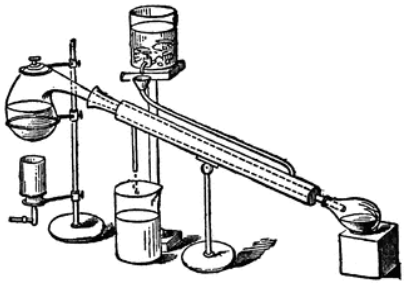
SOUTHWEST RETORT



SEVENTIETH YEAR **APRIL 2018**

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Chemists, Chemical Engineers
and Chemistry in this area

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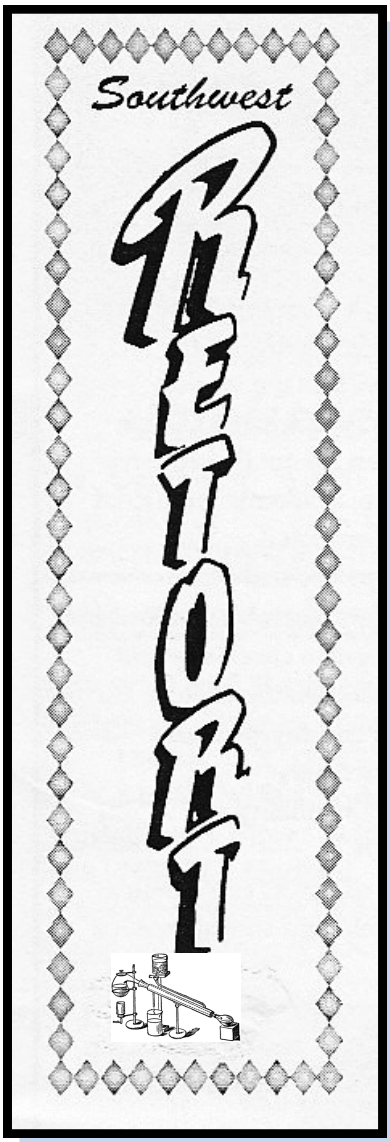

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EMPLOYMENT CLEARING HOUSE

Job applicants should send name, email, and phone, along with type of position and geographical area desired; employers may contact job applicants directly. If you have an opening, send your listing, including contact info for your company, to retort@acsdfw.org. Deadlines are the 7th of each month.

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FIFTY YEARS AGO IN THE SOUTHWEST RETORT

North Texas State Hosts First Ever ACS Meeting-in-Miniature.
April 26, 1968 will be the date of our first Meeting-in-Miniature in this area. The meeting will be held in Masters Hall at North Texas State University. NTSU faculty member Dr. Charles Skinner announced the initiation of the event. Presentations at the meeting will be given by undergraduate and graduate students from participating schools Austin College, Bishop College, East Texas State University, North Texas State University, Southern Methodist University, Texas Christian University, Texas Woman's University, University of Dallas, and the University of Texas at Arlington. The meeting is being sponsored by the Dallas-Ft. Worth Section of the ACS, the Chemistry Department at North Texas State University, and the Beta Eta Chapter of Alpha Chi Sigma. It is hoped this will become an annual event.

Professor Allen J. Bard of the University of Texas at Austin and Dr. Herbert Hyman of Argonne National Laboratory are the ACS tour speakers for April. Dr. Bard will speak on "Modern Aspects of Electro-Organic Chemistry," while Dr. Hyman will talk on either "Liquid Hydrogen Fluoride as a Solvent" or "The Chemistry of the Nobel Gases."

Dedication of the new Graduate Research Center at Texas Woman's University to Dr. Robert W. Higgins took place on March 18. Dr. Higgins, former chair of the TWU chemistry department, was a driving force in establishment of the Graduate Research Center. A plaque on this new building was dedicated in his honor by Dr. John A. Guinn, President of TWU. Dr. Higgins' wife, daughter, and son were present for the occasion. Dr. Higgins was unable to attend the occasion because of his serious illness. On March 19 TWU hosted the Dallas-Ft. Worth ACS Section and the Institute of Food Technologists and held an open house in the new Graduate Research Center.

At the Southwest Center for Advanced Studies (now UTD) in Richardson, Dr. Harold Werbin received a two year NSF grant to study the photochemistry of naturally occurring quinones. At the Mobil Field Research Laboratory in Dallas, Dr. Donald E. Woessner attended the Experimental NMR Conference held in Pittsburgh.

At Sam Houston State College, four members of the chemistry faculty have received state grants amounting to 1/3 of a full load for the Spring and ½ load for the summer. They are Drs. W. M. Harding, M. A. Dyke, James E. Johnson, and Carlton Guidry. At Texas Tech Dr. Henry J. Shine gave seminars on his research at Rice and Baylor. Two seminars were given at Texas Tech by Dr. Paul von R. Schleyer of Princeton.

Rice University President Dr. Kenneth S. Pitzer was made an honorary member of the The Chemists Club at a dinner on March 19 in New York City.

contributed by
E. Thomas Strom

And Another Thing...

Are We Doomed?

By Denise L. Merkle, PhD

Recently an interesting medical situation of the confused sort led to conversations with my colleagues - and the realization that absolutely everyone had direct knowledge of a distressing, avoidable medical experience. Some of these experiences were stuck in the proverbial snowball of errors. How does this happen?

I was sitting with Victim (aka patient) in a medical facility*. A person whom I had not met bustled in with the enthusiastic introduction, "I'm Person NP, the new Nurse Practitioner! I've heard so much about your care for Victim!" Person NP, having mistaken me for someone else, received the first X. Next, Person NP began nearly berating Victim because a certain test had not been performed since November of last year. Um. No. Actually, updated results were sent two weeks ago. Oops! They were in the wrong file. So Sorry. Second X. Third X, which, in an ideal world, would have opened the chute into the shark tank (and I don't mean the one where one's pitch and value proposition are marvelous and Mark Cuban makes all one's dreams come true) was the insistence that scheduling an appointment was required- Must, must, must happen. The Victim having been specifically told by the MD to wait some weeks before doing so, Person NP assisted in scheduling the unnecessary appointment for a time of maximum inconvenience to Victim. Splash. Person NP becomes one with the chum. But no. Person NP's inability to read the Victim's chart, communicate properly with other medical professionals, listen to what Victim was saying, or consider the effects of actions on Victim's life meant only that Person NP was free to torment some other poor trapped patient. Absolutely everything was thrown into disarray for Victim. Schedules, interactions, tests, discussions, conversations - everything had to be adjusted. Instead of focusing on care, all involved were forced to expend precious time and energy to unravel the havoc wrought by the woefully uninformed Person NP. And this bizarre incident is not unusual. Not.

Everyone who heard the story of Person NP's inexplicable interference has at some point been adversely affected by lack of communication among medical teams, or incomplete sharing of information between medical professionals and their patients. The results of the poor transfer of knowledge can be -and often are- catastrophic.

How do we, as highly educated, dedicated, data-focused scientists assist in remedying this dangerous situation? I do not know. But remedy it we -or someone- must. What are the origins of this massive medical confusion? How in the world did we get Here from There, wherever There was? What is missing from our technology, or our humanity, that leaves us with such painfully expensive convolution? Is it actually possible to Do No Harm by acting on incomplete data? How do we know when the data are incomplete.

Everyone is so very, very busy, but to what end? Can we figure out the actual origins of these communication-and-care failures? And if we can, are solutions possible? Are they? Or Are We Doomed?

*Not violating anyone's privacy. Victim is not in my immediate family

Coming in May

Interview with the ACS President-Elect

Dr. Bonnie Charpentier

By E. Thomas Strom

Remember, the Retort is published on issuu.com. One good thing about issuu.com is that you can subscribe to your publication; if you put in your email (right next to the Retort on the site), you will automatically get the Retort when we post it. (In order to subscribe, download, or print, you need to register with issuu.com; it's free and you can opt out of extraneous emails.)

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From the ACS Press Room

A brewer's tale of proteins and beer

Process Proteomics of Beer Reveals a Dynamic Proteome with Extensive Modifications

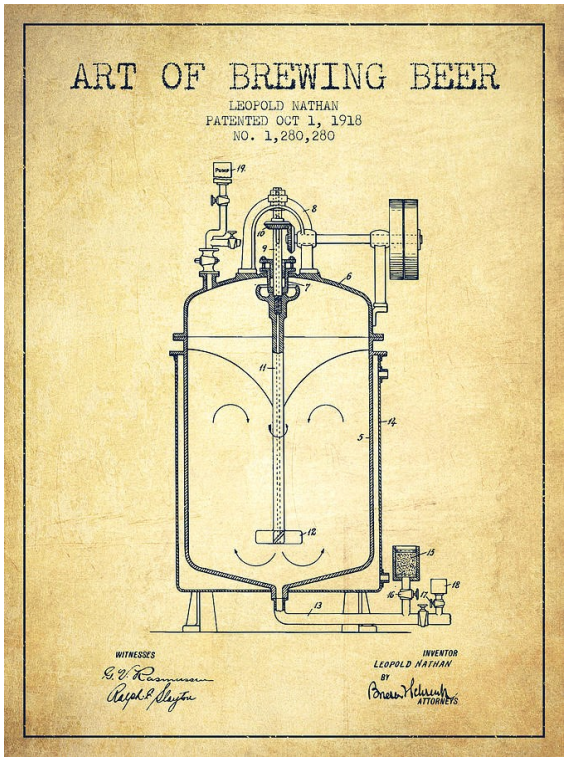
Journal of Proteome Research

The transformation of barley grains into beer is an old story, typically starring water, yeast and hops. Now, in a report in the ***Journal of Proteome Research***, scientists are highlighting another character in this tale: proteins. The results could someday lead to a better, tastier brew.

Many proteins in beer come from the barley or yeast used to make it, and these proteins influence a brew's properties, including its flavor and foaminess. The protein profile of a beer depends on how it was produced, a complex multistep process with a murky biochemical underpinning. So, Benjamin L. Schulz, Glen P. Fox, Claudia E. Vickers and colleagues wanted to assess the full protein profile of beer over the course of production, seeking molecular beer brewing insights.

The researchers' tool of choice for probing the beer-making process was mass spectrometry, which can identify proteins based on weight. They brewed a tiny mug's worth of beer, taking samples at three stages of production for analysis: sweet wort, hopped wort and bright beer. Mass spectrometry of the samples revealed over 200 unique proteins from barley and yeast, with large changes in their relative abundance and appearance at different production steps. The researchers say that future work will focus on how the identified proteins control the flavor, bubbles and quality of beer, and how protein content could be tweaked to produce a better pint.

The authors acknowledge funding from the University of Queensland Collaboration and Industry Engagement fund, the Wright Biomedical Career Development Fellowship and the Queensland Government Accelerate Fellowship



Drawing from 1918 patent

A COUNCILOR REPORTS

E. Thomas Strom

For the last several years one of your councilors has been publishing reports in The Retort following the national ACS meeting to inform members of the Dallas-Fort Worth ACS section, whom we represent, about the important issues and actions of the Council. Responsibility for the reports rotate among the group. This time it is again my turn. I title my report "A Councilor Reports," because I don't claim to speak for all four of your councilors. However, we all try to sit together, and I think we most often think and vote the same way.

Council duties start well in advance of the Wednesday morning Council meeting. Those of us on Council committees often have meetings on the day before the national meeting starts. On the first day of the meeting, which is a Sunday, there is always an open, noon meeting of the ACS Board of Directors. That meeting also includes a free lunch, which cuts down on our meeting expenses. For the spring meeting an important duty of the Council is to choose a slate of two presidential candidates from a group of four chosen by the ACS Elections and Nominations Committee. The four candidates are then normally present at a Town Hall held from 4:30-5:30 on Sunday afternoon. The Town Hall meeting was then followed by regional caucuses at 6 p.m. The ACS is divided into six regions, and Dallas-Fort Worth is part of Region 4. Our representative on the Board of Directors is Rigoberto Hernandez. Some significant issues covered in his slides include the fact that income from operations was $4.8 M (M means million) greater for 2017 than 2016, that dues for 2019 were proposed to rise from $171 to $175, and that the numbers of councilors on ACS committees would be allowed to be reduced. Dues in 2009 were $140. The dues have been rising about 2.3% each year since 2009, essentially in tandem with the cost of living. The potential reduction in absolute numbers of councilors on committees was interesting, especially as a related bylaw change was also up for action by the Council. I'll discuss that issue later when I describe Council action at its Wednesday meeting.

Almost the first action of Council at the Wednesday morning meeting was the selection of two candidates from the group of four. All four of the candidates give brief statements to the Council. Candidate Luis Echegoyen was out of town, so his presentation was via video. Besides Echegoyen from UTEP, the candidates were Harmon B. Abrahamson from the University of North Dakota, Thomas R. Gilbert from Northeastern University, and Mary Virginia Orna from the College of New Rochelle. Note that all four candidates are academicians. The ACS tries to alternate ACS presidents between academicians and industry/government chemists. All four candidates had significant amounts of service to ACS, and

all four gave excellent talks. Since the ACS President represents ACS to the general public, you do want an articulate candidate. The two candidates chosen were Echegoyen and Gilbert. Will these be the only two candidates on the ballot? Not necessarily. Petition candidates may appear. Diane Grob Schmidt, 2015 ACS President, and Donna J. Nelson, 2016 ACS President were both petition candidates.

Now to the issue discussed above. This necessitated a bylaw change. The previous bylaw stipulated that 2/3 of each Society committee needed to be councilors and the Chair and Vice-Chair also be councilors. Recently problems have shown up with the Budget and Finance Committee (B&F) and the Society Committee on Education (SOCED). You need experts on both committees, and what if the experts are not councilors. The motion was to change the bylaws to change the 2/3 number to a majority and remove the requirement that the Chair and Vice-Chair be councilors. This change seemed reasonable to the Council, so it was approved. However, the related proposed bylaw change needs some more explanation.

The committee members are appointed by the ACS President and the Chair of the ACS Board of Directors. Recommendations of committee members and Chairs and Vice-Chairs of the committees are made by the elected Committee on Committees (CONC). I think we can assume that the President and Board Chair will usually rubber stamp the CONC recommendations. This additional bylaw change was that the committee Chairs would be elected by the members of the particular committee. This would seem reasonable on the grounds that the committee members ought to be the ones most familiar with the strengths and weaknesses of a particular member. The counter argument would be that appointments through CONC would prevent the committee leadership from being insular. As one might expect, CONC was opposed to this change in bylaws. Also, there was no divisional support for the change. Some of the petitioners argued strongly from the floor that the change should be made, but the bylaw change failed.

The motion to raise the dues for 2019 to $175 passed. The meeting attendance was 16,585, a record for a New Orleans ACS meeting, Some people have told me that this meeting might be the second most attended ever, but I can't confirm that.

.

While there were other action items at the meeting, I have covered those that I consider the most significant. As always, it has been an honor to serve you as one of your councilors.

Nominations are invited for 2018 Wilfred T. Doherty and Werner Schulz awards

Nomination forms and additional information are available online at http://dfw.sites.acs.org/localsectionawards.htm. Nominations are due by May 15, 2018. Each nomination should contain completed nomination form, cover letter highlighting the nominee's accomplishments, and a copy of the CV. One seconding letter may accompany nominations. The nomination package should be sent by email as a single pdf file to Stephen Starnes (Stephen.Starnes@tamuc.edu). Nominations remain active for five years but should be updated annually.

The Doherty Award is given for excellence in chemical research or chemistry teaching, meritorious service to ACS, establishment of a new chemical industry, solution of pollution problems, and advances in curative or preventive chemotherapy. Nominees may come from industry, academia, government, or small business. The nominee should be a resident member in the area served by the DFW Section, and the work should have been done here. The award is $1500 and an engraved plaque. A photo of the Doherty Award winner will be displayed permanently in the Gallery of Doherty Award winners, Berkner Hall, UT-Dallas.

The Schulz Award is given to high school chemistry teachers, who, like the late Dr. Werner Schulz, bring that something extra to the teaching of chemistry. The nominee and/or nominator need not be ACS members. Nominees should show excellence in chemistry teaching as demonstrated by testimonials from students and fellow teachers, results in student competitions, and diligence in updating and expanding scientific/teaching credentials. A photo of the Schulz Award winner will be displayed for one year at the Perot Museum of Nature and Science in Dallas, and then displayed permanently in the Gallery of Schulz Award winners, Science Bldg., Tarleton State University. A traveling plaque stays at the winner's high school for the year of the award. Winners will normally receive their awards and give their lectures at a fall meeting of the section.

Remember, a continuous flow of nominations is needed to maintain the quality of awards.

From the ACS Press Room

Connecting hearing helper molecules to the ear bone

Bisphosphonate-Linked TrkB Agonist: Cochlea-Targeted Delivery of a Neurotrophic Agent as a Strategy for the Treatment of Hearing Loss

Bioconjugate Chemistry

Hearing loss is a common affliction associated with advancing age and exposure to very loud noises, affecting two-thirds of adults over age 70. But living with hearing loss may not be inevitable. Scientists report in the ACS journal ***Bioconjugate Chemistry*** a novel approach to the restoration of hearing that delivers stimulants of cell growth and connectivity directly to damaged ear cells.

Hearing loss is attributed to the degradation of specialized inner ear cells, including hair cells and spiral ganglion neurons, as well as the connections between these cells. These cells are located within the cochlea, the shell-shaped ear bone that orchestrates hearing. Loss of synapses between these cells because of loud noises or aging can lead to "hidden hearing loss," or difficulty hearing in a noisy environment. It may also lead to the development of tinnitus, or "ringing in the ears." Biological molecules called neurotrophins are involved in the development and proper wiring of hearing cells. This raises the possibility that delivering molecules, such as 7,8-dihydroxyflavone (DHF), that mimic neurotrophin activity, to the inner ear could bring the damaged cells back into auditory action. Delivery is an issue though, as therapeutic molecules tend to be quickly flushed out by inner ear fluids. So, David H. Jung, Charles E. McKenna and colleagues wanted to see whether tethering DHF to another molecule, one that sticks to bone, could anchor the therapeutic activity to the cochlea long enough to potentially restore hearing.

The researchers designed and synthesized a molecule combining DHF and bisphosphonate, which latches onto bone, then tested its neurotrophic activity. In cell cultures, the combo molecule bound bone mineral, while maintaining the ability to stimulate spiral ganglion neuron outgrowth. This new molecule also regenerated synapses in mouse inner ear tissue that had been damaged. Future work will test the potential of the molecule in animal models of hearing loss.

The authors acknowledge funding from the American Academy of Otolaryngology-Head and Neck Surgery Herbert Silverstein Otology and Neurotology Research Award, the American Otological Society Research Grant and by a grant from the National Institute on Deafness and other Communication Disorders.

Around the Area

UT-Arlington

Alex Bugarin has been awarded the President's Award for Excellence in Teaching for Untenured Faculty. **Kevin Schug** has been inducted into the UTA Academy of Distinguished Teachers.

Subhra Mandal has received an R15 grant from the National Institutes of Health. The grant is for $439,000 and three years to study "Histone Methylase MLL2 in Regulation of SR-Bl Expression and Plasma Cholesterol."

University of Arkansas

Joshua Sakon gave a talk, "Activation and binding mechanism of a clostridial collagen-binding segment" at the University of Arkansas Pine Bluff, February 22, 2018.

Jingyi Chen will make an oral presentation at the upcoming 233rd ECS Meeting in Seattle, Washington, May 13-17, 2018. "CuPt and CuPtRu Nanostructures for Ammonia Oxidation Reaction" authored by Manso, R.H.; Song, L.; Liang, Z.; Wang, J.X.; and Chen, J.

Colin Heyes attended the Gordon Conference on *Protein Transport across Cell Membranes* in Galveston, TX from March 11-16 and presented a poster, "Protein Targeting to the Chloroplast Thylakoid Membrane: Structure and Function of a Targeting Complex." Authors are Colin D. Heyes, T.K.S. Kumar, and Ralph L. Henry.

Several presentations were made at the 255th ACS National Meeting & Exposition in New Orleans, LA March 18- 22, 2018:

Colin Heyes**:** Interfacial Control of Colloidal Heteronanostructures to Control Single Particle Emission in Cd-based and Culn-based Chalcogenide Quantum Dots.

Matt McIntosh**:** The Oka Fragmentation of the Breslow Intermediate is a Radical Process.

Posters presented were:

FRED Based Assays to Study the Binding and Regulation of FGF to its Receptor (FGFR): Mamello Mohale, Ashley Howard, T.K.S. Kumar, and Colin Heyes.

Bioconjugation of CulnS2/ZnS Quantum Dots to FGF and Bioimaging their Interactions with FGFR: Colette Robinson, Mamello Mohale, Dustin Baucom, Anh Nguyen, Ravi Kumar Gundampati, T.K.S. Kumar, and Colin D. Heyes.

Structural Changes of Chloroplast Signal Recognition Particle Proteins Studied by Single Molecule FRET During Vectoral Protein Targeting: Dustin Baucom, Rory Henderson, Robyn Goforth, Alicia Kight, Priyanka Sharma, Feng Gao, Suresh Ku- mar, Ralph L. Henry, and Colin D. Heyes.

Synthetic Control over Structural and Optical Properties of CulnS2/ZnS Quantum Dots: Anh Nguyen and Colin D. Heyes.

Two-step Derivatization of Fluconazole via Radical Fragmentation of a Breslow-type Intermediate: Jacklyn Kubik, Charles Moon, Juliette Rivero, Jordan Avery, Cody Canote, Jessica Sonnentag, David McNabb, and Matt McIntosh.

Novel 5-coordinate and 6-coordinate low-valent molybdenum (VI)-dioxo complexes exhibiting deoxydehydration activity: Randy Tran, Stefan

Kilyanek. *This poster was selected for the SciMix program*.

Computational investigation of the mechanism of metal-oxo catalyzed deoxydehydration.: Kayla A. DeNi- ke, Stefan M. Kilanek.

The influence of ligand environment on the deoxydehydration of polyols by early-metal oxo-complexes: Stefan M. Kilyanek, Randy Tran.

The department was well represented at the 62nd Annual Meeting of the Biophysical Society February 17- 21, 2018 in San Francisco, California, with six abstract presentations:

Ionization and Dynamic Properties of Single and Multiple Histidine Residues on a Transmembrane Helical Backbone: Fahmida Afrose, Denise V. Greathouse, Roger E. Koeppe II.

Detection of Helix Fraying of a Transmembrane Peptide with Two Interfacial Arginine Residues: Sara Sustich, Fahmida Afrose, Denise Greathouse, Roger E. Koeppe II.

Analyzing the Effects of Placing Central Arginine Residues within a Highly Dynamic. Transmembrane Alpha-Helix: Matthew J. McKay, Denise V. Greathouse, Roger E. Koeppe II.

Influence of Saturation and Hydrophobic Length of Lipid Bilayers on Twin-Arginine Containing Helical Peptides: Karli A. Lipinski, Ashley N. Martfeld, Denise V. Greathouse, Roger E. Koeppe II.

Gramicidin Subunits that Cross Membranes and form Ion Channels: Matthew Brownd, Matthew J. McKay, Denise V. Greathouse, Olaf S. Andersen, Roger E. Koeppe II.

Dissecting Drug Physico-Chemical Profiles as They Relate to their Bilayer Modifying Potency: Radda Rusinova, Roger E. Koeppe II, Olaf S. Andersen.

Publications

Mathurin, L.E.; Benamara, M.; Tao, J.; Zhu, Y.; Chen, J. Tailoring the Surface Structures of CuPt and CuPtRu One-dimensional Nanostructures by Coupling Co-reduction with Galvanic Replacement, *Part. Part. Syst. Charact. 2018*, accepted.

Jingyi Chen: U.S. Patent Application No. 15/896,595 Based on U.S. Provisional Application No. 62/459,396 Filed February 154, 2018. Copper-Silica Core-Shell Nanoparticles and Methods, UAR 17-07, O/R:5012916.029US2.

Rajesh Thapa and Prof. Stefan Kilyanek: Patent Application on their new fluxional ligand systems for Pd catalyzed C-C cross-coupling reactions, unique catalysts with a variety of application across d8 platinum-group metal catalysts and designed to afford rapid changes in the second coordination sphere of the metal.

DFW Section: Save the dates!

51st ACS DFW Meeting in Miniature

Saturday, April 28, 2018

Southern Methodist University

Undergraduate and graduate oral sessions

Volunteer judges will be needed

Watch your email and the Retort for more details.

Contact Organizers Dr. Isaac Garcia-Bosch (igarciabosch@mail.smu.edu) or Dr. Alex Lippert (alippert@smu.du) for more information.

Presentation and Tour

US Patent and Trademark Office (USPTO) Regional Office

6 pm, Tuesday, May 22, 2018

USPTO - Texas Regional Office

Terminal Annex Federal Building

207 S. Houston St., Ste. 159

Dallas, Texas 75202

Watch your email and the Retort for more details.

From the ACS Press Room

Super sniffer: Dog's nose inspires new gas sensor materials

Mimicking a Dog's Nose: Scrolling Graphene Nanosheets

ACS Nano

It is well known that dogs have a better sense of smell than humans. For years, researchers have been trying to develop an artificial detector that is just as good as a canine's nose. Now, one group reports in ACS ***Nano*** that they were able to mimic a dog's sniffer with graphene-based nanoscrolls.

The inside of a dog's nose is lined with millions of tiny capillaries, which creates a super-sensitive sense of smell. Since the capillaries cover such a large surface area, they can detect odors at extremely low concentrations. Drawing inspiration from the capillary structure in the dog nose, scientists have been trying to mimic it to create a sensitive gas detector. Previous studies have had some success in using graphene-based nanoscrolls (GNS), which are nanosheets of graphene rolled up in continuous and uniform manner. These nanoscrolls have a large surface area, are stable at high temperatures, and are strong and durable. But they are also difficult to manufacture, consume a lot of energy and difficult to scale up. And past studies have used raw graphene or modified graphene that either left behind some unrolled structures, or shriveled up and aggregated, respectively. So Yao Wang, Lei Jiang, Guofu Zhou and colleagues wanted to modify the graphene with a polymer to make high-quality nanoscrolls.

The group prepared graphene-based nanoscrolls with the addition of poly(sodium-p-stryrenesulfonate) using the freeze-drying method to create uniform, unaggregated structures. Upon examination, the nanoscrolls had a wide, tubular shape, and almost all of the graphene was rolled up. The researchers then incorporated the nanoscrolls into a gas sensor, which was highly selective and sensitive. Lastly, the team notes that this method has the potential for large-scale production.

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From the ACS Press Room

Thermal blankets melt snow quickly

Thermally Absorptive Blankets for Highly Efficient Snowbank Melting

Langmuir

Removing snow piled high in parking lots and along roadsides could soon be a far less tedious task. In a study appearing in ACS' journal Langmuir, scientists report that they have tested sunlight-absorbing thermal blankets capable of melting snow three times faster than it would on its own. They say the blankets could slash snow-removal costs and reduce the risk of environmental contamination caused by soot and other products used to melt the white stuff.

Fresh snow reflects most of the sunlight shining on it, as well as much of the heat from those rays, back into the air. As a result, huge heaps of plowed snow can linger for weeks, even when the air is above freezing. Most cities in snow-prone regions either haul it to disposal sites or use gas-powered heaters to melt it. Both of these approaches are labor-intensive, time-consuming and costly. Depositing soot on fallen snow is an ancient, but effective way to increase sunlight absorption and speed up melting. However, soot, antifreeze and other commercial melting products can contaminate water and soil. Jonathan B. Boreyko and colleagues sought to find a more environmentally friendly way to melt snow using a new type of thin, conductive and thermally absorbent metal blanket.

The researchers created three types of these blankets made with an aluminum alloy. Two were coated with black enamel or black silicon-based spray paint that readily absorbed sunlight. The third blanket was bare aluminum, which reflected sunlight about as well as snow. In laboratory experiments, each of the blankets was draped over a pile of man-made snow stored in a refrigerated container. Then, the blanketed piles plus a pile of uncovered snow were exposed to a high-intensity lamp, which simulated sunlight. Snow under the bare aluminum blanket melted at about the same rate as uncovered snow. However, both of the blankets coated in black paint accelerated melting by about 300 percent, as measured by water runoff. The researchers conclude that these absorptive blankets could be used to quickly melt snowbanks in parking lots, driveways or roadsides without using heaters, soot or chemicals.

The authors acknowledge funding from the Department of Biomedical Engineering and Mechanics at Virginia Tech.

From the editor

Don't forget to get your nominations in for the 2018 Doherty and Schulz awards; the deadline is May 15.

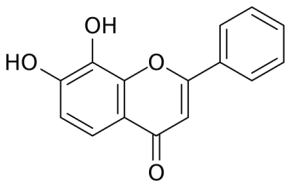
This year is the first for the Comet Chemistry Camp at UT Dallas. As quoted from the website **https://chemistrycamp.weebly.com/**,

The Comet Chemistry Camp is a new one-week summer camp designed to inspire and excite girls aged 13-16 (8th-9th grade) to explore their passion for science and chemistry. CC Camp is hosted by the Science/Mathematics Education Department at The University of Texas at Dallas.

Each day of camp features a theme that encompasses lessons, labs, demonstrations, and art activities. Every afternoon, the camp moves to a real university science lab where students will conduct hands-on investigations while maintaining their own laboratory notebook.

The site notes that the camp is aimed at girls but boys may apply also.

Hearing loss is caused by loss of specialized cells and the synapses between those cells in the cochlea, usually due to loud noises or aging . 7,8-dihydroxyflavone mimics the action of neurotropins, involved in the development and proper wiring of these hearing cells. Getting the molecule to the right place isn't hard but keeping it there is a problem, as anything in the ear tend to be quickly flushed out by inner ear fluids. Jung et al. tethered the hydroxyflavone to bisphosphonate, which is attracted to bone and holds the mimic molecule in place on the cochlea. Tested in cell cultures, the two-for-one molecule did bind to bone minerals while still stimulating neuronal growth; it will be interesting to see if this translates to use in the ear.



Best regards,
Connie

PS I have a feeling that a previous issue of the Retort featured Press Room articles on beer and dogs (specifically basset hounds), as does this issue. Since I choose the news shorts that catch my fancy, I must contemplate the hidden meanings behind these choices…