

June is our Additive Manufacturing Month – a series of four speakers on consecutive Thursdays in June.

Thursday June 3<sup>rd</sup> at 12pm ET

### Tailoring Polyimide Structure for Additive Manufacturing: Balancing Reactivity, Rheology, and Resolution (3Rs)

Christopher Williams  
Virginia Tech  
[cbwill@vt.edu](mailto:cbwill@vt.edu)

Timothy Long  
Arizona State Univ  
[timothy.e.long@asu.edu](mailto:timothy.e.long@asu.edu)

### Abstract

The discovery of advanced polymeric materials for advanced manufacturing demands a seamless partnership among scientists and engineers, and a keen attention to the delicate balance of reactivity, rheology, and resolution will accelerate impact with enabling fundamental relationships.

Our teamed presentation will describe our recent advances in the structure-property-processing relationships of polyimides, introduction of photo-reactivity to polyimide precursors, polyimide printing of precise geometric objects, and recent directions in printer design. We will discuss the challenges of printing high molecular weight polyimides and demonstrate the physical properties and performance of printed polyimides. The lecture will conclude with a perspective on the grand challenges for both engineering polymers and next generation printing modalities that enable printing high performance three-dimensional polyimide objects.

This presentation is brought to you by:



### MEETING DETAILS

Visit [cabb-chemicals.com](http://cabb-chemicals.com) to register for this presentation.

Links to join the virtual meetings will also be distributed via our mailing list.

There is no charge for the presentation, which will begin at 12 ET on Thursday, June 3<sup>rd</sup>.



## Additive Manufacturing Month – a series of four speakers on consecutive Thursdays in June

Thursday June 10<sup>th</sup> at 12 pm ET

### Additive Manufacturing via Ambient Reactive Extrusion

Eric Epstein and Cindy Kutchko  
PPG Industries

eepstein@ppg.com  
ckutchko@ppg.com

### Abstract

In this presentation, we will discuss a unique method of 3D printing known as Ambient Reactive Extrusion (ARE). ARE is a top-down additive manufacturing method whereby two co-reactive liquids are mixed, extruded through a nozzle and cured to form a 3D thermoset. By combining resins that readily react at ambient temperature, 3D objects are constructed with less energy input (no external heating or UV energy required), and at rates that exceed the limits of traditional 3D printing.

One major advantage of ARE is it enables covalent bonding between successively deposited layers, enabling seamless multi-material printing, isotropic mechanical properties, as well as easy manufacture of water-tight parts. ARE is also much more easily scaled for large-area manufacture than SLA and other UV-vat polymerization processes.

Using this proprietary technique, PPG Industries is introducing a broad portfolio of 3D printing materials with unprecedented properties, including elastomers with ultrahigh toughness, UV resistance, chemical resistance, and even electrical conductivity.

### MEETING DETAILS

Visit [www.njsampe.org](http://www.njsampe.org) to join this presentation via Zoom.

Links to join the virtual meetings will also be distributed via our mailing list.

There is no charge for the presentation, which will begin at 12 ET on Thursday, June 10<sup>th</sup>.



## Additive Manufacturing Month – a series of four speakers on consecutive Thursdays in June

Thursday June 17<sup>th</sup> at 12pm ET

### Materials for Production: How Carbon's Digital Light Synthesis Pairs Advances in Chemistry, Design, and Print Technology to Enable End Use Parts

**Matthew Menyo**  
**Carbon 3d**  
mmenyo@carbon3d.com

#### Abstract

Carbon unites advances in hardware, software, and molecular science to enable digital manufacturing solutions.

Matthew Menyo leads Materials Product Development for Carbon's Materials team, creating innovative new resins for the consumer, automotive, aerospace, and industrial sectors.

#### Bio

Matthew received a B.S. in Materials Science from Penn State and a graduate degree in Bioengineering from the University of California, Santa Barbara, completing his PhD with Professor Craig Hawker.

He has worked on projects ranging from polyolefin/clay nanocomposites to dynamic covalent hydrogels to photopatterned polymer brushes, and is passionate about bringing this experience to Carbon, to create a future fabricated by light.

#### MEETING DETAILS

Visit [www.njsampe.org](http://www.njsampe.org) to join this presentation via Zoom.

Links to join the virtual meetings will also be distributed via our mailing list.

There is no charge for the presentation, which will begin at 12 ET on Thursday, June 17<sup>th</sup>.



## Additive Manufacturing Month – a series of 4 speakers on consecutive Thursdays in June

Thursday June 24<sup>th</sup> at 12pm ET

### Beyond Tooling: Flightworthy Additive Manufacturing Composites

**Regina Pynn**  
**Hexcel**

Regina.Pynn@hexcel.com

### Abstract

Polymer additive manufacturing is flying today on commercial airplanes and on the most advanced space and defense platforms around. This talk will go over stories of the challenges of flight adoption in aerospace, with a discussion of material selection needs for flight components, the challenges and successes of implementation, and examples of how additive must both fit into and expand the conventional design and materials expectations of the industry.

### Bio

Regina Pynn has over a decade in aerospace owning the engineering, fabrication, testing, and qualification of complex engineered systems. In 2017 she joined the Aerospace and Defense division of Oxford Performance Materials which was acquired by Hexcel later that year. Her current role is Product Manager for Hexcel's additive manufacturing division, including the key product offering HexPEKK®, a high performance thermoplastic SLS printing material and process which is flying today inspace, commercial, and military platforms. She holds a B.E. in Mechanical Engineering and an M.E. in Systems Engineering from Stevens Institute of Technology, and lives in Simsbury, Connecticut.

### MEETING DETAILS

Visit [www.njsampe.org](http://www.njsampe.org) to join this presentation via Zoom.

Links to join the virtual meetings will also be distributed via our mailing list.

There is no charge for the presentation, which will begin at 12 ET on Thursday, June 24<sup>th</sup>.



### 2020– 2021 Meeting Schedule

September 17, 2020 – Jacob Shevrin,  
Evonik Corp.

September 21-24 – CAMX, On-Line  
Conference

October 15 – Golf Outing, Picatinny  
Arsenal

December 3, 2020 – Brian Kleinheinz,  
BYK Inc.

January 14, 2021 – Francisco De Caso,  
Univ. Miami

February 4, 2021 – Richard Matthews,  
Thumbprint Solutions Inc.

March 4, 2021 – Kelvin Fu, Univ. of  
Delaware

April 22, 2021 – Raj Manchanda, SAMPE

May 13, 2021 – Gene Ward, Siltech

May 24-27, 2021 – SAMPE 2021, Long  
Beach CA CANCELLED

June 2021 – Additive Manufacturing Month  
(see previous pages for details)

June 29 - July 1, 2021 – SAMPE neXus,  
celebrating the launch of the new virtual  
community platform SAMPE 365

September 23, 2021 – The 38<sup>th</sup> annual NJ  
SAMPE golf tournament at Picatinny  
Arsenal. Save the date.

### New Slate of Officers for 2021-2022

The following members have been  
elected to the Chapter Board.

**Chair:** Russell Caspe

**Treasurer:** Megan Casey

**Secretary:** Amir Islam

**Membership:** Melissa Jaime

**Students:** Joe Abrantes

**Programs:** Howard Klinger

**Advisor-at-Large:** Lou Pilato

**Director:** Vinay Mishra



### New Jersey Chapter

#### Executive Board

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##### **BENJAMIN M. RASMUSSEN CHAIR**

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## Past Chairs, SAMPE Fellows and Senior Honorary Members

### CHAPTER CHAIRS

1977 – 1978 Raymond F. Wegman  
1978 – 1979 William J. Russell  
1979 – 1980 Michael Michno  
1980 – 1981 Fred H. Ancker  
1981 – 1982 Natalia Chujko  
1982 – 1983 Robert J. Narsavage  
1983 – 1984 Richard W. Reiter  
1984 – 1985 Howard S. Kliger  
1985 – 1986 John Burlage  
1986 – 1987 John F. Osterndorf  
1987 – 1988 Thomas J. Green  
1988 – 1989 Harry S. Katz  
1989 – 1990 Benjamin M. Rasmussen  
1990 – 1991 Harry Tenney  
1991 – 1993 Louis A. Pilato  
1993 – 1994 John Burlage  
1994 – 1995 Richard A. Walther  
1995 – 1996 Frans van Antwerpen  
1996 – 1997 Kathleen A. Froelich  
1997 – 1998 Gail D. DiSalvo  
1998 – 1999 Ash Chopra  
1999 – 2013 Benjamin M. Rasmussen  
2013 – 2018 Borys F. Schafran  
2019 - Russell Caspe

### SAMPE FELLOWS

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Harry S. Katz  
Dr. Howard S. Kliger  
Dr. Frank K. Ko  
Robert Pickney  
Dr. Louis A. Pilato  
Leonard Poveromo  
Raymond F. Wegman  
Charles Weizenecker  
Dr. Carl H. Zweben

### SENIOR HONORARY MEMBERS

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Gail DiSalvo  
Edward A. Gallagher  
Robert Golick  
Harry Katz  
Howard S. Kliger  
Charles N. Muldrow  
John Osterndorf  
Louis A. Pilato  
Benjamin M. Rasmussen  
William D. Timmons  
Raymond F. Wegman  
Charles Weizenecker

### **SAMPE Best Chapter Award Winner:**

1990, 1991, 1992, 1993, 1995, 1996, 1997, 1998,  
1999, 2000, 2001

### **SAMPE Chapter Service Excellence Award Winner:**

2002, 2003, 2004, 2005, 2006 (award retired  
after 2006)

### **SAMPE Chapter Sponsored Conferences:**

ISSE – 1990 (Anaheim), 1994 (Anaheim),  
1996 (Anaheim), 1998 (Anaheim), 2002 (Long Beach)

ISTC – 1981 (Mt. Pocono), 1989 (Atlantic City),  
2006 (Dallas), 2009 (Wichita), 2012 (Charleston)

ISEC – 1994 (Parsippany)

## Chapter Sponsors

### **Airtech International, Inc.**

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www.airtechintl.com

### **Bally Ribbon Mills**

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### **Broadview Technologies, Inc.**

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### **Coast Line International**

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### **Evonik Corporation**

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### **Fabric Development Inc.**

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### **Kenrich Petrochemicals**

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### **Novoset LLC**

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### **Siltech Corp**

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### **Vertellus LLC**

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mjaim@vertellus.com  
www.vertellus.com





### Sponsor of the Month: Jayhawk Fine Chemicals Corp.



CABB Group GmbH and its Jayhawk site recently launched [www.dianhydrides.com](http://www.dianhydrides.com), a community website dedicated to dianhydride chemistry.

Without dianhydride chemistry, you would probably not be using your smartphone or computer, or receiving a wireless signal, or using electricity from the wall socket, or driving your car – the list goes on and on!

Dianhydrides have an extensive history as thermal curatives for epoxy resins and as co-monomers for polyimide synthesis.

CABB invites you to explore the information and data presented, along with chemistry, applications, tips and advice on how to leverage dianhydrides for a competitive edge on your next project.

We also encourage you to submit content to expand the community's knowledge base. Become one of our founding contributors today!

For more information,  
please contact:

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Vice President Sales & Marketing  
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[www.jayhawkchem.com](http://www.jayhawkchem.com)



**POSITIONS WANTED** Please keep your fellow NJ SAMPE Colleagues in mind while searching for your next great employee!

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#### Phil Allen

Experienced formulator seeking Technical Service, Technical Sales, Technical Director, or Formulator position - Philadelphia area or remote.

- Vice President of Thermoset Resin Formulators Association.
- 2018-2020 Technical Service Chemist, Huntsman (acquired CVC Thermoset Specialties) Supported formulator customers of specialty epoxy resins and CTBN toughening agents.
- 2010-2018 R&D Chemist, ITW Performance Polymers Formulation and technical service of products in a variety of thermoset chemistries and applications.

Contact: (215) 620-7764  
[uc\\_phil@yahoo.com](mailto:uc_phil@yahoo.com)

#### Jay Shin

Chemical engineering Ph.D. candidate with expertise in polymer & composite material development and process design applying material characterization, process modeling, in situ process diagnostics, and process simulation.

Experienced in defining new scientific and engineering problems, developing research hypotheses and plans, conducting project financial analysis, and evaluating impact of implemented changes.

Hands-on experience in collaborating with industries, communicating research data and deliverables to audiences of all levels through periodic status reports and executive-level board meeting presentations. Strong ability and willingness to acquire new knowledge & skills and take diverse roles in different industries.

Contact: (213) 500-1302  
[shinjung@usc.edu](mailto:shinjung@usc.edu)

## Positions Available in the SAMPE Technologies

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### Randolph Products

#### R&D Chemist

Randolph Products, Chicopee, MA a manufacturer of Military and General Industrial Coatings is looking for a Coatings Formulator with experience in epoxy, polyurethane, alkyd or acrylic systems.

The ideal candidate will have a BS in Chemistry and a minimum of four years experience in the development and commercialization of liquid coatings for General Industrial and Military markets.

Experience in assisting manufacturing and QC a plus. Excellent communication skills and computer skills are a must.

#### Contact:

David Robinson  
Technical Director/Senior Formulation Tech Advisor  
Griffin Performance Polymer Solutions LLC  
Email: [griffinpps@outlook.com](mailto:griffinpps@outlook.com) Cell: 1-973-573-0643

### Randolph Products

#### Color Matcher/Chemist

Randolph Products, Chicopee, MA a manufacturer of Military and General Industrial Coatings is looking for an experienced Color Matcher to work in Manufacturing tinting Production batches. The ideal candidate will have a minimum of two years experience matching paint colors in an industrial environment. In addition, experience using a color spectrophotometer and spraying panels is a plus.

Good computer skills and math skills are essential.

#### Contact:

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