



*Society for the  
Advancement of  
Material and Process  
Engineering*

# **SAMPE Los Angeles Chapter News and Information**



**February  
2022**

## **Ceramic Matrix Composites Coatings / Surface Finishes Materials For Airships**



**Presented by Jaime Ballester  
February 22, 2022 (Tuesday) at 6:00 PM**

**Date:**

2-22-22 (Tues)

**Time:**

6:00 PM PST

**Reservations:**

Register for the  
Zoom presentation.

**Registration link at:**

You are invited to a Zoom meeting.  
When: Feb, 22, 2022 06:00 PM Pacific Time (US and Canada)

Register in advance for this meeting at:

<https://us02web.zoom.us/meeting/register/tZEqfuiqpjpkGtMsW5cqZiVlt48qkdZDdJVX>

After registering, you will receive a confirmation email containing  
information about joining the meeting.

## About Jaime Ballester

As a co-op student one summer in the late 90's at NTSB's materials lab, he saw a damaged Kevlar fiber composite propeller that never got any attention while he was there. All the senior engineers were metallurgists. He figured out right then that he had to learn composites, and that he wanted to build new planes (ie, not be a 'tin kicker,' which is what people in the NTSB called themselves. Since then, he has been involved with composites in one form or another, mainly in new aircraft development. Whether it is carbon fiber-epoxy (what many people think about when they hear 'composite material'), ceramic matrix composites for high temperature applications, or a myriad of other composites, they are all his passion! Loosely defined, about all but the purest materials are composites, so he has found in his 20 years that the M&P vocation is rich and fertile indeed!



## More About Jaime Ballester



He completed a bachelors degree in Materials Science and Engineering with a focus on semiconductors, which were what the faculty of the department thought he would do after college. When finding a job in that field became difficult due to the 'Dot com bust,' he was ready to pursue his passion in composites instead, and the industry that had that going strong at the time was aerospace and defense. He worked a number of companies as an M&P engineer from 2002 to 2018. A few years ago, he found a job in Silicon Valley as manager leading a small team in a well-funded startup pursuing airships. It allowed him to continue doing part-time materials & process engineering work within his small team and the rest of the organization. With that and prior good experience developing flexible composites for airships, which are making a strong comeback after nearly a century of neglect, the decision was not difficult to make. At the start of 2021 he decided it was time to freelance, with engineering services and entrepreneurial activities filling up most of my time, but more importantly spending more time with my wife and kids!

## Presentation Topics Covered

Now that fiberglass and carbon fiber are so prevalent, the presentation will be in three sections to discuss some other composite materials that are still not as well known, but emerging quickly...and been the main lines of materials and process work Jaime Ballester has been engaged in There. 15 minutes or so per topic, with time after for questions. The three sections are:

Ceramic Matrix Composites- oxide-oxide - Mr. Ballester will cover some highlights of work he performed for Composites Horizons, LLC, developing structural oxide-based ceramic-matrix composites for high temperature/high velocity applications.

Coatings, surface finishes, the surface itself and the importance of that to more functional hardware design (an M&P perspective) -He will cover some basics of coatings for barrier, environmental/corrosion protection, thermodynamics/thermal management and last, but not least: appearance. He will discuss in some detail the science behind material-wave interactions which will help the M&P engineer how to deliver better decorative and functional coatings (again-they are all composite material systems themselves!).

Materials for airships and other floating, hollow, and gas-filled vehicles -. Having spent the better part of a decade working with airships, Ballester will share some of the emerging and 'off the beaten path' applications of composite materials for the particular needs of that industry.



A woman with curly hair, wearing a black shirt and white gloves, is working on a large, curved, white composite part. She is using a small tool to work on the surface. The part is part of a larger assembly, possibly a jet engine component, and is surrounded by other similar parts. The background shows a factory setting with overhead lights.

# CW

CompositesWorld

For the  
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JUNE 2017

# Schedule of Upcoming Events

| Event  | Presented From         | Date                   |
|--|------------------------|------------------------|
| Ceramic Matrix Composites Coatings / Surface Finishes Materials For Airships | Jaime Ballester (Zoom) | February 22, 2022      |
| Medical Design & Manufacturing Show West                                     | Anaheim, CA            | April 12 – 14, 2022    |
| Southern California Facilities Expo  | Anaheim, CA            | April 27 – 28, 2022    |
| TechCon (Society of Vacuum Coaters)  | Long Beach, CA         | April 30 – May 5, 2022 |
| Del Mar Electronics & Manufacturing Show                                     | Del Mar, CA            | May 4- 5, 2022         |
| Space Tech Expo  | Long Beach, CA         | May 23- 25, 2022       |
| CAMX   | Anaheim, CA            | October 10 -13, 2022   |
| Anaheim Electronics & Manufacturing Show                                     | Anaheim, CA            | November 16 -17, 2022  |



The futuristic machine, which resembles a one-person flying chair and is made from aluminum and carbon fiber is powered by eight electric motors and can reach a top speed of 63 mph or 102 km/h with a maximum flight time of 20 minutes. Make sure you land in time before a crash landing on land or a splash landing on water!

## Irene Epstein Scholarship

The Irene Epstein Memorial Scholarship Awards were initiated in 1996 shortly after the death of Irene Epstein, to honor her volunteer efforts on behalf of the Society for the Advancement of Material and Process Engineering (SAMPE), and to recognize her strong desire to assist financially-needy, academically-deserving students at Fairfax High School (Los Angeles) to attend college to study engineering, science, mathematics, or medicine.

The Irene Epstein Memorial Scholarship Awards program was initially funded by contributions from The Aerospace Corporation and SAMPE. It is also supported by the Air Force Space Systems Manufacturing Problem Prevention Program (MP3).

The program is administered by Dr. Howard A. Katzman, Senior Scientist at The Aerospace Corporation, and Education Chairman of the Los Angeles Chapter of SAMPE.

Many individuals and companies have generously contributed to help the fund grow so the amount of the scholarship awards has increased five-fold since it started. In addition, a special Book Awards was introduced three years ago to help selected students in the purchase of their college textbooks. If you would like to make a donation or learn more about the scholarship, please contact Dr. Howard A. Katzman at 310-336-5860 or e-mail him at [Howard.A.Katzman@aero.org](mailto:Howard.A.Katzman@aero.org).

### **Thank you all for your sponsorship and support of SAMPE – LA!!!**

Our list of sponsors is growing!!! Sponsors get monthly exposure in our mailing to over 500 members and associates of the local chapters of SAMPE. Sponsors also get a link to their corporate webpage via the SAMPE Los Angeles Chapter website.

For information on being a sponsor, please contact:

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**Thank you all for your sponsorship and support of SAMPE-LA!!!**

# Join the Society for the Advancement of Material and Process Engineering.



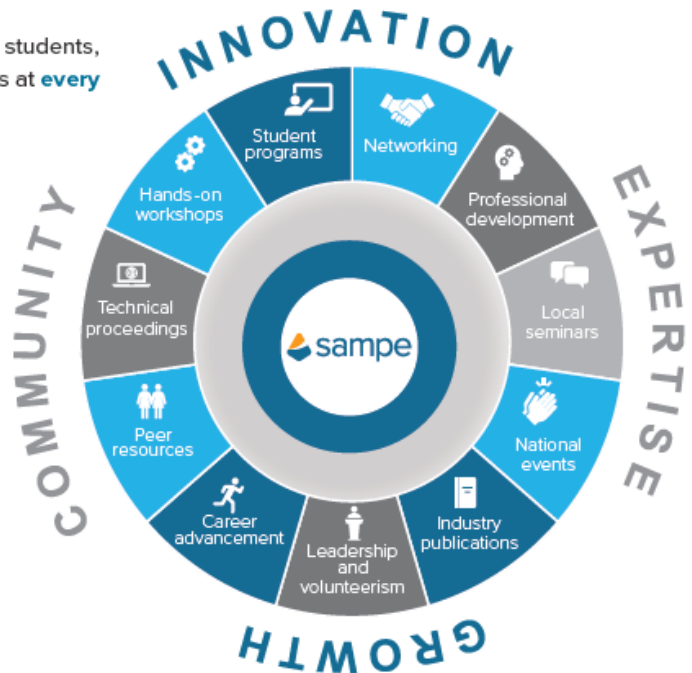
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