



August 2022 Newsletter

In-Person Meeting

September 8th, 5:30 pm, Rutgers Busch Campus

Dr. Yuebin Guo

***“In-Situ and Real-Time Pyrometry for Thermal History
Diagnosis in Laser Fusion Process”***

Sponsor of the Month

Broadview Technologies



@SAMPE NJ Chapter

<http://njsampe.org>

Our Speaker



Dr. Yuebin Guo is currently the Henry Rutgers Professor of Advanced Manufacturing at Rutgers University - New Brunswick, NJ. Prior to Rutgers, he served as the Assistant Director for Research Partnerships at the U.S. Advanced Manufacturing National Program Office (AMNPO), Gaithersburg, MD. Before joining AMNPO, he was a Professor and Funding Director of the Consortium for Surface Integrity and Functionality at The University of Alabama - Tuscaloosa. He was also an Alexander von Humboldt Visiting Professor at RWTH Aachen and Fraunhofer IPT, Aachen, Germany. His research focuses on AI manufacturing, digital twin, physics-informed machine learning, and materials informatics. He is the author of more than 300 peer-reviewed technical publications in these areas. He was a recipient of numerous awards, including the SME Albert M. Sargent Progress Award, ASME Federal Government Swanson Fellow, Tau Beta Pi Outstanding Faculty, NSF CAREER, SAE Teetor Educational Award, and SME Outstanding Young Manufacturing Engineer. He is an elected fellow of AAAS, ASME, SME, and CIRP.

In-Situ and Real-Time Pyrometry for Thermal History Diagnosis in Laser Fusion Process

Laser-based powder bed fusion (PBF) involves complex thermal cycles including rapid heating, fast solidification, and melt-back effect. The dynamic behavior of the melt pool may cause various quality issues. However, laser-based PBF (e.g., selective laser melting) is a volatile process, which makes in-situ process monitoring very difficult. This study uses in-situ high-speed coaxial pyrometry to real-time capture emission of the dynamic melt pool at the track, layer, and part levels in SLM of SS 316L powders. Emission readings have been characterized and correlated with thermal histories at different levels. The results have shown that a direct relationship between emission and thermal history can be established to qualify emission as a process signature for overheating in an SLM process.

Meeting Details

Date: September 8th, 2022

Location: Rutgers Busch Dining Room A
(attached to Busch Student Center)

RSVP: E-mail Megan Casey at mbc872@gmail.com
Please RSVP by September 1, 2022

Agenda: *Networking Social* - 5:30 pm

Dinner - 6:00 pm

Presentation - 7:00pm

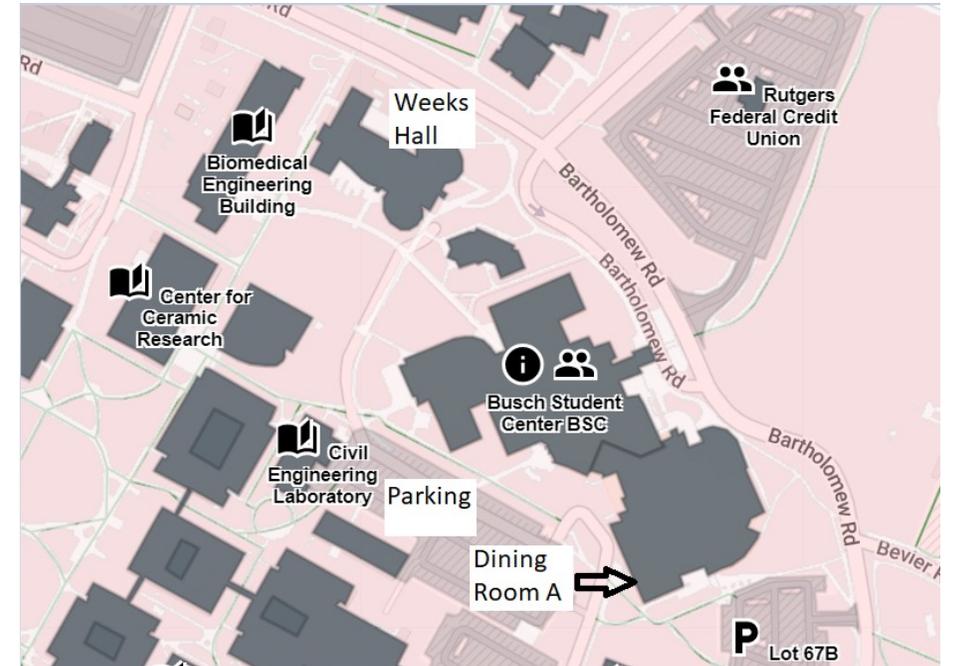
Following the presentation, there will be a tour of the Additive Manufacturing facility in Weeks Hall

Fee: General admission: \$30

Corporate Sponsors: First attendee is free, then \$30 for all others

Students: Always free

Prepay via PayPal to Megan Casey or cash/check at door



Monthly Meeting Preview

Mark your calendar! Looking forward to seeing you!

We are pleased to present our Fall 2022 Additive Manufacturing Series

September 8th – Yuebin Guo - Rutgers University

Rutgers University (with tour of Rutgers AM laboratory)

October 6th - Wangyang Ni – Stryker Corporation

Location TBD

November 3rd – William Wolf – Sartomer Corporation

Location TBD

December 1st – Jaclyn McLaughlin – Rowan University

Location TBD

Contact Howard Kliger hskliger@comcast.net for speaker or sponsorship opportunities. All are welcome!

39th Annual Golf Outing

Don't miss this event! Book today!

September 29, 2022, Picatinny Arsenal Golf Club, Picatinny, NJ Everyone is welcome!

Package includes:

- Greens fee & golf cart
- NJ SAMPE gifts
- Short game practice facility
- Access to locker rooms, showers
- Cash bar at 19th hole
- The famous NJ SAMPE banquet dinner
- \$150 each or \$550 for a complete foursome. NJ SAMPE Corporate Sponsors will receive a \$30 discount for their first golfer. Dinner only: \$35 each

Tee time 11:30 am EST (Shot Gun)

The picturesque Picatinny Golf Club is located on Picatinny Arsenal in Northern New Jersey. Established in 1921, the golf club offers an 18-hole championship course, multiple sets of tees, a top notch short game facility, a fully stocked pro shop and the Sam Adams Pub for your 19th hole comfort.

RESERVATIONS WITH PAYMENT MUST BE RECEIVED BY SEPTEMBER 15, 2022

Contact Megan Casey at 610-427-3534 or mbc872@gmail.com to sign up

Walk-ups are subject to availability and an additional \$20 fee

DIRECTIONS: <https://www.pga.com/golf-courses/details/nj/picatinny-arsenal/picatinny-arsenal-golf-course/map>

August 2022 News

From Melissa Jaime, Benjamin M. Rasmussen Chair, NJ SAMPE

As the newly-elected Chair, it's my pleasure to welcome you to the 45th year of NJ SAMPE! The Chapter Board has an outstanding program planned for the 2022-2023 season, and we are especially looking forward to resuming in-person meetings in September!

I am excited to announce our latest endeavor as a SAMPE North America Center of Excellence in Additive Manufacturing - a series of talks on innovation within the Greater New Jersey region. We invite you to attend the kick-off meeting at Rutgers University in Piscataway on September 8th, featuring a presentation by Dr. Yuebin Guo, Henry Rutgers Professor of Advanced Manufacturing. This meeting will include dinner and a tour of the NJ Advanced Manufacturing Institute.

You may have already noticed the increased activity of SAMPE NJ Chapter on LinkedIn. Be sure to follow us, as we will soon be sharing new initiatives, including a scholarship program and an increased focus on professional development. Throughout the upcoming year, NJ SAMPE will strive to engage more members of the local materials and process engineering community and build upon the legacy of one of the most distinguished Chapters of SAMPE. In addition to our traditional networking events such as the 39th annual golf outing at the Picatinny Arsenal Golf Club on Thursday, Sept. 29th, we are eager to present speakers on various professional development topics in Spring 2023. I encourage all Chapter members to let us know if there are any topics of particular interest, so we can build out our speaking program in the coming years.

NJ SAMPE is appreciative of our generous sponsors, supporting our Chapter throughout the pandemic. In return, we look forward to helping our sponsors recruit the best and brightest employees for their organizations. Our strategy includes a plan to expand our Educational Outreach programs with new Student Chapters at local universities, as well as more opportunities to connect students with professional membership.

Please visit www.njsampe.org to learn more about our Additive Manufacturing, Educational Outreach, and Professional Development initiatives. I would be happy to discuss these with you at a future meeting!

Thank You to Our Sponsors!

We are most pleased to acknowledge our New Jersey Chapter Corporate Sponsors. These fine companies help us to continue our activities and programs.



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Sponsor of the Month – Broadview Technologies Inc.



Since 1970, Broadview Technologies has been a leader in the material science industry, providing high quality products and unparalleled service. Broadview develops and manufactures the world's largest variety of anhydrides for curing epoxy resins, as well as a wide range of flexibilizers and fire retardants.

Flame Retardants: A new revolutionary flame retardant / intumescent agent, INTUMAX®, is ideal for thermoset coatings and foams, potting compounds, fiberglass reinforced structures electrical laminates, thermal plastics, paints, films, resins and many other applications.

Epoxy Curing Agents: With over a dozen different anhydrides available for the curing of epoxy resins, Broadview offers the greatest variety of anhydrides and anhydride systems to solve your problems.

New to Broadview's line are a 70°C curing, low viscosity resin infusion system and a two-phase toughened anhydride system that maintains a high HDT.

Specialty Plasticizers: Broadview's portfolio includes resinous plasticizers especially suitable for plasticizing film forming materials, where conventional plasticizers are not compatible.

Broadview's R&D and technical service laboratories are modern, equipped and staffed by chemists with many years of experience, and ready to serve you.

For more information, contact:



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New Jersey Chapter

2022

Support the NJ Chapter of SAMPE

***Celebrating our 45th year of service to the greater
NY/NJ/CT/PA area***

- Attend a meeting***
- Network with industry peers***
- Make a presentation***
- Become a Corporate Sponsor***
- Volunteer***



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