



Cathay June 2017

www.cathayradio.org

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Mission: The Cathay Amateur Radio Club is basically an active social club of Ham Radio Operators and their spouses. We support local community requests for HAM emergency communications. Several of us are trained in CPR/ First Aid and are involved with community disaster preparedness.

Monday Night Net Time: 9 PM Local Time/PST, Frequencies: 146.67MHz -600KHz PL85.4 and 442.70 +5MHz PL 173.8. The repeaters are linked only during the CARC Monday night net.

Update: Link to repeater 442.70 is currently not active until further notice.

The CARC Monday night net is the best way to find out the latest club news.

All check-ins are welcome.

Message from the President: George Chong, W6BUR

Hello CARC Members and Friends;

This month is ARRL field day, June 24-25,2017. I will not be hosting a formal ARRL field day at my home as I have done in the past. However CARC members are welcome to drop by and say hello.

Tech Article Introduction:

For this month Tech Article is the second article in a series on the lithium-ion batteries.

The tech article will discuss a very innovative way to prevent Thermal Runaway with Lithium-ion batteries. So please read and enjoy the article.

ARRL Field Day June 24-25,2017

CARC member Ed Fong is hosting the 2017 Annual CARC / SARES at a new location, Sunnyvale Fire Station #2. It seems that his usual ARRL field day location; Fairbrae Swim and Racquet Club is booked up on the same day.

For those folks living in the North Bay and not wishing to travel so far, the Marin Amateur Radio Society is hosting their ARRL field day in Petaluma, CA (<http://w6sg.net/site/calendar/>).

CARC Final Wrap-up News

In the public service announcement section, please read "**2 M CW NET**" Mike Kelly's request for folks to join his CW net.

I wish to thank our CARC members that set aside their valuable time to participate in our Monday night's nets.

Chat sub s'em to all you CARC members! - George W6BUR.

Public Service Announcements

HAM CRAM / HAM Licensing

For upcoming HAM Licensing locations please refer to:

<http://www.arrl.org/find-an-amateur-radio-license-exam-session>

2 M CW Rag Chew NET

We are looking for new members to join our 2 M CW Rag Chew Net. The net is not affiliated with any club and is simply Hams getting together to rag chew on CW. If you enjoy CW and want to improve or maintain your skill level we want you.

Our CW net runs daily except Wednesday and Sunday on 147.450 simplex at 4 PM. You will need an all mode radio with 2 M capacity. We start on FM on voice to check in then go to CW then come back to FM to finish up and sign off. The net runs for 15 minutes to a half hour depending on traffic and the number of participants. We are operating from Hayward.

We had five members and three have dropped out for various reasons. We would like to get back to 5 +/- members to join us. Is this you or do you know someone that might be interested? Please contact me (aa6mk1@gmail.com) for further information or join us on the air.

Hope you will join us. Bring a friend with you.

73,

Mike Kelly AA6MK
aa6mk1@gmail.com

Auxiliary Communications Service (ACS)

The Auxiliary Communications Service (ACS) was organized by the San Francisco Office of Emergency Services (OES) following the 1989 Loma Prieta Earthquake to support the communications needs of the City and County of San Francisco when responding to emergencies and special events.

The Auxiliary Communications Service holds General Meetings on the third Tuesday of

each month at the San Francisco Emergency Operations Center, 1011 Turk Street (between Gough Street and Laguna Street), from 1900 hours to 2100 hours local time. All interested persons are welcome to attend.

The ACS Net begins at 1930 hours (7:30 p.m.) local time each Thursday evening, on the WA6GG repeater at 442.050 MHz, positive offset, tone 127.3 Hz. The purpose of this net is to practice Net Control skills, practice checking in with deployment status in a formal net, and to share information regarding upcoming ACS events. Guests are welcome to check in. ACS Members should perform Net Control duty on a regular basis. On the second Thursday of each month, the net will be conducted on the output frequency of the WA6GG repeater, 442.050 MHz no offset, tone 127.3 Hz, simplex.

For more information, please attend an ACS meeting or check in on a net, or call 415-558-2717.

Upcoming meetings: Tuesday 7pm, June 20, 2017
 Tuesday 7pm, July 18, 2017
.....Tuesday 7pm, Aug 15, 2017

Gilbert Gin (KJ6HKD)

Free Disaster Preparedness Classes In Oakland:

<http://www.oaklandnet.com/fire/core/index2.html>

CORE is a free training program for individuals, neighborhood groups and community-based organizations in Oakland. The underlying premise is that a major disaster will overwhelm first responders, leaving many citizens on their own for the first 72 hours or longer after the emergency.

If you have questions about the recertification process, you may contact the CORE Coordinator at 510-238-6351 or core@oaklandnet.com.

Free Disaster Preparedness Classes In San Francisco – NERT Taught by San Francisco Fire Department (SFFD).

<http://sf-fire.org/calendar-special-events>

Upcoming events

June 2017

TBD

RSVP to sffdnert@sfgov.org or call 415-970-2024 to register.

Visit www.sfgov.org/sffdnert to learn more about the training, other locations, and register on line.
Upcoming Special NERT Events.

San Francisco Police Department: Auxiliary Law Enforcement Response Team (ALERT)

The Auxiliary Law Enforcement Response Team (ALERT) is a citizen disaster preparedness program designed. The ALERT program is for volunteers 16 years of age or older, who live, work, or attend high school in San Francisco.

Graduates of the San Francisco Police Activities League (P.A.L) Law Enforcement Cadet Academy are also eligible to join.

ALERT volunteers will first complete the Fire Department's Neighborhood Emergency Response Team (NERT) (www.sfgov.org/sfnert) training and then graduate into an 8 hour Police Department course specifically designed for ALERT team members.

ALERT members will work closely with full-time and/or Reserve Police Officers in the event they are deployed after a disaster. The Basic ALERT volunteer will have no law enforcement powers other than those available to all citizens.

SFPD ALERT Training

The next SFPD ALERT training class has been scheduled for Saturday, June 3rd 2017. The class will be held at the San Francisco Police Academy, in the parking lot bungalow, from 8am-5pm (one hour lunch break).

IMPORTANT- All participants must complete the background interview process in order to be eligible to attend the ALERT training class.

Eligible ALERT participants may register for a training class by contacting the ALERT Program Coordinator, Mark Hernandez, at sfpdalert@sfgov.org, or by telephone at 415-401-4615.

SFPD ALERT Practice/Training Drill

All active/trained ALERT members are asked to join us for our next training drill, scheduled for 9:00 am – 1:00 pm Saturday July 29, 2017. Details will be emailed to active ALERT members, prior to the date of the exercise. Participation is not required, but strongly encouraged.

For more information on the San Francisco Police Department ALERT Program, email us at sfpdalert@sfgov.org, or call Sergeant Mark Hernandez (SFPD, Ret.), SFPD ALERT Program Coordinator, at (415) 401-4615.

For additional information on the web please refer to:

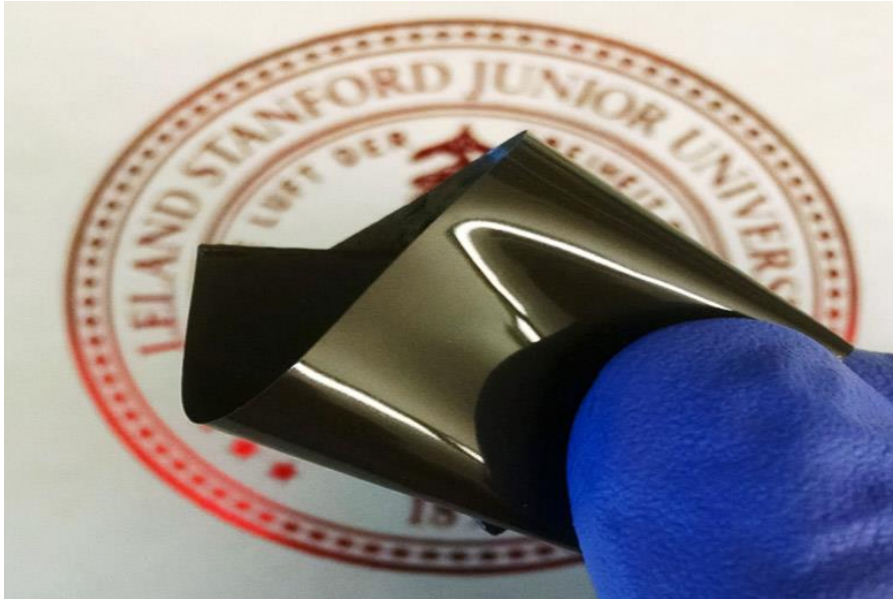
<http://sf-police.org/index.aspx?page=4019>

Tech Article

New Stanford battery shuts down at high temperatures and restarts when it cools

By Mark Shwartz Date January 11, 2016

<http://news.stanford.edu/press-releases/2016/01/11/pr-safe-battery-toggle-011116/>



Stanford researchers have invented a lithium-ion battery that turns on and off depending on the temperature. The new technology could prevent battery fires that have plagued laptops, hoverboards and other electronic devices.


Stanford researchers have developed a thin polyethylene film that prevents a lithium-ion battery from overheating, then restarts the battery when it cools. The film is embedded with spikynanoparticles of graphene-coated nickel. (Photo: Zheng Chen)

Stanford researchers have developed the first lithium-ion battery that shuts down before overheating, then restarts immediately when the temperature cools.

The new technology could prevent the kind of fires that have prompted recalls and bans on a wide range of battery-powered devices, from [recliners](#) and [computers](#) to [navigation systems](#) and [hoverboards](#).

“People have tried different strategies to solve the problem of accidental fires in lithium-ion batteries,” said [Zhenan Bao](#), a professor of chemical engineering at

Stanford. “We’ve designed the first battery that can be shut down and revived over repeated heating and cooling cycles without compromising performance.”

 A portrait of Professor Zhenan Bao, a woman with long dark hair, smiling, wearing a dark jacket, against a blue background.	<p>Professor Zhenan Bao is a Professor of Chemical Engineering at Stanford University.</p> <p>Prior to joining Stanford in 2004, she was a Distinguished Member of Technical Staff in Bell Labs, Lucent Technologies from 1995-2004.</p> <p>She has over 400 refereed publications and over 60 US patents with a Google Scholar H-Index >110. Her work has enabled flexible electronic circuits and displays. In her recent work, she has developed skin-inspired organic electronic materials, which resulted in unprecedented performance or functions in medical devices, energy storage and environmental applications.</p>
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Bao and her colleagues describe the new battery in a study published in the Jan. 11 issue of the new journal [Nature Energy](#).

A typical lithium-ion battery consists of two electrodes and a liquid or gel electrolyte that carries charged particles between them. Puncturing, shorting or overcharging the battery generates heat. If the temperature reaches about 300 degrees Fahrenheit (150 degrees Celsius), the electrolyte could catch fire and trigger an explosion.

Several techniques have been used to prevent battery fires, such as adding flame retardants to the electrolyte. In 2014, Stanford engineer [Yi Cui](#) created a [“smart” battery](#) that provides ample warning before it gets too hot.

“Unfortunately, these techniques are irreversible, so the battery is no longer functional after it overheats,” said study co-author Cui, an associate professor of materials science and engineering and of photon science. “Clearly, in spite of the many efforts made thus far, battery safety remains an important concern and requires a new approach.”

Nanospikes

To address the problem Cui, Bao and postdoctoral scholar Zheng Chen turned to nanotechnology. Bao recently invented a wearable sensor to monitor human body temperature. The sensor is made of a plastic material embedded with tiny particles of nickel with nanoscale spikes protruding from their surface.

For the battery experiment, the researchers coated the spiky nickel particles with graphene, an atom-thick layer of carbon, and embedded the particles in a thin film of elastic polyethylene.

“We attached the polyethylene film to one of the battery electrodes so that an electric current could flow through it,” said Chen, lead author of the study. “To conduct electricity, the spiky particles have to physically touch one another. But during thermal expansion, polyethylene stretches. That causes the particles to spread apart, making the film nonconductive so that electricity can no longer flow through the battery.”

When the researchers heated the battery above 160 F (70 C), the polyethylene film quickly expanded like a balloon, causing the spiky particles to separate and the battery to shut down. But when the temperature dropped back down to 160 F (70 C), the polyethylene shrunk, the particles came back into contact, and the battery started generating electricity again.

“We can even tune the temperature higher or lower depending on how many particles we put in or what type of polymer materials we choose,” said Bao, who is also a professor, by courtesy, of chemistry and of materials science and engineering. “For example, we might want the battery to shut down at 50 C or 100 C.”

Reversible strategy

To test the stability of new material, the researchers repeatedly applied heat to the battery with a hot-air gun. Each time, the battery shut down when it got too hot and quickly resumed operating when the temperature cooled.

“Compared with previous approaches, our design provides a reliable, fast, reversible strategy that can achieve both high battery performance and improved safety,” Cui said. “This strategy holds great promise for practical battery applications.”

Other Stanford co-authors of the study are postdoctoral Nan Liu, Chao Wang, Sean Andrews and Jia Liu; and graduate students Po-Chun Hsu, Jeffrey Lopez, Yuzhang Li and John To.

The research was supported by the SLAC National Accelerator Laboratory and the Precourt Institute for Energy at Stanford.

The 2017 Annual CARC / SARES Picnic - ARRL Field Day

By Ed Fong

Date : Saturday June 24 – starting at 12 PM - dinner is at 5PM

Where: Sunnyvale Fire Station 2 - corner of N. Wolf Rd and Arques Ave. in Sunnyvale
- for directions - just enter *Sunnyvale Fire Station 2* in *Googlemaps*

Cost: Free to all CARC / SARES Members, family and friends

Raffle tickets: - \$5 each

RSVP: edison_fong@hotmail.com

Mark your calendars Folks, ARRL Field Day 2017 is June 24-25. This year we could not get the Fairbrae Swim and Tennis venue. I went there at the beginning of March and another group had already reserved it for the same weekend of June 24. Next year I will need to go there in January to reserve the date. Now that is the bad news.

The good news is that we have made arrangements with the City of Sunnyvale to have 2017 ARRL Field Day at Fire Station 2 in Sunnyvale, no charge. You can spend the night there if you wish. The City of Sunnyvale has given us full access for 24 hours (including spending the night).

Fire Station 2 is both an active fire station as well as the training facility to train all new fire recruits in Santa Clara County. We will have access to the training classroom and the break room. There is also a full service bathroom. There is limited parking at the actual site. If it is full, please park at the Lowe's across the street or use street parking.

Please either bring a side dish (optional) or just buy more raffle tickets for the great prizes. The club will provide for all the main dishes. We will have lots of fun getting together for this annual event.

We will start serving dinner at 5PM. The menu consist of –

- 1/3 lb Sirloin burger with all the trimmings
- Variety of salads
- Variety of chips
- Variety of drinks
- Apple pie and vanilla ice cream for desert

The raffle of prizes will begin after dinner – This year we will have the new Triband mobile radio from Baofeng. We will also have a Windows 10 laptop and the famous County Comm GP5 HF SSB SDR receiver. What club can boost prizes like that?

Fire Station 2 photos



Fire Station House Photo #1



Fire Station House Photo #2



Fire Station House Photo #3



Fire Station House Photo #3

List of Raffle Prizes



1st Prize - HP Elite 8470p – 14 inch Professional Laptop -
CNET rated this laptop a 4.5/5.

This laptop really hums. I tested it with downloading real time *ABC.COM* HDTV and it was only at 48% CPU. *Youtube* full motion video was only 20% CPU. So there is plenty of power to spare.

- Intel Core i5-8470P Processor (2.53-GHz, 3MB L3 cache)* Up to 3.06 GHz with Intel Turbo Boost Technology
- Window 10 operating system
- 4GB of DDR3 ram (upgradable to 8GB) - 320 GB hard drive
- DVD reader/burner, SD reader slot, 4 USB ports
- Line in and headphone jack (most low end computer no longer have line-in)
- HDMI output

HP – quote

“The HP EliteBook 8470p blends modern design and precision engineering, yielding a beautiful product with a platinum color finish. The business rugged design means this laptop can withstand the rigors of business travel. Additionally, the HP EliteBook 8470p passes rigorous MIL-STD 810G testing for vibration, dust, altitude, temperature and drops.”

PC – Magazine

“Strictly speaking, the HP EliteBook 8470p (\$1,499 direct) is a business-class laptop. But that classification doesn't cover all of its capabilities. The EliteBook 8470p is a versatile all-around performer armed with enough firepower to double as a multimedia powerhouse and, to a lesser extent, gaming rig. For the most part, these attributes makes this computer a good system for anyone looking to work during the day and play by night.”



2nd Prize: Baofeng's UV2501 + 220 new Triband Mobile 25 watt transceiver.

This radio boasts 200 memories, full software programmability, great bullet proof front end with 0.25 uV sensitivity, full FM broadcast radio, direct microphone key pad entry, and more.

If you have been looking to get on 220 MHz, this is the latest and greatest. You will be a proud owner of one of these radios.

The Frequency coverage:

- 65-108 MHz – FM broadcast – receive only
- 136-174 MHz – VHF – TX/RX
- 210-230 MHz - TX/RX
- 400- 520 - MHz - TX/RX

Full CTSS and DCS coding

Direct frequency from the mike or by software

Power – 10/25 watt (user programmable)



3rd Prize: Countycomm GP5/SSB the latest and best portable hand held HF SSB receiver in the world. Fully software defined using the SiLabs 4734 DSP chip.

Has software defined product detector and DSP SSB filters for true LSB and USB. 450 memories

Frequency Coverage –

MW/ AM: 520 – 1710 kHz (10K tuning step)

SW: 1.7-30 MHz AM/SSB/CW (with DSP SSB filters)

LW frequency: 150 – 522 kHz AM/SSB/CW

FM: 76 – 108 MHz – stereo

- Displays ambient temperature in Fahrenheit or Celsius
- Operating time: 225 hrs at 40% Volume
- LCD Backlight

Accessories include: Stereo earphones, external AM ferrite antenna, external shortwave antenna, soft carrying pouch, and user manual

Other great prizes –



Lux Pro LED flashlight

The claim is that this is the brightest flashlight in the world that runs on two standard D batteries for a long run time.

Come and check it out, it is really bright.

Great for your home or car.

It boost three mode (hi beam, normal, flashing)

It is fully waterproof.

It uses the CREE XP-G2 R5 LED (brightest LED in the world for its class)



USB Smart Power Pack – 10 AMP/Hr power pack. This USB power pack can be used for any variety of applications – from powering your HT, cell phone, amplified speaker, etc. When a charging plug is not available, it has a 2.5 x 4 inch solar panel as a backup. I tried it and like all solar panels, it must be in direct bright sunlight to charge. NO - you just cannot let it sit on your desk with the ambient light and expect it to charge. It must be in direct sunlight. It is good for about 4 Apple iPhone charges.

Has a built in LED flashlight

Come and see the other great raffle prizes!

73, Ed Fong