



Society for the
Advancement of
Material and Process
Engineering

SAMPE

Los Angeles Chapter News and Information



June
2022

Ceramic Matrix Composites

By Jaime Ballester



Presentation on
June 21, 2022 (Tuesday) at 6:00 PM

Date:

6-21-22 (Tues)

Time:

6:00 PM PDT

Reservations:

Register for the Zoom presentation.

Registration link at:

You are invited to a Zoom meeting.
When: June 21, 2022 06:00 PM Pacific Time (US and Canada)

Register in advance for this meeting at:

https://us02web.zoom.us/meeting/register/tZ0vc-uhRDMoE9DU_S8PKBG8K1iXNi32Rz77

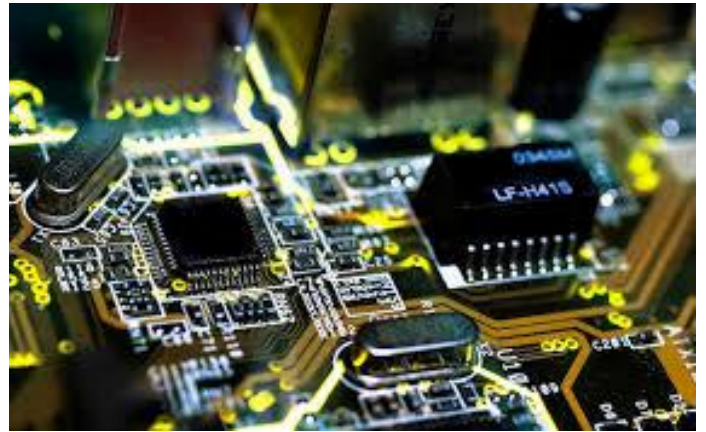
After registering, you will receive a confirmation email containing information about joining the meeting.

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:

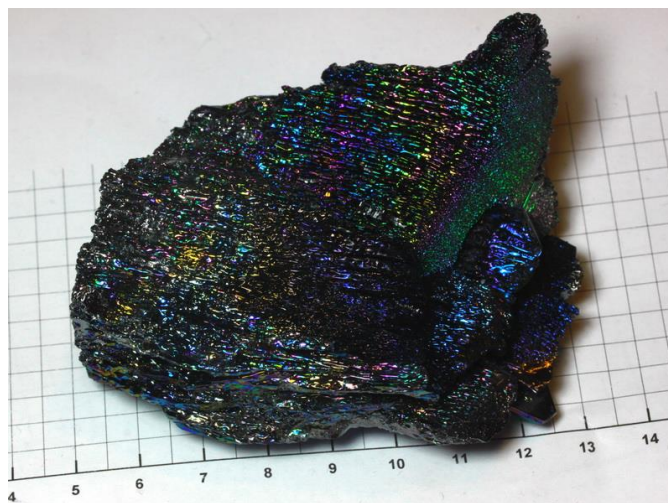
Ceramic Matrix Composites- oxide-oxide - Mr. Ballester will cover some highlights of work he performed for Composites Horizons, LLC, developing structural oxide-based ceramic-matrix composites for high temperature/high velocity applications.

Ceramic Matrix Composites

Structural ceramic-matrix composites for high temperature/high velocity vehicles, energy efficiency, armor, electronics and industrial applications.

Here are some questions that Jaime Ballester intends to answer in the presentation:

1. Why and how are ceramics used in jet engines?
2. Why are ceramics increasingly being used in other transportation/vehicles as we move into higher energy efficiency technologies?
3. Why are ceramics used in electronics? What makes them superior to plastics, metals and regular silicon electronics?
4. How are ceramics used to protect life and defend our country?
5. What types of ceramics are there? Where do ceramics come from? How are they 'made'?
6. How have ceramics shaped our civilization and 'large ways.' – where do we see that?
7. But ceramics are 'fragile'...they crack easily. How come ceramics are used more and more in manufacturing and in making durable goods "really durable"?



Schedule of Upcoming Events

| Event | Presented From | Date |
|--|-----------------|-------------------------|
| Jaime Ballester | Zoom | June 21, 2022 |
| SAAC Expo 2022 | Anaheim, CA | August 18 -19, 2022 |
| LA Build Expo | Los Angeles, CA | September 18 -19, 2022 |
| Light Spec West | Los Angeles, CA | September 21 – 22, 2022 |
| CAMX | Anaheim, CA | October 10 -13, 2022 |
| Anaheim Electronics & Manufacturing Show | Anaheim, CA | November 16 -17, 2022 |
| MD & M West | Anaheim, CA | February 7 -9, 2023 |
| Space Tech Expo | Long Beach, CA | May 2-4, 2023 |



Boeing's Hypersonic 'Valkyrie II' Aircraft Aims To 'Circle World In 1-3 Hours'

George and 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.

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

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