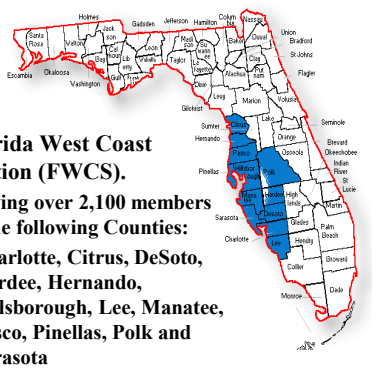

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Please Check the Website Often for UPCOMING EVENTS (Front Page Right Column)
https://r3.ieee.org/fwc/

The SunCoast Signal

The Institute of Electrical and Electronics Engineers, Inc.

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Note: Due to Supply Chain Problems we will print the Signal on White Paper as opposed to the traditional grey

Next ExCom Meeting
Tuesday, September 6, 2022
Google Meet
Register with vTools
https://events.vtools.ieee.org/m/321471

PE Corner
Art Nordlinger, PE, Senior Member
What Qualifies for Continuing Education Hours (Part 2)

Continuing with the previous discussion (Signal – July issue) of different ways to earn Continuing Education Hours (CEHs), here are some others that are, arguably, applicable to a smaller group of engineers. I will continue my editorial commentary on Sections 61G15-22.003 and .004 of the Florida Board of Professional Engineer's rules that address this.

Authoring published technical engineering papers, articles, or books; or accepted licensee examination items for NCEES. Each published peer-reviewed paper or book in the licensee's area of professional practice is equal to 10 continuing education hours. Each published paper or article in the licensee's area of professional practice is equal to 5 continuing education hours. Authoring accepted licensee examination items for NCEES is equal to 2 continuing education hours. If you've been thinking about publishing a paper, might be time to dust it off and get it reviewed.

Patents. Each patent developed using engineering principles is equal to 10 continuing education hours. Active participation in professional or technical societies. Civic or trade organizations do not qualify under this provision. Credit for this activity requires that the licensee serve as an officer of the organization or actively participate on a committee in the organization. Continuing Education credits are not earned until the end of each year of completed service. Active participation in professional and technical societies as described in subsection 61G15-22.003(6), F.A.C.

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Each hour of participation is equal to 1 continuing education hour, with a maximum credit of 4 continuing education hours per renewal period. Get involved! You could earn up to 4 hours for your participation.

Section 61G15-22.005 discusses non-qualifying activities. Activities that do not qualify as Continuing Education Hours include but are not limited to the following: (1) Self-generated courses, that being courses generated and presented by the licensee to himself or herself for continuing education credit. (2) Personal self-improvement courses. (3) Equipment demonstrations or trade show displays. (4) Enrollment without attendance. (5) Repetitive attendance or teaching of the same course. (6) Tours of buildings, structures, schools, museums and such unless there is a clear objective to maintain and strengthen competency in a technical field. (7) Regular employment. (8) Personal, estate or financial planning. (9) Courses the content of which is below the level of knowledge and skill that reflects the responsibility of engineer in charge.

Finally, I would note that if you have questions regarding qualifying or non-qualifying activities, there are very knowledgeable folks at the Board's offices ready to help.

Whether you are a PE looking to attain required CEHs, or an engineer looking to learn something new or keep current with the latest trends in the profession, IEEE has seminars that will meet your needs. With renewal only 5 months away seminar demand is high. Sign up now!

THE SUNCOAST SIGNAL, published monthly by the Florida West Coast Section (FWCS) of the Institute of Electrical and Electronics Engineers, Inc. (IEEE). **Please Note that the SUNCOAST SIGNAL is sent each month to ACTIVE members of the IEEE Florida West Coast Section. So to continue receiving the SIGNAL please keep your membership Active, meaning, renew your membership when it becomes due.** Annual subscription is included in the IEEE membership dues. The opinions expressed, as well as the technical accuracy of authors, advertisers or speakers published in this newsletter are those of the individual authors, advertisers, and speakers. Therefore, no endorsement by the IEEE, its officers, or its members is made or implied. All material for THE SUNCOAST SIGNAL is due in electronic form by the end of day of the 1st Monday after the 1st Tuesday of the month, i.e. the ExCom meeting, preceding the issue month.

Address all correspondence to: Michael Mayor
michael.mayor@ieee.org

IEEE PES Power & Energy Society®

IEEE Florida West Coast Section

IEEE IAS IEEE INDUSTRY APPLICATIONS SOCIETY

UPDATE

Robert DeMelo
Chair: IEEE FWCS PES/IAS

Mark Your Calendars For 2023

IEEE Power & Energy Society (PES) General Meeting 2023

Date: 07/16/2023 - 07/20/2023
Venue: Orlando, FL

The IEEE Power and Energy Society General Meeting (GM) will be held in Orlando. The GM attracts professionals from every segment of the electric power industry. It features a comprehensive technical program with paper presentations, poster and panel sessions, a number of technical tours, a student program and companion activities. This year's technical theme is Paving the Way for Grid Modernization.

Website: **https://pes-gm.org**

IEEE Power Systems Relaying and Control Committee PSRC in 2023

IEEE Power System Relaying and Control Committee (PSRC)
In-Person Meeting

Dates: 1/8/2023 - 1/12/2023
Venue: Hyatt Regency
225 E Coastline Drive
Jacksonville, FL, United States 32202

The IEEE PSRC is chaired by the Florida West Coast Section's very own: Murty Yalla.

For More information:
https://www.pes-psrc.org/index.html

PSRC Resource Center:
https://www.pes-psrc.org/knowledgebase.html

Subcommittees of the IEEE PSRC Include:

System Protection,
Line Protection,
Relaying Communication and Control,
Relaying Practices,
Rotating Machinery Protection,
Substation Protection

Subcommittee webpages:
https://www.pes-psrc.org/subcommittees.html

PES/IAS ExCom Meeting
Saturday, September 24, 8:00 am – 9:00 am
Online at:
https://events.vtools.ieee.org/m/292693

Senior Member Roundup
Sep 3, 2022 - 12pm - 3pm

Register: https://events.vtools.ieee.org/m/320581
Contact / Questions: andrew.seely@ieee.org hermann.amaya.us@ieee.org

SAVE THE DATE
Senior Member Gala Banquet
St. Petersburg Yacht Club
Saturday, November 5, 2022

The IEEE Florida West Coast Section Senior Membership Elevation Committee and the FWCS Executive Committee are pleased to announce the 2022 Senior Member Gala Banquet, to be held on 5 November in St. Petersburg's beautiful downtown waterfront. All FWCS members are invited to join FWCS in recognition of the accomplishments of the Section's Senior and Life Senior Members.

The Gala program will include presentations on Senior Membership development in the Section and the Region, highlighting plans for new opportunities for professional engagement and leadership in 2023 such as speaking, collaborating, and mentoring opportunities available specifically for our Senior and Life Senior members. A FWCS Senior Member Keynote will showcase the impact an IEEE member can have on technology. Awards and recognitions will showcase the accomplishments of contributors to the Senior Member experience during the pandemic years 2020-2022, including the contributions of our University of South Florida student members who have collaborated with the Senior Member Elevation Committee to launch the monthly Signal newsletter featured Student Member interview of a new Senior Member.

There will be opportunities to sign up to contribute to the Senior Member Elevation Committee, to be interviewed by a USF engineering student for the Signal series, and to support FWCS Senior Member activities in the coming year. FWCS members eligible but not yet a Senior Member will have the opportunity to start the process and be elevated in the next promotion cycle.

Business or formal attire is suggested, and pre-registration is required. Registration is at:

https://events.vtools.ieee.org/m/318089

For more information or to volunteer in the Gala planning committee, please contact:

Senior Member Elevation Committee Chair, Hermann Amaya at: **hermann.amaya.us@ieee.org.**

Into the Career of a Surface Science Expert Projects & Future Advice

Interview with John Grant, IEEE Senior Member and a Surface Science Expert, by Huat Hee Chiang, a third-year Computer Science student at USF

In an interview with John Grant, an IEEE senior member and surface science expert with extensive experience in Auger electron spectroscopy, low energy electron diffraction, and ultrahigh vacuum techniques, we explore his interesting journey and contributions to the surface structures and compositions of semiconductors and metals.

Dr. Grant has worked in this field in Australia, Europe, and the United States and is an internationally recognized authority in the field of surface science. In 2013, Dr. Grant received the IUVSTA Prize in Technology in recognition of his work.

Dr. Grant graduated in 1969 with a PhD in Physics from the University of New South Wales which, at the time, was a very new university. Grant recalls how the University of Sydney was the most prestigious at the time, but how his high school teacher encouraged him and others to attend the new university. “It turned out to be a great decision to go there. They had fantastic staff and back then, some of the staff were not PhDs!” recalled Grant. At the University of New South Wales, Grant worked on semiconductors such as silicon and germanium as well as the photovoltaic effect at surfaces and interfaces.

Grant used the photovoltaic effect to see if the surface rearrangement would go away. He needed a special amplifier to measure the photovoltaic effect. Thus, he had to design the electronics to do it. “I had to go to the library, look up articles, try to figure out how to build a special amplifier, and have someone in the electronics shop help me build that. That was very exciting research – I did that for 4 years,” Dr. Grant recalled. The day after he got his Ph.D., Dr. Grant was on a plane to the United States. He had been offered a position as a visiting scientist to work at the Aerospace Research Laboratory in Dayton, Ohio where he worked for two years.

Afterward, Dr. Grant went to Philips Research Laboratories in the Netherlands where he worked for 2 more years as a visiting scientist. Dr. Grant immigrated to the USA in 1972 where he worked at the Air Force Lab until his retirement in 2014.

While working with metals in the early 1970s, Dr. Grant found one metal to be particularly problematic. When heating up some metals, impurities such as sulphur or carbon would come to the surface which could then be removed with several techniques. With ruthenium, however, a layer of carbon would come to the surface. Its composition as a layer of graphite could be verified from low-energy electron diffraction patterns and also by taking an Auger electron spectrum. To get rid of the layer of carbon, Dr. Grant would sputter it away in argon gas. He noticed, however, that the thin layer of carbon kept coming back on annealing the ruthenium afterward. He had to keep sputtering the layer while the ruthenium sample was hot until all the carbon was gone.

Unbeknownst to Dr. Grant at the time, that single layer of carbon was graphene. It was “discovered” by Andre Geim and Konstantin Novoselov in 2004. They won the Nobel Prize in Physics for their discovery in 2013. “We had that layer (of graphene) but we didn’t know anything about it – we were trying to get rid of it. But he (Geim) actually used it, and it was a fantastic development in materials science!”

Dr. Grant puts a big emphasis on becoming a part of professional societies. He says to become involved early on, volunteer, and become active. “When you’re in college, check if there’s a professional society associated with your work. If it happens to have a student chapter, become a part of that student chapter. You will meet people of different career levels and you’ll make contact which will be valuable later on in your career.

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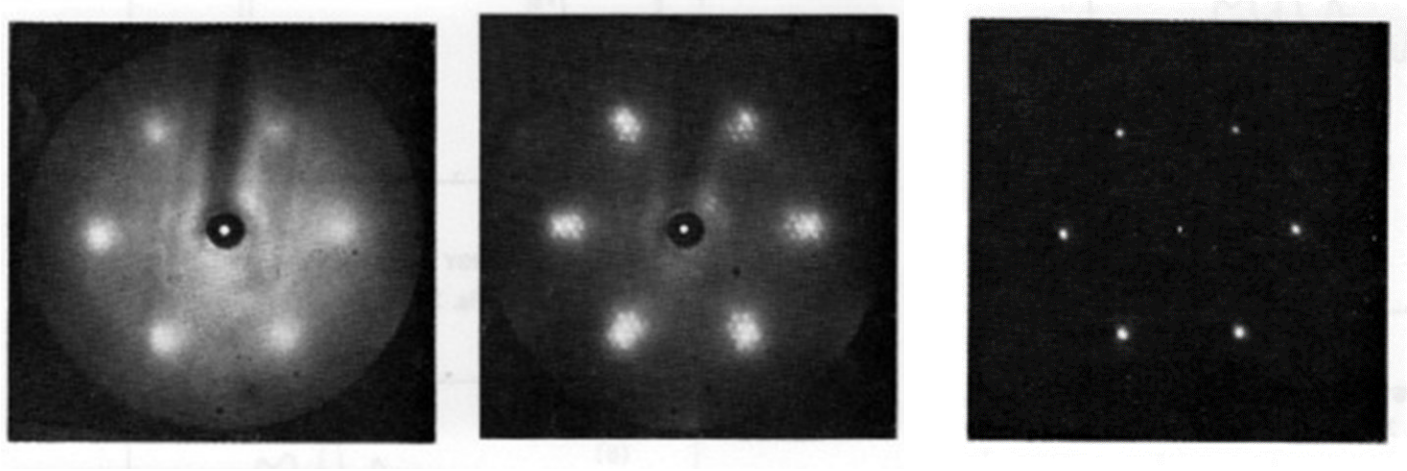
They can help you with jobs, references, and things like that. So becoming a student member of these societies is one of the most important things because you build up a network which later on in life becomes very useful. Volunteer in the society, become active, and take on roles."

Low-energy electron diffraction patterns from the surface of ruthenium showing a layer of graphene while Dr. Grant and his team were trying to clean it.



(a) Si, S and C present at the surface

(b) C present at the surface

(c) Clean surface

Figure 1: Low energy electron diffraction patterns from Ru(0001), 142V:

ELECTRIC VEHICLE & ENERGY EVENT

The St. Petersburg College Engineering Technology, Manufacturing and Building Arts Program will present a series of speakers on energy-related topics and activities, including an Electric Vehicle show and displays from local companies which illustrate energy creation and use.

St. Petersburg Clearwater Campus
Thursday, September 1st, 2022
10 am - 2 pm
AND
5 pm - 8 pm
2465 Drew St., CC Building,
Clearwater, FL

For more information and to register for this event contact:
Sidney Martin at: martin.sidney@spcollege.edu
https://web.spcollege.edu/survey/33844

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September 2022 - Calendar of Events *(For more information see "Inside the SunCoast Signal" → Page 1)*

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