
| 3rd Place | “Is Your Water Bottle BPA Free”
Author: Rebecca Lin – Solon Middle School, Grade 7-8 |

Thanks again to all involved in Cleveland SPE, and we hope to see you all again next year.

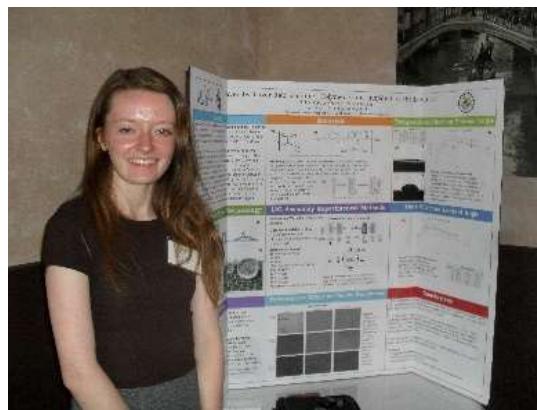
Ron Raleigh
Society of Plastics Engineers – Cleveland Section
Chair, Awards Committee; Chair, Students Committee

NEOSF Winners

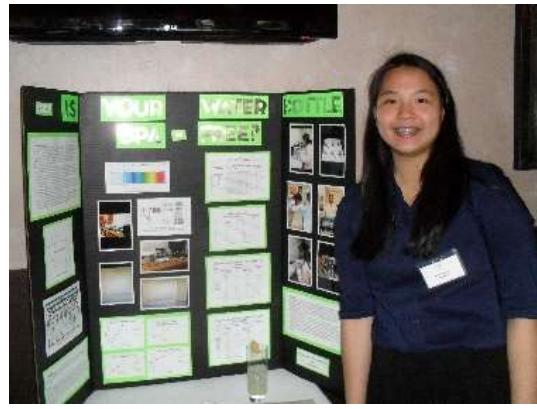
1st Place “Soft Thermoplastic Polyurethane Ionomer – Antimicrobial Properties”
Author: Joseph Conti – St. Vincent, St. Mary High, Grade 11-12



2nd Place “Layer by Layer Fabrication of Antifouling Surfaces Inspired by the Lotus Leaf”
Author: Abby Volk – St. Vincent, St. Mary High, Grade 11-12



3rd Place “Is Your Water Bottle BPA Free”
Author: Rebecca Lin – Solon Middle School, Grade 7-8



President's Message

A message from the Cleveland SPE section (s003) 2016-2017 President:

Hello, and welcome to the 2016-2017 SPE season. It is a great honor to serve as SPE Cleveland Section President. I have worked in the plastics industry and have been an SPE member since 1998. I am a mechanical engineer specializing in product design for the injection molding industry.

We start off this year's season on September 12. The event is at The Technology House in Streetsboro. Mark Horner of Technology House will be giving a presentation on Additive Manufacturing (3D printing), followed by a plant tour. Don't miss this opportunity to learn about some innovative technology and network with other plastics professionals!



After that, all events are on the second Monday of each month with the exception of the TPE TopCon on September 20-22, and the Holiday Party which is on December 5th, which is the first Monday of the month. Events are held jointly with the Akron Section, which provides even more opportunities to meet and network with other SPE members. Go to <http://specleveland.org/schedule> for a full and current list of all events.

Any members who are interested in being on the board or working on any of the committees should contact me (mail@cmd-tip.com). We have openings, and all help is welcome. Board meetings are usually at 4 pm before each month's event, at the event.

We look forward to seeing everyone at the events. Let's have a great year!

Dan Crist
2016-2017 SPE Cleveland President
mail@cmd-tip.com

SPE Cleveland Section Board Meeting Minutes

July 18, 2016

Attending: Dan Crist, Richard Keeley, John Sovis, Jerry Blayne, Moris Amon, Keith Pelfrey (Akron Section, guest.)

Recorded by: Moris Amon

1. Board assignments for 2016-2017:

- a. Dan Crist was elected President due to the sudden resignation of 2015-2016 President Elect Joe Karpinski. Dan will also continue as House Committee Chairman, but not as Secretary.
 - b. Richard Keeley now becomes Past President.
 - c. John Sovis was elected Program Chairman and Vice President
 - d. Moris Amon accepted to become acting Secretary and newsletter & web site Editor, in addition to his ongoing responsibility as Treasurer. The previous Editor, Michael See, had requested to be relieved of this responsibility.
 - e. The positions of Membership Chairperson and President Elect are vacant. These positions must be filled soon in accordance with SPE bylaws. John Sovis is contacting all Section members to recruit more Board members.
2. John Sovis has arranged a tour of Technology House, a 3-D printing company, for the first joint monthly meeting of the Cleveland and Akron Sections on September 12.
 3. The rest of the 2016-2017 program is also established.
 4. Moris Amon presented the year-end Treasurer's report. For the fiscal year 7/1/2015 to 6/30/2016, income was \$6327, vs. budget of \$7,450, expenses were \$13,157, vs. budget of \$14,400, for a loss of \$6,829, vs. budget of \$7,050. Assets are down from \$40,225 to \$33,396.
 5. Councilor Jerry Blayne reported on the new organizational structure of SPE as presented at the Council meeting on May 21. (Subject to Council approval.) Jerry also enumerated some consequences of the organizational changes that will endanger the financial viability of many Sections.
 - a. Low rebate (\$7.50 per dues-paying Section member) in 2016-2017. This will not cover our Council travel expenses, even at the old rate of 2 Council meetings/yr.
 - b. Inadequate rebate increase (to \$10 per dues-paying Section member) in 2017-2018 and beyond.
 - c. Increased number of Council meetings (from 2 to 4) in 2016-2017.
 - d. Remote attendance at Council meetings not allowed.
 - e. Deal with Marriott Hotels for the Council meetings, precluding less expensive accommodations.
 - f. Elimination of the requirement of US members of SPE to select a section – which may be a fatal blow in the long term.
 6. Jerry has proposed solutions to these problems and will continue to argue for them at upcoming Council meetings.

Stay up to date with the SPE-Cleveland Section web site,
created to keep membership informed.

Visit now at: <http://www.specleveland.org>

TOPCON – September 20-22, 2016

The 12th TPE TOPCON on September 20-22 at the Akron Fairlawn Hilton will be trying something different this year. We will be holding a half-day primer on TPE basics on Tuesday afternoon. This is targeted at newcomers to the TPE industry and also those involved in production, sales or marketing who can benefit from a better understanding of TPEs. The chemistry, performance properties, formulating and applications will be covered for commodity, engineering and specialty TPEs. The TPE primer is independent and requires a separate registration fee.

The Conference this year will feature bio-renewables, additives for performance enhancement, processing scale-up, 3D printing, wearable technology and the latest material developments. We currently have twenty-six abstracts for papers with speakers from both industry and academia, and two excellent lunch keynote speakers. We will also have a student poster session presenting student polymer projects from local universities which will be included in the exhibit area.

We are in the process of signing up exhibitors and the very important sponsors. Anyone interested in being a sponsor or exhibitor should contact Kevin Malpass at kevin.malpass@diebold.com or 330-490-4743. This should be a very different TOPCON with a wide array of different topics. We are looking forward to seeing you in September.

2016 TOPCON Conference info:

Date of Event: September 20-22, 2016

Location:

Akron Fairlawn Hilton
[3180 West Market Street](#)
[Akron, Ohio 44333](#)

Important Links:

[TOPCON Website](#)
[Meeting Agenda](#)
[Reserve a Room](#)

Registration Information

	By September 10	After September 10
SPE Member	\$395	\$445
Non-Member	\$445	\$495
Student	\$65	\$70

**We are looking for volunteers to join our Board, especially to fill the Membership and Advertising chair positions.
Please contact Moris Amon, m.amon@roadrunner.com, for further information.**

About the SPE Cleveland Section

We are the Cleveland Section of the Society for Plastics Engineers (SPE), the leading plastics professional society in the world. Since 1942, SPE has been the "go to" technical information, training, networking, and information-sharing source for plastics professionals who want to advance their knowledge and careers. Membership in the Society offers:

- free access to a vast on-line collection of technical journals and conference proceedings;
- significant discounts at many SPE-sponsored conferences, including SPE's famous international Annual Technical Conference (ANTEC);
- free access to a job search and recruitment web site, SPE Career Solutions;
- professional networking and information-sharing through its on-line social network, the Chain;
- opportunities for volunteer participation in the work of the Society at national or regional level.

Explore what SPE has to offer at <http://www.4spe.org>.

Founded in 1943, the Cleveland Section was the third section to be formed in the USA. Its first president was Reynold (Ren) Morse, who later founded the Industrial Molding Supplies (IMS) Company. Our objective is to promote scientific, engineering, and business knowledge related to the plastics industry in North East Ohio. We are the professional home for nearly 275 plastics professionals across the Greater Cleveland area.

Every year, from September through May, we organize one meeting per month, advertised in advance in our on-line newsletter, the SPEC Sheet. A typical meeting consists of a social hour, followed by dinner, and culminates in a technical presentation by an expert. Occasionally, a plant or laboratory tour replaces or supplements the presentation. Our programs (with the exception of the Awards Night in May) are held jointly with the Akron Section of SPE, with which we have collaborated since its inception in 1958, when it split off the Cleveland Section. For a history of programs in recent years see <http://specleveland.org/history-of-events>.

Wherever you are in your polymers-related career-from student through retired-we invite you to benefit from and contribute to SPE as an active member of your Cleveland Section. Join our active membership by clicking the link below:

<http://specleveland.org/membership>

Advertise with the SPE Cleveland Section! Reach out to customers!

Newsletter and web page... Dual promotion – one price! Both hyperlink capable!

Contact Moris Amon at m.amon@roadrunner.com
for annual packages and discount part-year packages.

2016 – 2017 SPE Cleveland Section Officers and Board of Directors

President

Dan Crist

Component Mfg. and Design

mail@cmd-tip.com

Vice President

John Sovis

jsovis@twc.com

President Elect

Alex Kawczak

StrateNexus Technologies LLC

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Past President

Rik Keeley

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Director

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