



Science and Technology of Materials, Interfaces, and Processing Southern California Chapter

Holiday 2022

Quarterly Newsletter

Special points of interest:

- *Message From The Chair*
- *ICMCTF 2023*
- *Open Meeting January 18, 2023 at Proud Bird (El Segundo)*
- *Quantum Science Workshop at PCSI 48*
- *SCCAVS Buyer's Guide*

Contact Us:

Corinne D'Ambrosio, Chair
corinne@sccavs.org

Jeffrey Lince, Treasurer
jeff@sccavs.org

Jim Garner, Secretary
jim@sccavs.org

Members at Large:

Tom Anderson

Greg Mills

Todd Ohaks

Fred Praudisch

Rick Seboldt

Richard Stamberg

Matt Tharpe

Steve Hendren

General Inquiries:

info@sccavs.org

Message From The Chair

Contributed by Corinne D'Ambrosio

Happy Holidays to you and yours from all of us on the Southern California Chapter of the AVS Executive Committee. We appreciate your support over the past few years as we have all had to navigate a new way of networking and connecting. Despite what we felt was a step in the right direction hosting our Equipment Exhibition last Fall, this year we had a number of setbacks, and could use your recommendations and participation to keep the Chapter going strong in 2023.

Due to lack of exhibitor registration by the cutoff date this year, we had to cancel the 2022 SCCAVS Equipment Exhibition planned for October 11, 2022 at the Doubletree in Buena Park. We had an incredible Keynote speaker, Ms. Catherine Venturini, Principal Engineer/Scientist for Aerospace Corporation, who planned a presentation that would highlight some of the innovative missions and technology developments from the past, present, and future of CubeSat technology. We also had a number of student posters submitted as well as a free session on Helium Leak Detection from Leybold.

This Fall we decided to try to connect in a smaller setting and perhaps more central location by hosting Ms. Venturini's talk at the Proud Bird in El Segundo. Again, with minimal registrations we had to postpone and plan to try again with a Webinar in Q1 2023.

We have also had some successes this year, with booths at both the ICMCTF in San Diego as well as the SVC conference in Long Beach, with the intention to generate new membership and encourage early-career individuals to participate in the local Chapter. In March we hosted Professor Richard Kaner of UCLA for a well-attended Webinar on Graphene Based Batteries and Super Capacitors. We plan to continue our Webinar series in 2023.

Now we need your help! After a few false starts this year it is clear we need new ideas and want to encourage new leadership within the Chapter. For this reason we will be hosting a number of OPEN MEETINGS this year, the first on **Wednesday, January 18th at the Proud Bird in El Segundo at 6pm**. The next will likely be planned in conjunction with the ICMCTF in San Diego the week of May 21-26, 2023.

Please RSVP for our OPEN MEETING at the Proud Bird January 18, 2023 at 6pm by emailing chair@sccavs.org with your name and number of attendees. THERE IS NO COST TO ATTEND and food and beverages will be provided. This will be an opportunity to share ideas, network, and plan the course of the Chapter in the coming year.

Happy Holidays and Best Wishes in the New Year!

The Fastest Flow Controllers in the World

born in the lab, proven in the coating chamber



Vacuum and flow controllers for quick, steady partial pressures

Relied on in PVD, CVD, and ALD systems—and so much more



Distributed by:
NPB Technology
 Newport Beach, CA
 Phone: (949)945-3316
 info@npbtech.com
 www.npbtech.com

<https://www.alicat.com>

Let's turn work places into quieter spaces

New 120V US Version Available Now!



ECODRY Plus

Your work demands concentration and focus. That's why we have made our newest generation of vacuum pumps even quieter and cleaner.



Authorized Representative:
 NPB Technology Group Inc. | www.npbtech.com | +1 949-945-3316

SCCAVS Related Events



The 49th International Conference on Metallurgical Coatings and Thin Films (ICMCTF 2023) Town & Country Hotel and Convention Center San Diego, California, USA

May 21-26, 2023,

Website: <https://icmctf2023.avs.org/>

The 49th International Conference on Metallurgical Coatings and Thin Films (ICMCTF 2023) is the premier international conference in the field of thin film deposition, characterization, and advanced surface engineering promoting global exchange of ideas and information among scientists, technologists, and manufacturers. Attendees from all over the world come to present their findings, exchange ideas, share insights, make new friends, and renew old acquaintances.

ICMCTF 2023 will include more than more than 90 high-profile invited speakers, in over 50 sessions, across fourteen technical and topical symposia. There will be several **special interest talks** and featured lectures, as well as focused topic sessions, short courses, an **equipment exhibition**, an awards program, and daily social networking events.

Plenary Lecture:

Li-Chyong Chen, Director, Center of Atomic Initiative for New Materials (AI-MAT), National Taiwan University, Taiwan, **“Recent Trends in Artificial Photosynthesis: Atomistic / Surface Design and Probing of Nano-photocatalysts”**

Exhibitors Keynote Lecture:

David Furrer, Senior Fellow, Discipline Lead, Materials & Processes Engineering, Pratt and Whitney, USA, **“Future Requirements for Advanced Surface Modification and Coatings Technologies for Turbine Engine Applications”**

[Continued on next page]

SOUTHERN CALIFORNIA
CHAPTER OF THE AVS :
THE SCIENCE &
TECHNOLOGY OF
MATERIALS,
INTERFACES, AND
PROCESSING

Mailing Address:
Southern California Chapter AVS
616 Hartford Avenue
Huntington Beach, CA 92648

info@sccavs.org

We're on the web!
www.sccavs.org

Upcoming Events

NCCAUS

February 9, 2023
Fremont Marriot Silicon
Valley



ICMCTF 49

May 21-26, 2023
Town & Country
San Diego, CA



SCCAVS Related Events

Short Courses:

Eight half-day short courses covering topics related to thin film deposition, characterization, and advanced surface engineering will be held during ICMCTF 2023 from Sunday-Thursday, May 21-25, 2023. All short courses will include detailed course notes and will run from 8:30 a.m.-12:30 p.m. or 1:30-5:30 p.m. Cost: \$250 Regular and Student Attendees.

Sunday, May 21, 2023

[Plasma Basics](#)

Monday, May 22, 2023

[Physics of Plasmas used in Deposition Processes](#)
[Fundamentals of Sputter Deposition](#)

Tuesday, May 23, 2023

[Control of Micro- and Nanostructure Evolution during Physical Vapor Deposition](#)
[Fundamentals of HIPIMS Plasmas for Thin Film Deposition](#)

Wednesday, May 24, 2023

[Advanced Understanding of HIPIMS Plasmas for Thin Film Deposition](#)
[Practical Thin Film Characterization – An Introduction](#)

Thursday, May 25, 2023

[Thin Film Characterization by X-ray Photoelectron Spectroscopy](#)

Equipment Exhibit:

The **equipment exhibition** is a great place to network and learn about new products, services, and application techniques that will help improve all facets of R&D, Engineering, Manufacturing, Quality Control, and general laboratory operations. Visit the exhibit hall for **FREE** (by registering as Exhibits Only) on Tuesday, May 23, from 12:00-7:00 p.m. and Wednesday, May 24, from 10:00 a.m.- 2:00 p.m. There are also discounted conference registration rates for those in the San Diego area.

Technical Program, Mobile App, Housing, Conference and Short Course Registration, plus Call for Late Breaking Abstracts will launch in late December.

For more information, please visit the conference website at <https://icmctf2023.avs.org/>.

K⁺ GNB GROUP



Contact us for all your vacuum needs!!!

Website: www.gnbvac.com

Phone: 916-395-3003

Email: sales@gnbvac.com



AVS Quantum Science Workshop

Sponsored by the Journal *AVS Quantum Science*
Co-published by AVS and AIP Publishing

AVS Quantum Science
Co-published with AVS

January 19-20, 2023

Sonesta Redondo Beach & Marina
Redondo Beach, California, USA

Following the 48th Conference on the Physics and Chemistry of Surfaces and Interfaces (PCSI-48)

With the emergence of a range of innovative technologies, we can now create quantum objects that are extremely well defined, well characterized and well controlled. This AVS Quantum Science Workshop will cover topics which interface micro-fabrication, materials science with quantum science. It will have three sessions that cover Quantum Computing, Quantum Information, Quantum Sensing.

Topics will cover superconducting qubits, color centers, ion traps, quantum metrology as well as advances in the technologies that enable quantum information processing. These include but are not limited to single photon amplifiers, multiplexers and advances in cryogenic systems, vacuum technology, microwave to optical conversion schemes, etc. Challenges in achieving high performance entangled devices and making precision measurements using quantum systems will be addressed. Apart from the oral sessions, we will have a discussion panel, which will provide an opportunity for researchers to interact with their peers in the field.

More details along with link to technical program can be found here:

<https://conta.cc/3TliY7U>

To register for PCSI 48 go to the following link:

<https://pcsi2023.avs.org/register/>

PCSI 48 48th Conference on the Physics and Chemistry of Surfaces and Interfaces
JANUARY 15-19, 2023, REDONDO BEACH, CALIFORNIA, USA

Clean-Critical Fastener & Seal Solutions

HV, UHV, EUV, Cleanroom Ready Fasteners and Seals
in Just About Any Size, Material, and Finish to Meet Your Needs!

- **RediVac**™ = Clean-tech standard
By UC Components, Inc. All UC products arrive pre-cleaned, vacuum sealed, rigorously inspected, & ready to install
- Vented, plated, baked, inspected, consistent
- Custom solutions & prototypes
- Exceptional customer service
- 100% parts traceability

NOTICE:
Website Upgrade
@
ucomponents.com

- 2D Sales Prints
- Increased Resources
- Streamlined Shopping Experience
- Improved Navigation
- Better Catalog
- Live Chat



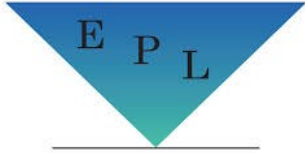
ucomponents.com

Call for a quote today!
(408) 782-1929

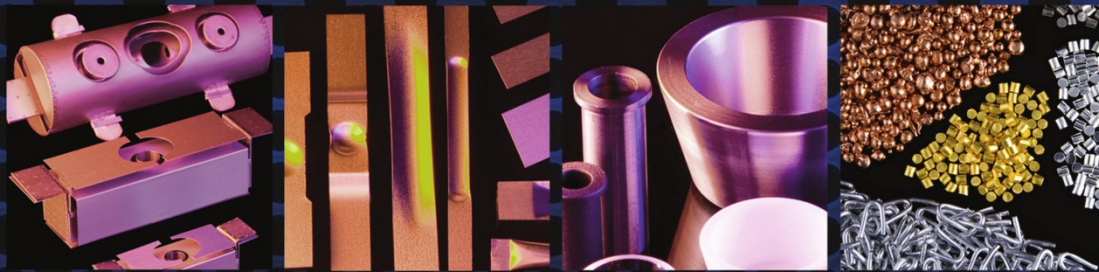
AVS® *Science and Technology of Materials, Interfaces, and Processing*
Southern California Chapter

We're on the web!
www.sccavs.org





LEADING THE WAY.



RD MATHIS COMPANY IS YOUR TOP RESOURCE FOR EVAPORATION SOURCES & MATERIALS.

Unsurpassed Product Quality, Selection, Technical Experience and Customer Care Make RD Mathis Company The Leader In Evaporation & Materials.

From baskets, boats & boxes to filaments, crucibles & liners, we offer an extensive selection of sources and materials to fill your every need. Contact us today.



RDMATHIS.COM
(562) 426-7049
INFO@RDMATHIS.COM

Since 1963

Did you know you can find recordings of recent SCCAVS-sponsored webinars online?

Visit <https://www.sccavs.org/> for full list in PDF/MP4!



Space Tribology Consulting, Inc.

Sharing Expertise. Achieving Results.

Supporting Customers for over 35 years in the areas of:

Vacuum Lubrication Tribology of spacecraft mechanisms
Sliding electrical contacts Low friction/antiwear coatings

Chemistry of surfaces, interfaces, and thin films

jeff@spacetribology.com

www.spacetribology.com

+1 424-218-9800

4265 Baldwin Ave., Culver City CA 90232

AxR Tech

Vacuum and Process Solutions for:

Carbon Nano-Tubes/CNT PVD
HDP-CVD LPCVD/Diffusion
In-situ/Metrology Spectroscopy

www.axrtech.com
1981-B E. Miraloma Ave.

714/803-5111, mobile
Placentia, CA 92870



EP Laboratories, Inc.

... the solution to your testing needs

Nanoindentation
Hardness, Elastic Modulus
Fracture Toughness, Creep

Mechanical Testing
Puncture Resistance, Seal Strength, etc.
Tensile, Flexural & Compression Testing

Scratch Testing
Adhesion, Scratch Resistance

Hardness
Nano, Micro, Vickers, Rockwell
Shore Durometer, Mohs

Coefficient of Friction

Wear & Abrasion

196 Technology Drive · Suite A · Irvine, CA 92618 949-387-8555
info@ep-labs.com www.ep-labs.com

LACO TECHNOLOGIES

THERMAL VACUUM SYSTEMS

CUBE SIZES: 12" TO 48"
CYLINDRICAL SIZES: 12" TO 60" OD
AIR OR WATER COOLING
LOW TEMP OPERATION (TO -80°C)
INERT GAS PURGING
INTERNAL SHELF HEATING/COOLING
FEEDTHROUGHS



Providing world-renowned precision to your thin film process is our mission.

INFICON, the technology leader for in situ vacuum process monitoring, offers a broad selection of RGAs, thin film controllers, sensors, feedthroughs, and crystals for all of your vacuum needs.



Inspired by visions. Proven by success.

www.inficon.com reachus@inficon.com



Contact: NPB Technology Group, Inc.
sales@npbtech.com

WWW.LACOTECH.COM



ROYAL

WELDING & FABRICATING

Custom Hi Vacuum Specialists

- ▶ Interior Tank Polish up to Mirror Finish
- ▶ Chambers out of Aluminum, Stainless, Inconel, or any metal



PPG Hi Vacuum Process Chamber





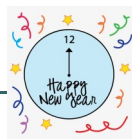

Lockheed PPG Aerospace Hi Vacuum Process Vessel

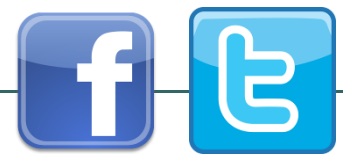


Boeing/NASA Deep Space Testing

(714) 680-6669
www.royalwelding.com

December 2022/January 2023

Sun	Mon	Tue	Wed	Thu	Fri	Sat
18 	19	20	21	22	23	24
25 	26	27	28	29	30	31 
1	2	3	4	5	6	7
8	9	10	11	12	13	14
15 	16	17	18 <i>SCCAVS Meeting @ Proud Bird</i>	19 <i>AVS Quantum Science Workshop</i>	20	21
22	23	24	25	26	27	28



SCCAVS Buyer's Guide

The [Buyer's Guide on the National AVS webpage](#) is also a useful resource.

Company	Scope of Business	Contact
Agilent Technologies, Vacuum Products Division		sales@npbtech.com
Alicat Scientific	Fast, accurate, and configurable mass flow and pressure devices	sales@npbtech.com
DF Technology, Inc.		fredvanderlinde@cs.com
GNB King Lai Group	Vacuum valves, angle valves, ball valves, vacuum chambers & vacuum hardware accessories including KF, CF, and ISO flanges and fittings	sales@gnbvac.com
Inficon		reachus@inficon.com
Kratos Analytical		tswift@kratos.com
LACO Technologies	TVAC, space Simulation, cubesat testing, degassing, medical device testing, product testing, package integrity, altitude simulation, and ASTM D6653	sales@npbtech.com
Leybold	Vacuum pumps, residual gas analyzers, vacuum measurement and control, leak detection and leak testing, vacuum hardware and valves	sales@npbtech.com
Nor-Cal Products		nccsales@n-c.com
NPB Technology Group, Inc.	Professional manufacturer's representative serving the Western United States. Products include chambers, vacuum hardware, pumps, gauges, PVD systems, and engineering services.	sales@npbtech.com



Physical Electronics		agraziano@phi.com
Power Connection, Inc.		vrobinson@powerconnection.com
RD Mathis	Tungsten, Tantalum, Molybdenum Evaporation Sources. Evaporation Materials Au, Ag, Cr, Cu, Ni, Pt, SiO, NiFe, NiCr, various sizes, purities. Power Supply, Feedthroughs, Cables, Electrodes, Gas Purification.	info@rdmathis.com
Royal Welding & Fabricating		cook@royalwelding.com
Space Tribology Consulting, Inc.	Scientific consultant with over 35 years experience in tribology and thin film science, especially with lubricants and materials used in space and other vacuum applications.	jeff@spacetriboology.com
Thermo Fisher Scientific		jamie.chermak@thermofisher.com
UC Components		chris@uccomponents.com
Von Ardenne North America		radach.daniel@vonardenne.biz

