



Science and Technology
of Materials, Interfaces, and Processing

Southern California Chapter

FALL 2014

Quarterly Newsletter

Special points of interest:

- Tour of JPL in Pasadena
- Elmer Carvey Scholarship Winner Announced
- Early Registration deadline is September 12th for SCCAVS Short Course Program to be held September 30-October 2, 2014 at UCLA-Covel Commons
- Schedule Announced for FREE Technical Presentations at SCCAVS Exhibition

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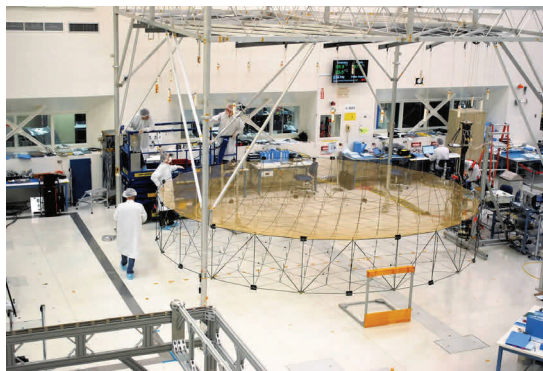
Private Tour of NASA's Jet Propulsion Laboratory

Corinne D'Ambrosio

On Friday, August 1st, 2014, the Southern California Chapter of the American Vacuum Society hosted a private tour of NASA's Jet Propulsion Laboratory for 40 lucky attendees, including a few children enjoying the trip with their parents during summer vacation.

The tour began at the Von Karman Visitor Center with a multimedia presentation entitled "Journey to the Planets and Beyond." We were able to view full-scale replicas of the Galileo spacecraft, Mars Curiosity, Mars Exploration and Pathfinder Rovers, and scale models of the Cassini and Voyager.

During our visit to the Spacecraft Assembly Facility we were able to see the newest spacecraft, SMAP being built, and the collapsible antennae being tested! Finally, we ended at the Space Flight Operations Center (Mission Control), to see communication between dozens of spacecraft in real-time.



Images from JPL Tour (Clockwise from Top Left): Assembly of the SMAP Antenna, Mission Control, & Tour Attendees

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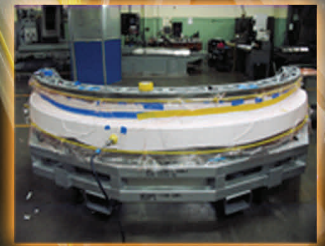
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Elmer Carvey Scholarship Winner Announced

Jeff Lince

The winner of the 2014 Elmer Carvey Scholarship is Josiah Keagy, an undergraduate student at University of California, Riverside, majoring in Physics. He is performing undergraduate research in the area of Surface Science in ultra-high vacuum with Professor Jory Yarmoff. Mr. Keagy is taking the lead on research involving the growth and chemical properties of gold nanoclusters onto brominated silicon materials. The goal is to determine if these clusters exhibit catalytic properties, which has been seen for gold nanoparticles on oxide surfaces.

In pursuit of this goal, Mr. Keagy has constructed a solid-state electrochemical cell for producing bromine in vacuum, and has successfully produced brominated silicon surfaces as monitored by XPS. He is using low energy ion scattering (LEIS) to monitor gold nanoparticle growth, because of its unique ability to determine the surface structure of materials.



2014 Elmer Carvey Scholarship Winner Josiah Keagy

Elmer Carvey Scholarship Winner (cont'd from previous page)

In addition to his primary project, he has also constructed functioning UHV chambers, and has repaired XPS equipment for which nominal performance had previously proved elusive.

Mr. Keagy plans to continue his work at the graduate level, ultimately continuing on to academia as a Professor.

The Elmer Carvey Memorial Scholarship was established in honor of Elmer Carvey, an active member of the SCCAVS from 1964 until 1982. The Scholarship is awarded to undergraduate students attending public, four-year colleges in California who are planning careers in areas of interest to the society, which include:

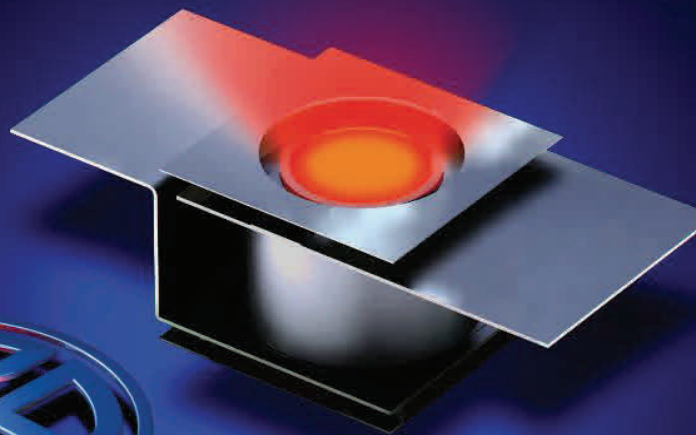
- * Vacuum-related technologies,
- * Surface and thin film science,
- * Nanotechnology,
- * The understanding of materials properties, and
- * The development of new materials.

The stipend is \$1,500.00 for one year. If you know of an undergraduate student who would be a good candidate for this award, please encourage them to apply for the 2015 school year. Application is found online each Spring and more information can be found by visiting www.sccavs.org or contacting jeff@sccavs.org.

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**We're on the web!
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Upcoming Events

SCCAVS Annual
Equipment Exhibition
October 1, 2014
UCLA-Covel Common
Los Angeles, CA



AVS 61st International
Symposium
& Exhibition
November 9-14, 2014
Baltimore, Maryland



2014 SCCAVS Equipment Exhibition & Conference-Technical Presentation Schedule

Wednesday, October 1, 2014
UCLA - Covel Commons, 3rd Floor

Technical Presentation Schedule-FREE TO ATTEND

►“**Super Cooled Argon Clusters – A Universal Sputtering System?**”, Dr. David Surman, President of Kratos Analytical, Inc. discusses technological advances and applications of super-cooled argon cluster sputtering and XPS for depth-profiling of biological and other fragile interfaces.

2:00PM-MAIN FLOOR Grand Horizon Ballroom

►“**Index Dispersion Enhanced Monitoring (IDEM) for Rate Control**”, Wayne Rodgers, President & CEO of Eddy Company presents a new and highly accurate method for controlling the deposition of transparent thin films.

3:00PM-MAIN FLOOR Grand Horizon Ballroom

More Information ONLINE at: <http://www.sccavs.org/symposium2014.html>

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

Short Course Program Early Registration Deadline September 12th, 2014

The **Southern California Chapter of AVS (SCCAVS)** will host the following short course program in conjunction with the SCCAVS Annual Symposium & Exhibition on October 1, 2014 at UCLA Covel Commons.

Controlling Contamination in Vacuum Systems-October 1, 2014 (W)

Instructor: Tim Gessert, Senior Scientist/Leader of the CdTe Research Team, NREL

Fundamentals of Vacuum Technology-September 30 - October 2, 2014 (T-Th)

Instructor: Woody Weed, Technical Staff Member, Sandia National Laboratories

Plasma Etching & RIE: Fundamentals and Applications-September 30 - October 1, 2014 (T-W)

Instructor: Randy Shul, Technical Staff, Sandia National Laboratories

The Practice of Reactive Sputter Deposition-October 1, 2014 (W)

Instructor: William Sproul, President, Reactive Sputtering, Inc.

Cost:

1-Day Course: \$575 Regular/
\$100 Student

2-Day Course: \$850 Regular/
\$200 Student

3-Day Course: \$1,300 Regular/
\$300 Student

All courses run from 8:30am to 5:00pm, lunch is included.

More Information & Register ONLINE at: <http://www.sccavs.org/symposium2014.html>



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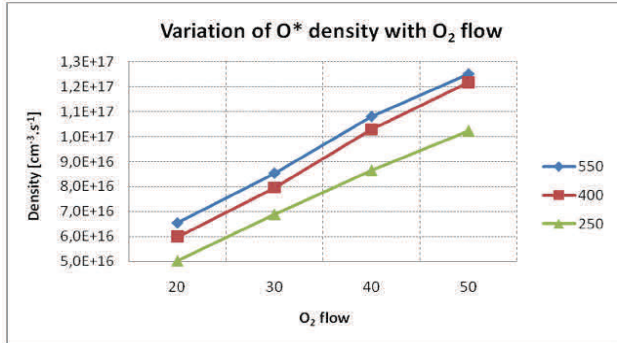
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|---------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| 20 | ~6.5E+16 | ~5.5E+16 | ~4.5E+16 |
| 30 | ~8.5E+16 | ~7.5E+16 | ~6.5E+16 |
| 40 | ~1.1E+17 | ~1.0E+17 | ~8.5E+16 |
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September 2014

| Sun | Mon | Tue | Wed | Thu | Fri | Sat |
|-----|-----|-------------------------|---------------------------------|------------------------|---------------------------------------|-----|
| | 1 | 2 | 3 | 4 | 5 | 6 |
| 7 | 8 | 9 ◦ Full Moon | 10 | 11 | 12 Short Course Early Reg Deadline | 13 |
| 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| 21 | 22 | 23 | 24 • New Moon | 25 | 26 | 27 |
| 28 | 29 | 30 SCCAVS Short Courses | 1 SCCAVS Expo/ Short Courses | 2 SCCAVS Short Courses | 3 | 4 |

