



October 2023

Section S-49 Covering the Carolinas

Newsletter of the Society of Plastics Engineers, The Carolinas Section

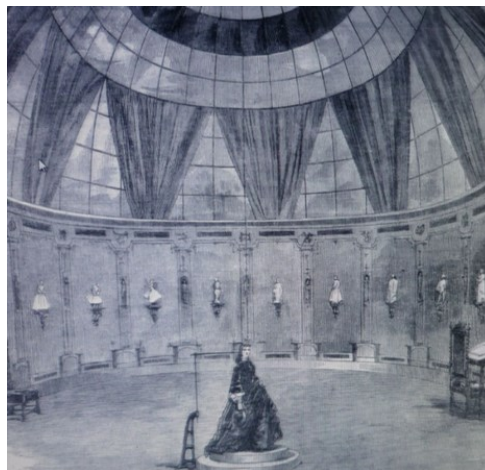
Promoting the Scientific & Engineering Knowledge of Plastics

<https://carolinas.4spe.org/>

President's Message October 2023

From Sculpting to Printing—the 3D Revolution

One might think that 3D printing started with Chuck Hall's patent for stereolithography in 1986, but the roots of antecedent inventions extend remarkably deep into the past, starting with a French sculptor, François [Willème](#). Sometime in the mid-1850s, while he was attending art school in Paris and making models for manufacturers of art bronzes, Willème learned of photography and realized its potential as an aid for making silhouettes. He set up an array of 24-cameras that enabled him to take simultaneous photos from a 360-degree circle that surrounded his object. Then, using the photographic silhouettes, he traced their outline with a pantograph, which he attached to a cutter to form in clay each of the silhouettes, each fifteen degrees offset from its neighbor. By nesting each cutout at that fifteen-degree angle to each other he formed his 3D sculpture. He could also cut out of wood a negative of the silhouette, then combine the negatives into a hollow cylinder, then cast the rough sculpture from the negative. The coarse cutouts represented an extremely low-resolution representation of his subject, so it required a great deal of artistry to blend them together to form his model, but it cut the time required for such a process from months to days.



Francois Willeme's studio for photosculture and self portrait of



Fransoid Willeme.

2023-2024 Officers:

President

Phil Shoemaker

Vice President

Rodney Joslin

Secretary

Glenn Shearin

Treasurer

Lewis Wilson

Councilor

Tim Haake

BOD members:

Sandra Lail

Maury Balik

President's message continued:

Willème considered himself the "inventeur de la photosculpture" He may not have utilized layers, as we do today, and he did "subtract" from his layers during their formation, but based as it was on his additive process, he showed how to translate information contained in a photograph to make layers, then combine those layers to form a solid object. So could we term Willème the father of additive manufacturing? The quick answer is no, not because his ideas were not original, nor because he did not compose his work out of successive layers, but because his invention ran into an evolutionary blind alley. By 1868 he was out of the photosculpture business and his process fell into disuse.

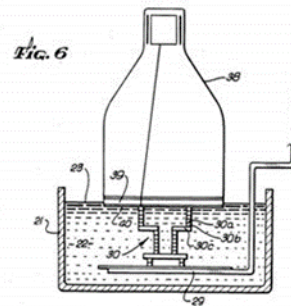
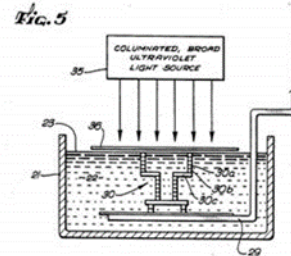
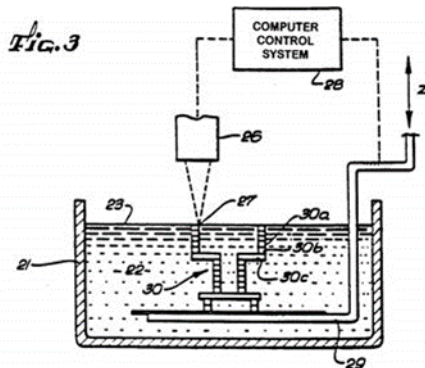
A century later, in December 1972, Leone Isaure Marie Ciraud patented a method of manufacturing objects from a thermoplastic material that begins as "small particles" that are fused together by thermal radiation, "that has its focal point in a very small, practically point-like area" that agglomerates such particles in the shape of a volume that "depends on the movement given to the focal point of the thermal radiation." Then, in 1981 Hideo Kodama also published a method of manufacturing of printing of solid models. Again, one might think that Ciraud's and Kodama's inventions would find immediate application, but it took another fourteen years after Ciraud's idea to see practical success, and then only through a process that differed enough from his that it led to a new patent. As it turns out, Ciraud's process and all other prior art were plagued by technical difficulties—a loss of resolution and intensity of the radiation at the intersections of the beams as they moved deeper into the photoreactive solutions, which made them unreliable. So when Chuck Hall discovered how to master those problems, he patented an "Apparatus of production of three-dimensional objects by stereolithography," US Patent No. US457330A. Utilizing photoreactive polymers (a UV curable material) with stereolithography, he came up with the first stable 3D printer. Hall went on to form his company, 3D Systems, eventually growing it into an enterprise that will generate \$540 million dollars in 2023 and one that has found applications in aerospace, automotive, health care and pharmaceutical markets. (<https://www.3dsystems.com/>)

Chuck Hull's patent references neither Willème nor Ciraud, nor should it, but that is the nature of technology—systems often originating from designs that are independent of antecedents in other fields. Simultaneous Invention, so named because it seems to occur regularly when the conditions are such that the invention would be obvious, bears a remarkable resemblance to convergent evolution, the development of similar structures in biological lineages that cannot be traced back to a common ancestor. And just as all complex creatures in the biological realm bear the marks of rudimentary appendages, so too does Willème technique for sculpting seem to tail off into the distant past, leading to a technological dead-end. But in every case this printing technology takes advantage of a fundamental phenomenon of nature that we program for our purposes. That clay could be molded and fired in the case of Willeme, or that certain polymers are photoreactive in Hull's.

President's message continued:

Chu<https://patents.google.com/patent/>

U.S. Patent Mar. 11, 1986 Sheet 3 of 4 4,575,330



Join us for a demonstration of just how far Hull's invention has come on the 25th of this month in Huntersville and take a tour of Joe Gibbs Racing facility.

Time, October 25th, 1:00 to 6:00

Address: Joe Gibbs Racing—13415 Reese Blvd W—Huntersville, NC

To sign up go to:

<https://go.stratasys.com/gen-3dp-truck-sdm.html>

Phil Shoemaker, President

2023/2024 CAROLINA'S SECTION OFFICERS

Please note, Piedmont Coastal Officers and Board Members will be represented on the new Board of the combined section—Carolinas Section. If you would like to serve or assist in the new section, please let me know.

Regards, Sandra (336-302-0253 / Sandra@saponaplastics.com)

Officers	Name	Business	Cell	E-Mail
----------	------	----------	------	--------

Officers:

President	Phil Shoemaker	Polymers Center	980-221-4064	pshoemaker@polymers-center.org
Pres-Elect	Rodney Joslin	TE	336-314-7667	rodney.joslin@te.com
Treasurer	Lewis Wilson	Retired	336-314-2776	lwilson1492@att.net
Secretary	Glenn Shearin	CCCC	919-515-2126	gshearin@cccc.edu
Councilor	Tim Haake	GOETTERT Inc.	803-324-3883	tim@goettfert.com

Board of Directors:

2023/2024	Maury Balik	Sandra Lail	open
2024/2025	Sandra Lail	Maury Balik	open

Committee Chairs:

- House - Rodney Joslin
- Education - Richard Spontak
- Advertising - Sandra Lail
- Rules - BOD
- Historian - BOD
- Membership / Newsletter Editor - Sandra Lail
- Awards - Education Committee –Glenn Shearin

We are always looking for new
BOD volunteers and officers

Carolina's Section Meetings are traditionally held on the 2nd Tuesday of the month; however, dates may differ to accommodate availability of venue and/or participants. Actual dates will be published in advanced of the upcoming meetings.



**Carolina's SPE
Event—October 25th**



Tour & Presentation

Date: October 25th

Time: 3:30 pm —6:00 pm

3:30 pm dinner / 4:30 pm Tour / 5:15 pm Stratasys

Where: Joe Gibbs Racing

13415 Reese Blvd W

Huntersville, NC

To sign up go to:

stratasys <https://go.stratasys.com/gen-3dp-truck-sdm.html>
DIRECT MANUFACTURING

SPE member cost \$20.

50-50 Raffle—\$ 5 tickets supporting SPE Scholarships

ZAG EQUIPMENT SALES

High Quality Plastics Manufacturing Equipment

ZAGEQUIPMENT.COM
888-845-6395

Sales@ZAGEquipment.com



✓ TECHNICAL SERVICE

On-site service, automation, training, consulting, & trouble shooting.

✓ NEW EQUIPMENT

Fast delivery of auxillary equipment.

✓ USED EQUIPMENT

Inventory located in Gibsonville, North Carolina.



Marty Key

marty@zagequipment.com
919-625-4695



Dillon Crowley

dillon@zagequipment.com
919-357-2587



Tim Gould

tim@zagequipment.com
678-305-0575

Fordham Plastics

FORDHAMPLASTICS.COM

866-467-0708

WE PROVIDE HIGH-END PLASTICS MANUFACTURING EQUIPMENT THROUGHOUT THE SOUTHEAST



INFO@FORDHAMPLASTICS.COM



Doug Miller

dmiller@fordhamplastics.com
336-264-0217



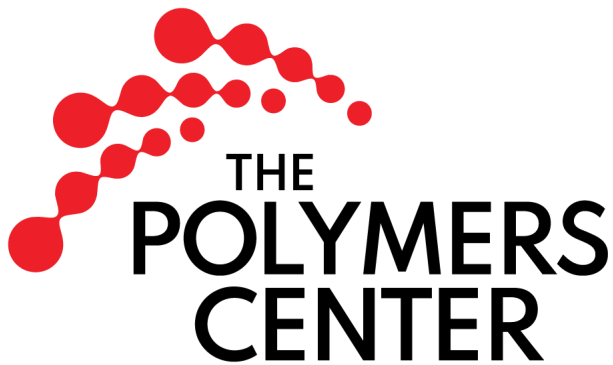
Scott Zuber

scott@fordhamplastics.com
919-302-2571



Tristan Zuber

tristan@fordhamplastics.com
919-270-4198



8900 Research Drive

Charlotte, NC 28261

www.polymerscenter.org

704-602-4100



GÖTTFERT is the world's leading supplier of rheological material testing machines in the field of plastics and rubbers. Our testing machines, Melt Indexers and Rheometers, are used in production control laboratories, in R&D departments and universities. Our portfolio of rheological testing instruments is also covering on-line rheometers for production extruders. We work closely together with PCE in Charlotte, NC, whose lab has many of our instruments available for testing.

www.goettfert.com

tim@goettfert.com (803) 324-3883



**EMERALD
TOOL & MOLD**

DESIGN • BUILD • RUN

Emerald Tool & Mold Inc.
106 Furlong Industrial Drive
Kernersville, NC 27284
336-996-6445
www.emeraldtoolandmold.com



INSPIRING
PLASTICS
PROFESSIONALS

**SPE Carolinas Section Board of Directors
Meeting minutes for August 8, 2023**

Board members in attendance: Phil Shoemaker, Tim Haake, Lewis Wilson, Maury Balik, Sandra Lail, Rodney Joslin, and Glenn Shearin

The meeting was called to order by President Phil Shoemaker at 4:45 pm.

Secretary's Report – Glenn Shearin

There was no Secretary's Report from the previous month due to the consolidation of SPE Piedmont Coastal and SPE Carolinas Section.

Treasurer's Report – Lewis Wilson

1) Tim Haake moved to approve the adjusted Treasurer's Report for July 2023. Second – Phil Shoemaker. Approved.

Financial Statement: July 1, 2023

Starting balance \$32,786.40

Income: \$1.39

Expenses \$0.00

Ending balance \$32,787.79 July-31-2023

Information provided by Lewis Wilson

Membership Report – Sandra Lail

Piedmont Coastal - 60 Members and 6 Students

Carolinas Section - 161 Members and 5 Students

Newsletter Report – Sandra Lail

Sandra Lail indicated that there is nothing to report currently, but it is appropriate to put a copy of the budget in the first newsletter.

Phil Shoemaker raised a question about the content of the newsletter. He asked whether heightened interest would be generated if the newsletter focused more on plastics industry topics rather than the activities of the section.

Sandra indicated that once the first newsletter was created and sent, contact and marketing would occur soliciting advertisers and members to renew their advertising contracts and memberships.

Education Report – Maury Balik

Dr. Balik indicated that there is nothing to report currently.

Counselor's Report – Rodney Joslin

Rodney Joslin and Tim Haake announced that they had nothing new for the counsellor's report.

General Discussion

Old Business:

1. Lewis Wilson indicated that the 990 N postcard had been sent to the IRS indicating a yearly filing by a small tax-exempt organization.

EIN	Organization Name	Tax Year	End Date	Created On	Status	Submission ID	Action
56-6062804	<u>SOCIETY OF PLASTICS ENGINEERS</u>	2022	06-30-2023	08-01-2023	Accepted	10065520232136886710	

New Business:

Phil Shoemaker gave a short agenda of proposed activities for the coming year:

September 2023, Phil is working with CORE Technologies to set a meeting date for one of the coming months. Core Technologies is located on the campus of NC A&T in Greensboro, NC.

October 2023, Rodney is working on setting up a tour and demonstration with Stratsys 3D Printing for October 2023. It will be at the NASCAR Museum in Charlotte, NC.

Minutes of the SPE Carolinas Section Board of Directors Meeting of August 8, 2023

November 2023, Phil is working on setting up a presentation on Rheology which will be given by Fredrick Feidler and his team. It will be at the Polymer Center.

January 2024, Rodney will be working on setting up an event with Childress Racing, but he has yet to receive a call back from the organization.

February 2024, Education meeting is planned for February 2024 at the Centennial Campus at NC State University.

March 2024, the suggested meeting for March 2024 will be a presentation of a twin-screw molding machine.

Proposed Budget for 2023-2024 created by Lewis Wilson

A suggestion was made to amend the following categories:

Counselor's travel should be adjusted to \$0

Scholarships and Grants should be adjusted to \$1500.00

Board Meetings should be adjusted to \$0

Amendments were made accordingly and are reflected in the budget above.

Phil Shoemaker moved to approve the proposed budget. Second – Rodney Joslin. Approved

SPE Carolinas Financial Planning for 2023-2024.

A discussion ensued among the group as to how the \$32,786,40 should be held. Should it be held in the bank or invested so as to earn monies which could be used to help pay for educational scholarships and other expenses? Phil Shoemaker mentioned that the SPE Carolinas had an existing scholarship fund called "The Joe Bennet" Scholarship. Lewis Wilson also added that currently the only financial vehicles available were the Wells Fargo checking accounts and possibly a credit card through Wells Fargo. A discussion was also had about how much money should be kept in the checking account and how much should be invested. No consensus was reached among the group. The discussion will be continued during the next BOD meeting in September, 2023.

Tim Haake and Phil Shoemaker added that they knew an investment counselor and would consult with that individual as to the best way to handle this.

There was no date set for the next SPE Carolinas Section.

August 8, 2023, the planning meeting of the Carolinas Chapter BOD was adjourned at 5:41 pm upon the motion of Tim Haake and Second by Phil Shoemaker. Approved

Respectfully submitted,
Glenn Shearin, Secretary
SPE Piedmont-Coastal Section
August 9, 2023

The Board of Directors meetings of the Carolinas Section are traditionally held on the 2nd Monday of the month via Zoom. These meetings are open to all SPE members. Please contact any officer or board member for more information or should you wish to attend.

The General Meetings of the Carolinas Section are traditionally held on the 2nd Tuesday of the month. However, dates may differ to accommodate the availability of the venue and/or participants and complications due to COVID-19. Actual dates will be published in the PC Section Newsletter in advance of the upcoming meetings.

2023-2024 BOD Approved Annual Budget

Society of Plastics Engineers, Carolinas Section (S49)			
Annual Budget/ Financial Report - Period Beginning July 1, 2023 and Ending June 30, 2024			
Balance as of July 1, 2023	(1)	\$ 32,786.40	
INCOME		2022 Carry Over	2022/2023 Budget
SPE Rebate	(2)	\$ -	\$ 400.00
Interest & Dividends	(3)	\$ -	\$ 15.00
Monthly Meetings	(4)	\$ -	\$ 750.00
Board Meetings	(5)	\$ -	\$ -
MegaTech Receipts	(6)	\$ -	
Educational Programs	(7)	\$ -	\$ -
Newsletter Ads/Sponsorships	(8)	\$ -	\$ 2,000.00
(Minitec)	(9)	\$ -	
Golf Outing	(10)	\$ -	\$ -
Contributions	(11)	\$ -	\$ -
Other _____	(12)	\$ -	\$ -
Other _____	(13)	\$ -	\$ -
Total Income: (add lines 2-13)	(14)	\$ -	\$ 3,165.00
Total Funds Available	(15)	\$ 32,786.40	\$ 35,951.40
(add lines 1 and 14)			
EXPENSE		Actual	Budget
General Office Expense/Service Chgs, Co	(16)	\$ -	\$ 300.00
Monthly Meetings	(17)	\$ -	\$ 950.00
Board Meetings	(18)	\$ -	\$ -
Clemson Student Chapter Expenses	(19)	\$ -	\$ -
Educational Programs	(20)	\$ -	\$ -
Newsletter Web Hosting SPE/Printing/M:	(21)	\$ -	\$ 150.00
Holiday Party	(22)	\$ -	\$ -
Golf Outing	(23)	\$ -	\$ -
Awards	(24)	\$ -	\$ -
Scholarships/Grants	(25)	\$ -	\$ 1,500.00
ANTEC Expense (Student Activities)	(26)	\$ -	\$ -
Councilor Travel	(27)	\$ -	\$ -
D&O Insurance Policy (covered by SPE ref	(28)	\$ -	\$ 350.00
Other _____	(29)	\$ -	\$ -
Total Expense: (add lines 16-29)	(30)	\$ -	\$ 3,250.00
Ending Balance:	(31)	\$ 32,786.40	\$ 32,701.40
(Subtract line 30 from line 15)			
Treasurer's Signature:	<i>Lewis Wilson</i>		
Audit Committee Attest:	_____		

SPE FOUNDATION www.4spe.org

Our Mission: The SPE Foundation supports the development of plastics professionals by funding quality educational programs, grants, and scholarships emphasizing science, engineering, sustainability, and manufacturing while working to create inclusive opportunities for students around the world.

For more information, see the SPE Foundation Impact Report at www.4spe.org.

Delivering the Broadest Portfolio of
High Performance Polymers



JIM BRICKLEY
DIRECTOR OF ENGINEERING

(980)434-8929
JIM@CONVENTUSPOLYMERS.COM

CONVENTUS
BEYOND POLYMERS

CONVENTUSPOLYMERS.COM



SPE ANNUAL FINANCIAL REPORT

Annual Financial Report for the Period: **July 1, 2022 to June 30, 2023**

Section/Division Name: **Carolinas**

Balance as of July 1, 2022 -1 **\$ 20,180.35**

Cash, checking, savings, investments.

Equal to line 32 of previous year's SPE Financial Report. On file with SPE HQ if needed

Income		Actual	Budget	Variance
Interest & Dividends	-2	\$ 9.89	\$ 12.25	\$ (2.36)
Monthly Meetings	-3	\$ -	\$ -	\$ -
Board Meetings	-4	\$ -	\$ -	\$ -
TOPCON Receipts	-5	\$ -	\$ -	\$ -
Educational Programs	-6	\$ -	\$ -	\$ -
Newsletter Ads / Sponsorships	-7	\$ -	\$ -	\$ -
Grant Contributions	-8	\$ -	\$ -	\$ -
Scholarship Contributions	-9	\$ -	\$ -	\$ -
SPE Rebate	-10	\$ 360.00	\$ 200.00	\$ 160.00
Other:	-11	\$ 5.00	\$ -	\$ 5.00
Other: Transfer from Piedmont-Coastal Section	-12	\$ 1,015.48	\$ -	\$ 1,015.48
Other: Transfer from TOPCON WF bank account	-13	\$ 11,107.80	\$ 11,000.00	\$ 107.80
Other: Transfer from Education WF bank account	-14	\$ 454.88	\$ 450.00	\$ 4.88
Other:	-15	\$ -	\$ -	\$ -
Total Income (add lines 2 - 15)	-16	\$ 12,953.05	\$ 11,662.25	\$ 1,290.80

Total Funds Available (add lines 1 and 16) -17 **\$ 33,133.40** **\$ 31,842.60** **\$ 21,471.15**

Expenses		Actual	Budget	Variance
General Office Expenses	-18	\$ 47.00	\$ 500.00	\$ (453.00)
Monthly Meetings	-19	\$ -	\$ -	\$ -
Board Meetings	-20	\$ -	\$ -	\$ -
TOPCON	-21	\$ -	\$ -	\$ -
Educational Programs	-22	\$ -	\$ -	\$ -
Newsletter Printing / Mailing	-23	\$ -	\$ -	\$ -
Awards	-24	\$ -	\$ -	\$ -
Scholarships / Grants	-25	\$ -	\$ -	\$ -
ANTEC Expenses	-26	\$ -	\$ -	\$ -
Councilor Travel	-27	\$ -	\$ -	\$ -
Chapter Insurance	-28	\$ 300.00	\$ 300.00	\$ -
Other:	-29	\$ -	\$ -	\$ -
Other:	-30	\$ -	\$ -	\$ -
Total Expenses (add lines 18 - 30)	-31	\$ 347.00	\$ 800.00	\$ (453.00)

Ending Balance (subtract line 31 from line 17) -32 **\$ 32,786.40** **\$ 31,042.60** **\$ 21,924.15**

Allocation of Funds on Line 32 (enter allocations as applicable)

Checking Account-Wells Fargo	(A)	\$ 32,786.40
Savings Account 1	(B)	\$ -
Savings Account 2	(C)	\$ -
Investment 1	(D)	\$ -
Investment 2	(E)	\$ -
Investment 3	(F)	\$ -
TOTAL	(G)	\$ 32,786.40

Amount on line G should equal amount reported on line 32

Section / Division Treasurer's Name:

Audit Committee Attest:

Carolina's SPE Membership News

The base cost for SPE membership is \$135. Each additional section and/or division you join will be \$10. Your current choices are preselected and you would have to uncheck them to reduce your rate.

When you log on it will show the cost of \$135 on the first page. As you continue through the process by selecting "next" at the bottom of each page you come to a page that shows all of the sections and divisions. On that page your current selections are checked.

With the merger of the Piedmont Coastal section with Carolinas all Piedmont Coastal memberships will transfer to Carolinas SPE when renewing your membership.

We would love to have our members join us for the new chapter we are beginning with the 2023-2024 year.

Thanks

Sandra Lail, Newsletter Editor;
sandra@saponaplastics.com

Thank you for your support for our SPE Piedmont Coastal section. With the merger with Carolinas we have 232 total members (including students). Thanks to CCCC and NCSU for their support.

I encourage every member to **sign up a new member for 2023-2024**. Let's all work toward increasing our membership. If you have changed jobs or location, please send me a note. If you have any email, employment, or phone number changes, please contact me as well.

If you have someone you feel can benefit from joining SPE, give them an application or send me their name and I will submit it to SPE and have you as the referring member.

Newsletter:

The newsletter will be posted on the main SPE web- site this year. With everyone using smartphones, it is better to download the newsletter at your convenience.

Go to: www.SPE4.org> communities

Carolinas S49 SPE section.

If you have any questions, please contact me by e-mail at sandra@saponaplastics.com

Sandra L. Lail, Membership Chair

**NC STATE UNIVERSITY****Sapona Plastics, LLC****Sandra Lail, VP Sales**

7039 US Hwy 220 S

Asheboro, NC 27205

336-302-0253

Sandra@saponaplastics.com**ADVERTISING REPORT****Carolinas Section S49 2023-2024**

We are accepting AD supporters for 2023/2024. We appreciate all of our AD sponsors. Please check their web sites and support them. **All fees go to our scholarship fund.** We will also give each AD supporter a ½ page space to place an article on their product or company: one per year. We try to reach over 400 plastic contacts in the Southeast. The newsletter is also available on 4SPE.org and can be accessed by every SPE member nationally.

Fee Schedule – one cost covers 6 issues in 2023/2024 year. Ads may be in color.

Business card \$ 150 1.75" x 3.25

¼ Page \$ 250 3.5" x 4.75" or 2.25" x 7.0"

½ Page \$ 375 3.5" x 9.5" or 4.75" x 7.0"

If you have any questions, please contact me by e-mail at sandra@saponaplastics.com