

THE PLATTSMOUTH AMATEUR RADIO CLUB

Communicator

June 2021

First-Time Exam Applicants Must Obtain FCC Registration Number before Taking Exam

(ARRL 05/06/2021) Beginning May 20, 2021, all amateur examination applicants will be required to provide an FCC Registration Number (FRN) to the Volunteer Examiners (VEs) before taking an amateur exam. This is necessary due to changes the FCC has made to its licensing system.

Amateur candidates who already have an FCC license, whether for amateur radio or in another service, already have an FRN and can use the same number. All prospective new FCC licensees, however, will be required to obtain an FRN before the examination and provide that number to the volunteer examiners on the Form 605 license application. An FCC instructional video provides step-by-step instructions on how to obtain an FRN through the FCC's COMmission REGistration System (CORES).

The FRN is required for all new applicants to take an amateur exam and is used afterward by the applicant to download the license document from the FCC Universal Licensing System (ULS), upgrade the license, apply for a vanity call sign, and to submit administrative updates (such as address and email changes) and renewal applications.

In addition, after June 29, all applications will be required to contain an email address for FCC correspondence. Applicants will receive an email direct from the FCC with a link to the official electronic copy of their license whenever a license is issued or changed. ARRL VEC suggests that those without access to email to use the email address of a family member or friend. Licensees will be able to log in to the ULS using their FRN and password to download the latest version of their license at any time. The FCC no longer provides paper license documents.

<http://www.arrl.org/news/first-time-exam-applicants-must-obtain-fcc-registration-number-before-taking-exam>

<https://www.fcc.gov/wireless/support/universal-licensing-system-uls-resources/getting-fcc-registration-number-frn>



Field Day is June 26-27, 2021

Plans are being made for Field Day. If you would like to operate with us in Murray we need to know now. Please contact me by e-mail, phone or in person ASAP.

The special COVID rule wavers are being kept in place this year with one addition, Class D & E (home) stations are limited to 150 watts.

<http://www.arrl.org/field-day>

Metal-Free Battery Degrades on Demand

(Tech Briefs 5/14/21) Lithium-ion batteries power so many of today's technologies, from our phones and earbuds to the next class of electric vehicles.

The batteries, however, contain cobalt, which must be mined. Only a very small percentage of Li-ion batteries are recycled too, increasing the demand for the metal and other strategic elements.

A team from Texas A&M developed a battery that's metal-free and replaces cobalt with organic elements: a salt electrolyte and polypeptide cathodes and anodes.

The recyclable architecture minimizes dependence on strategic metals and is an important step in sustainable design, according to the team. The all-polypeptide organic battery degrades on demand.

"By moving away from lithium and working with these polypeptides, which are components of proteins, it really takes us into this realm of not only avoiding the need for mining precious metals, but opening opportunities to power wearable or implantable electronic devices

(Continued on Page 3)

2021 PAID MEMBERSHIP

Paid Members in Bold

- AGØL Steve Loyd [E]
- AIØN **Chuck Engberg*** [E]
- KØEGG John 'Tim' Eggertsen [G]
- KØEO **Kary Cluck** [E]
- K3CRF **Dave Smith** [E]
- K5LBS **Jerry Gault** [E]
- KBØFSI **Pat McCollum** [T]
- KBØLF **Fred Eriksen** [E]
- KBØOGO **Roger Behrns*** [E]
- KBØZZT George Bellairs [T]
- KCØDTK Joan Bellairs [T]
- KCØHYD **John Titsworth** [G]
- KCØHYE **Shirley Titsworth** [T]
- KDØNMD **Dudley Allen** [G]
- KEØBXB **Kim Allen** [T]
- KEØXQ **Bill McCollum** [E]
- KGØKR **Beth Engberg*** [E]
- KIØPY **Kevin Faris** [E]
- N5SEZ **Ray McNally** [E]
- NØLZH **John Harrington** [T]
- WDØCFC Gary Bauersachs [E]
- WØDBW **Derek Winterstien** [G]
- WØJRN **Jim Nelson** [E]
- WØZY **Dave McLaughlin** [E]
- WØZYD **Debbie McLaughlin** [G]

**Charter Members #New Ham*

Note: Thanks to all who have paid their dues and many who have given additional donations. All donations are greatly appreciated. Please let me know of any corrections.

Meetings are 8am the last Saturday of most months at Mom's Café in Plattsmouth.

Tuesday night get-togethers at Plattsmouth Burger King at 7 PM



P.A.R.C. Officers

President

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Vice President

KCØHYD John Titsworth

Secretary

WØDBW Derek Winterstien

Treasurer

KIØPY Kevin Faris

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Repeaters:

- 443.45⁺ is located in downtown Omaha
- 443.225⁺ is located in Murray.
- 147.48 Simplex is also in Murray.

Web Site

www.kb0smx.com

Maintained by Derek (WØDBW)

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MINUTES of the MEETING

The April 24, 2021 meeting was called to order by President Roger Behrns at 8:20 am.

Those in attendance were Roger (KBØOGO), Kevin (KIØPY), Gary (WDØCFC), Chuck (AIØN), Dave (WØZY), and Jim (WØJRN).

The Minutes of the March meeting were approved on a motion by Dave and second by Chuck.

The treasurer reported since the last meeting receiving Dues and Donations of \$310 and expenses of \$323.20 for insurance which leaves \$315 in the repeater fund and \$733.95 in the general fund for a balance of \$1048.95. The report was approved on a motion by Dave and second by Jim.

Roger reported receiving approval from the Murray Village Board to hold Field Day in the Murray Park.

Jim reported on some potential ARES events and that volunteers are needed.

The meeting adjourned at 8:25 am on a motion by Chuck and second by Kevin.



PLATTSMOUTH ARC MEMBERSHIP REGISTRATION FORM					
Name		Call Sign		Class	
Address		City	State	Zip	
E-Mail			Phone #		
Spouse Name			Call Sign		Class
Membership Type <input type="checkbox"/> Primary (\$15) <input type="checkbox"/> Spouse (\$5) <input type="checkbox"/> Student (\$5) <input type="checkbox"/> New Ham	● Additional donations are gratefully accepted. ● New Hams are free during the year they receive their first license. ● Please give this form and dues to the club treasurer or any club officer.		Donation for: <input type="checkbox"/> Repeater fund <input type="checkbox"/> Insurance <input type="checkbox"/> Other _____ <input type="checkbox"/> General	Amount: <input type="checkbox"/> I prefer my donation to be anonymous.	
Any additional e-mail or cell phone #s?					

Meeting Calendar

8am, Sat April 24, 2021
8am, Sat May 29, 2021
at Mom's Café
Field Day June 26-27

and also to easily recycle the new batteries,” said Dr. Karen Wooley, distinguished professor in the Department of Chemistry and holder of the W.T. Doherty-Welch Chair in Chemistry in the College of Science.

The polypeptide batteries are degradable, potentially recyclable, non-toxic, and safer across the board, says Wooley who also worked with Dr. Jodie Lutkenhaus, Axalta Coating Systems Chair and professor in the Artie McFerrin Department of Chemical Engineering, on the project. (The team's research appeared in the May issue of *Nature*.)

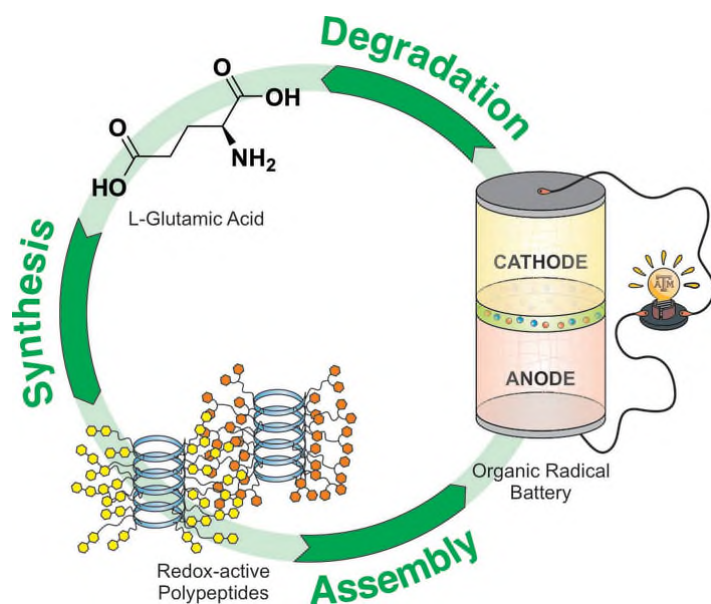
The polypeptides serve as both the anode and cathode materials. The redox-active polypeptides are active and stable during battery operation and subsequently degrade on demand in acidic conditions to generate amino acids, other building blocks, and degradation products.

The degradability of the organic battery, composed of redox-active amino-acid macromolecules, is one of the major breakthroughs of the research, according to Dr. Lutkenhaus.

“The big problem with lithium-ion batteries right now is that they're not recycled to the degree that we are going to need for the future electrified transportation economy,” said Lutkenhaus. “The rate of recycling lithium-ion batteries right now is in the single digits. There is valuable material in the lithium-ion battery, but it's very difficult and energy intensive to recover.”

In additional information accompanying this article they indicate that currently the non-metallic cells contain about 30% of the power of Lithium Ion and it fades with use to about 10% but improving materials are expected to improve that.

https://www.techbriefs.com/component/content/article/tb/stories/blog/39185?utm_source=TB_Main_News&utm_medium=email&utm_campaign=20210518&oly_enc_id=913018765801J1N



Wooden Satellite to Launch by Year's End

(ARRL 05/14/2021) The WISA Woodsat project, being sponsored by plywood supplier WISA in an unconventional PR initiative, is poised to place a wooden satellite into orbit by the end of the year. The idea is to test the suitability of treated wood as a low-cost and widely available material for space applications. The IARU posting for Woodsat indicates that several amateur radio experiments will be on board as well as photo downlinking, including selfies.

The wooden satellite is based on a basic, versatile CubeSat format, Kitsat, which is designed with educational use in mind. It retails for just \$1,500. Based in Finland, the Woodsat project began with students across the country contributing parts to a CubeSat launched by balloon. The satellite will be a 10-centimeter cube weighing 1 kilogram, covered on all sides by coated birch plywood from WISA plywood. Nine small solar cells will power the satellite, which will orbit at an altitude of 500 – 550 kilometers.

As the sponsor quipped, “WISA Woodsat will go where no wood has gone before. With a mission to gather data on the behavior and durability of plywood over an extended period in the harsh temperatures, vacuum and radiation of space in order to assess the use of wood materials in space structures.”

Once in orbit, Woodsat will be able to extend a selfie stick to capture photographs of the wooden box as it hurtles through space at 40,000 kilometers per hour (24,800 miles per hour). This will allow the mission leaders to monitor the impact of the environment on the plywood.

The satellite would downlink its telemetry and images from two cameras using amateur radio frequencies.

“The wooden satellite with a selfie stick will surely bring laughter and goodwill,” added mission manager Jari Mäkinen of Arctic Astronautics. “Essentially, this is a serious science and technology endeavor. In addition to testing plywood, the satellite will demonstrate accessible radio amateur satellite communication; host several secondary technology experiments; validate the Kitsat platform in orbit, and popularize space technology.”

<http://www.arrl.org/news/wooden-satellite-to-launch-by-year-s-end>

<https://eandt.theiet.org/content/articles/2021/04/selfie-stick-wielding-wooden-satellite-to-launch-by-end-of-2021>

Free Resource at your Public Library

If you qualify for a library card from your public library in Nebraska then you have an electronic library available free as well. Overdrive.com or the free app for your phone, iPad or tablet allows you to check out and read a wide variety of books, audio books and now magazines.

Check with your local library for an ID and password. The magazines were recently added and include a wide variety including CQ, several woodworking magazines and other hobbies of interest. About three years of magazines are available. There is a lot more there than romance novels and kids books.