Chesapeake Chemist
Maryland Section American Chemical Society

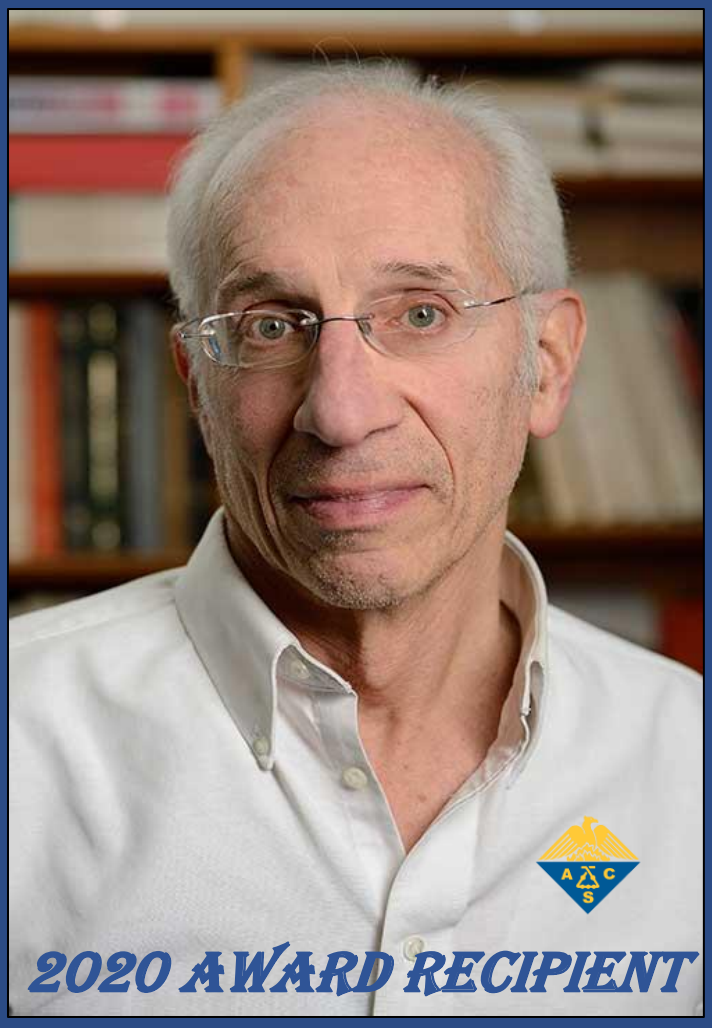
DECEMBER ISSUE

Local Section Newsletter
December 1, 2020

ACS Maryland Chemist of the Year Award

PROFESSOR DAVID YARKONY

DEPARTMENT OF CHEMISTRY
JOHNS HOPKINS UNIVERSITY
P 4



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ACS Local Section Maryland

Volume 77, Issue No. 8

Chesapeake Chemist
Maryland Section American Chemical Society

Maryland Local Section Newsletter

Editor in chief: Beatrice Salazar

Policy
Pumtiwitt McCarthy, Chair-2020
Sarah Zimmerman, Web Master
Jennifer Schmitt, Social Media Liaison

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Editorial

ACS MARYLAND WISHES YOU A MERRY CHEMISTRY

Our end of the year award is the Maryland Chemist of the Year Award. We are proud to present the 2020 recipient, Professor David Yarkony, Chair of the Chemistry Department at Johns Hopkins University (p 4). All are invited to attend Dr. Yarkony's award lecture on December 9, 2020 at 7:00 P.M. Information to access the virtual lecture is on p 5. Dr. Angela Sherman, Notre Dame of Maryland University, gives an overview of the history and meaning of this special award (p 7).

We invite you to become familiar with the History Corner page (p 8). It provides information on all Maryland Chemist of the Year Awards. We hope you will learn about the work of these extraordinary scientists while triggering your thoughts on potential future awardees. We need the collaboration of ACS Maryland members to nominate future candidates to celebrate the achievements of the Chemists in Maryland.

This issue features "The Chemistry of AGEs and its Importance" by Dr. Glenda Bilder. You will learn about AGEs relevance to aging and age-related pathologies (p 10-11).

We know chemistry is everywhere. Naturally, it is also present at Christmas time: poinsettias, Christmas lights, ginger-bread cookies, Christmas tree silver balls, etc., offer an opportunity to discuss chemistry with family, friends and colleagues. We share some of the chemistry involved in Christmas items in this December issue (p 14).

This year we introduced new sections in the newsletter where we hope you will share your thoughts and or experiences. The BOOKS section includes a description of five-six books that have influenced you. The Jobs Section for employers to advertise job openings. Also, the Chemistry Literature Spotlight on a recent article that called your attention and the Memory of People's Pandemic Experiences. All these sections can use your contributions; they enrich our experience and are highly appreciated.

Happy Holidays to all!

Beatrice Salazar
Editor-in-Chief, ACS Maryland Section

Chesapeake Chemist
Maryland Section American Chemical Society

ACS Local Section
Maryland

CHAIR'S MESSAGE

Pumtiwitt McCarthy, Ph.D.
Associate Professor

Chair, ACS Maryland Section
acsmaryland.org

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Dear all ,

I hope everyone had a safe and healthy Thanksgiving holiday! Thank you to those who participate in the recent Maryland local section elections. I welcome all our newly elected officers into their new roles. All terms will begin on January 1st of next year. This month we celebrate the Maryland Chemist of the Year, Professor David Yarkony, from Johns Hopkins University. We look forward to you joining us on December 9th via Zoom. Please read on in this newsletter for more details about this event.

This month marks the end of my year-long term as chair. It has been a pleasure to serve you during this highly unprecedented year. Our lives have been permanently disrupted but I am hopeful for a new year with new therapeutic developments to help fight the coronavirus. Although we could not meet in our typical ways for much of the year, I am very grateful for your participation in any form during all of our events. My colleague, Eric Cotton, will be chair in 2021 and I am looking forward to what lies next in store for our section.

In closing, I'd like to thank my fellow members of the Maryland local section for their support throughout this year. It has been great to serve with you. I also would like to commend Beatrice Salazar for her excellent work in making the newsletter vibrant and more engaging for the section.

I wish everyone a safe and blessed holiday season.

Pumtiwitt McCarthy

Professor David. R. Yarcony's [Biography from JHU]

DAVID R. YARKONY

The D. Mead Johnson Professor of Chemistry.
A world leader in the theoretical study of electronically nonadiabatic processes–those in which the Born-Oppenheimer approximation breaks down.

The Born-Oppenheimer approximation is at the heart of the description of most chemical processes. Light harvesting, vision, and essential upper-atmospheric processes depend on electronically nonadiabatic steps. While this has been known for decades, in the last ten years our way of thinking about electronically nonadiabatic processes has begun to change dramatically–the consequence of rethinking the role of conical intersections in these processes.
Dr. Yarkony's research has helped lead this revolution, developing the tools for studying conical intersections that define the state of the art in this area. Joining Hopkins in 1977, Dr. Yarkony is a fellow of the American Physical Society and serves on the advisory boards of World Scientific Publishing,
Theoretical Chemistry Accounts, and Theoretical and Computational Chemistry.

David Yarkony <yarkony@jhu.edu>

AWARD LECTURE ABSTRACT

Conical Intersections Can Ruin a Perfectly Good Approximation- the Born Oppenheimer Approximation

David R. Yarkony, Department of Chemistry, Johns Hopkins University

Once thought of as an arcane theoretical concept, over the last 30 years conical intersections have become known be ubiquitous, efficient funnels for radiationless decay of excited electronic states. But what about chemical processes that take place on the ground or a single isolated, electronic state. Surely if the conical intersection is at high energy (energetically inaccessible) the single state Born-Oppenheimer(BO) approximation should hold.
In this talk we will show using two representative photodissociation processes that, that simple energetic imperative is simplistic. We consider

$$C_6H_5OH(S_0)+hv \rightarrow C_6H_5OH(S_1) \rightarrow C_6H_5O(1,2^2A)+H$$

which represents photodissociation on an excited but at the energies employed isolated electronic state , S_1 and

$$CH_2OH(1^2A)+hv \rightarrow CH_2OH(1^2A, v_{OH} = 4) \rightarrow CH_2O(1^2A, J)+H$$

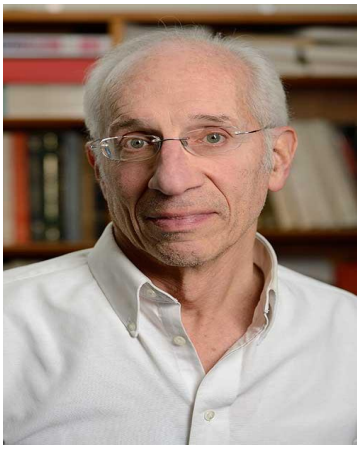
where *J* denotes the rotational quantum number of the formaldehyde formed by the high overtone pumped photodissociation.

We will explain how in each case the standard BO approximation fails as a consequence of *energetically inaccessible* conical intersections. We will explain why in the case of phenol the barrier inferred from experiment must differ appreciably from that computed using standard electronic structure methods.

Lecture details on page 5. Award's historical details on pages 7 and 8

Chesapeake Chemist
Maryland Section American Chemical Society

PROFESSOR DAVID YARKONY



THE 2020 MARYLAND CHEMIST OF THE YEAR AWARD

THE AWARDEE LECTURE

Born–Oppenheimer approximation

$$\Psi_{total} = \Psi_{electronic} \times \Psi_{nuclear}$$

- Computation of the energy and wave function of a molecule
- Born–Oppenheimer approximation allows the wave function of a molecule to be broken into its electronic and nuclear motions
- Ψ_{total} = product function

ACS Maryland is inviting you to a scheduled Zoom meeting.

Topic:

ACS MD Chemist of the Year Award

When: Dec 9, 2020

7:00 PM Eastern Time (US and Canada)

Link information for the Zoom event
RSVP to Angela Sherman
ASherman@ndm.edu

Join Zoom Meeting
https://american-chemical-society.zoom.com/j/86144584779?pwd=Y3lUUjJgek9pSitwYndiWjU3OWVDQT09

Meeting ID: 861 4458 4779
Password: 019755

Please join us with video and audio off, ask your questions or send comments through the chat area. Thank you.

Chesapeake Chemist
Maryland Section American Chemical Society

TO ALL ACS MARYLAND LOCAL SECTION MEMBERS

FROM ALL NEW ELECTED OFFICERS

THANK YOU FOR YOUR VOTE, WE WILL MAKE THE 2021 YEAR, A RENEWAL YEAR.

WE WILL CONTINUE SERVING THE CHEMISTRY COMMUNITY WITH INFORMATION ON OUR PROGRAMAS

New Officers

Chair, Eric Cotton, 2021

Vicechair, Sara Zimmerman will be Chair in 2022

Chair Elect, Kelly Elkins, will be Chair in 2023

Secretary, Louise Hellwig, 2021

Treasurer, Lee Lefkowitz, 2021

Councilors: Jan Kolakowski, Beatrice Salazar and Stephanie Watson, 2021 (3 Yr Term)

Alternate Councilors: Rob Clapper, Michele Foss and Alexander Samokhvalov, 2021 (3 Yr Term)

Member at Large: Angela Sherman, Fasil Abebe, Rose A. Pesce-Rodríguez, Narayan, Therese Ku, 2021

Elections took place during the months of November 2020. To contact all Officers, see p 14

A goodbye note to our 2020 Chair, Pumtiwitt McCarthy

Thank you and congratulations on a job well done during this pandemic year!
You delegated responsibilities to other members, created opportunities for a more united team,
collaborated with the virtual local and National Chemistry Olympiad,
led virtual meetings with members of the ACS Maryland local section's executive committee,
and provided opportunities for two virtual award lectures.

The members of the Maryland Local Section of the American Chemical Society wish you and your family happy and safe holidays!

Chesapeake Chemist
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ACS Local Section Maryland

2020 Maryland Chemist of the Year Award

Award Committee Chair, Dr. A. Sherman

The Maryland Chemist Award was established in 1962.

It recognizes and honors, each year, a member of the Maryland Section for outstanding achievement in the fields of chemistry.

Professor Angela Sherman, Notre Dame of Maryland University

The achievement, as originally stated, may be in pure or applied chemistry, chemical engineering, or chemical education.

As stated in the Maryland Section's Bylaw VIII: "Recipients of the Maryland Chemist Award must have been members of the section for a minimum of five years and have made outstanding contributions to chemistry as defined in the Constitution of the Society (chemistry is defined in broad terms). The work on which the award is based should have been performed in Maryland."

Dr. Yarkony was selected for the award based on a review of the materials submitted by Dr. Kit Bowen, the faculty colleague who nominated him. Dr. Yarkony has made tremendous contributions in the area of non-adiabatic chemistry. Dr. Bowen noted in his nomination letter that Dr. Yarkony "has redefined the state of the art and put modern photochemistry on a sound theoretical footing".

"has redefined the state of the art and put modern photochemistry on a sound theoretical footing"

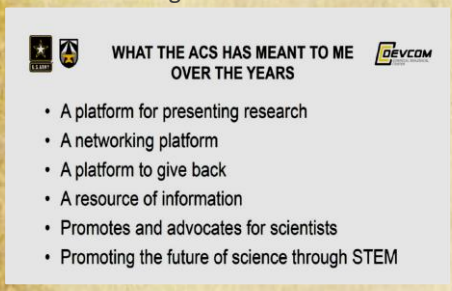
History Corner…

Remembering Maryland Chemist of the Year Awardees

2020 David Yarcony, JHU

2019 Andrew Coop, University Maryland School of Pharmacy

2018 Jared DeCoste, US Army Research Development and Engineering Command, Edgewood Chemical Biological Center



2017 Thomas Lectka, Johns Hopkins University

2016 Katherine Seley-Radtke, University of Maryland, Baltimore County

2015 Jason Dworkin, National Aeronautics and Space Administration

2014 Angela Wilkes, University of Maryland School of Pharmacy

2013 Paul Mahaffy, National Aeronautics and Space Administration

i2012 Shirish Shah (Service Award for his contribution to the MD ACS Section)

2011 Kenneth Karlin, Johns Hopkins University

2010 Gerald M. Rosen, University of Maryland

2004 Michael Summers, University of Maryland Baltimore County

2001 Raymond A. Mackay, Johns Hopkins University

2000 Haleem J. Issaq
1999 Marc D. Donohue
1998 Joel F. Liebman
1997 WuCheng Cheng
1996 Shekar Munavalli
1995 Richard H. Smith, Jr.
1994 Yale H. Caplan
1993 Ernest F. Silversmith
1992 Craig A. Townsend

1991 Cecil H. Robinson
1990 Alex Nickon
1989 Catherine Clarke Fenselau
1988 Edward J. Poziomek
1987 Gary H. Posner
1986 David F. Roswell
1985 John Lambooy
1984 Nicolas Zenker
1983 Shih-Yi Wang

1982 Joseph L. Katz
1981 Paul O. P. Ts'o
1980 M. Gali Sanchez
1979 Emil H. White
1978 Gunther L. Eichhorn
1977 Henry C. Freimuth
1976 Richard L. Hall
1975 Benjamin Witten

Things we did in the past

In the past, the Maryland Chemist of the Year event included a dinner, a seminar presentation by the award recipient, and the award presentation.

Things we will do in the future

No current plans to change the format of the event. Due to the Pandemic we will have a virtual Award lecture this year.

The Coordinator's involvement the with the award

Dr. A. Sherman has chaired the MD Chemist of the Year Committee since 2007.

She also coordinates all details of the event. She may have an assistant or perform all the work on her own. She contacts the Award Recipient and presents the award.

What is expected of the Award Recipient in relation to ACS Maryland

There are no expectations of the winner relative to the MD ACS.

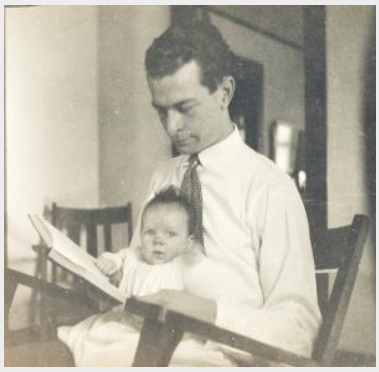
Short Biography

Dr. Angela Sherman is a professor in the Chemistry Department at Notre Dame of Maryland University. She obtained her Ph.D. from Purdue University and began her professional career working in the chemical industry prior to accepting a faculty position.

Photo, Dr. A. Sherman, ACS Volunteer of the Year Award 2018

Chesapeake Chemist
Maryland Section American Chemical Society

BOOKS…



Linus Pauling

I am a Chemist…
This is a wonderful section to provide insightful information to your students colleagues and friend about …

the books that influenced your career

send the title of 5 - 6 books, authors, and a short description of the book and why they influenced you, what you love about them and any anecdote you want to add. In addition, include your information, place of work, contact information and a short biographical reference so all readers could meet you.

Contact: Beatrice Salazar, Chesapeake Chemist Editor-in Chief

CHEMISTRY LITERATURE SPOTLIGHT

Welcome to the section created for chemists to discuss chemistry

Another interesting section for you to communicate with other scientists. Let them know of recent articles of interest to you, discuss them in this section. Look at three recent discussions:

- First discussion - from Science, **Cryo-EM structure of the 2019-nCoV spike in the prefusion confirmation.**
  https://science.sciencemag.org/content/sci/early/2020/02/19/science.abb2507.full.pdf
  Discussed by Dr. C. Rojas "**What id the science behind COVID-19?"** see
  Chesapeake Chemist March/April 2020 Vol.77 Issue No.2 p19

- Second discussion - from Chemical reviews.
  Introduction: Reactivity of Nitrogen from the Ground to the Atmosphere
  https://pubs.acs.org/doi/pdf/10.1021/acs.chemrev.0c00361
  Discussed by Dr. C. Rojas "Nitrogen Fixation…"

- Third discussion - from article by ACS Maryland Colleague. **STEM Activities on a Budget**
  Discussed by Beatrice Salazar: for teachers and adults with interest in the chemistry, composition, and history of adhesives. https://apps.dtic.mil/sti/pdfs/AD1107396.pdf

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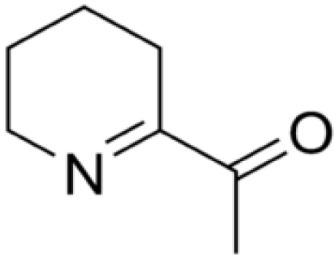
The Chemistry of AGEs and its Importance



6-Acetyl-2,3,4,5-tetrahydropyridine

Dr. Glenda Bilder

A - *advanced*

G - *glycation*

Es - *end products*

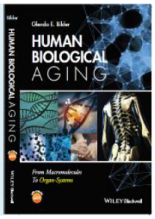
AGEs, the acronym for *advanced glycation end products* are heterogeneous chemical entities of utmost importance in aging and age-related pathologies. More than 100 years ago, the French physician/chemist, Louis Maillard discovered the non enzymatic reaction (basically a glycation) between reducing sugars and protein amines that generates final products of dark polymers (melanoidins) endowed with properties of desirable aroma and taste. AGEs as with melanoidins are one of the many final products of this reaction, known as the Maillard reaction. This reaction, popularly termed the "browning" reaction, occurs in all foods subjected to high temperatures e.g. toast, baked goods, processed foods, and fried, broiled and grilled meats. The Maillard reaction also works at physiological temperatures but over longer periods of time and results in endogenous accumulation of AGEs that contributes to a decline in organ function and sets the stage for major diseases including Type 2 Diabetes (T2D) and cardiovascular, renal and neurodegenerative diseases.

As described by Maillard in 1912, this reaction is the fixation of a nitrogen with an aldehyde carbon of a sugar generating numerous reversible and nonreversible products. Although considered an incredibly complex reaction, highlights of this reaction are as follows (check Vistroli et al., (2013) for details): reducing sugars, generally glucose, fructose and fructose metabolites e.g. gluceraldehyde-3-phosphate, condense with an epsilon-amino group of lysine (but any amine will do, if available) resulting in an unstable N-substituted glycosilamine, which rearranges to relatively more stable but still very reactive Amadori products. Depending on pH, Amadori products enolize via dicarbonyls to furfural derivative (low pH) or furanoses and pyranones (high pH), both contributing to the flavorful aromatic products of "browning". Dicarbonyls such as glyoxal, methylgloxyal, and glucosone analogues are highly reactive and form the multitude of AGEs. For example, the reaction of glyoxal with arginine forms N7-(carboxymethyl) arginine and with lysine forms Nε-(carboxylmethyl)lysine, the most studied of the AGEs. Methylglycol preferentially reacts with arginine forming three variations of carboxyethylarginine in equilibrium but often taking on an additional methylglycol. Glycosone, specifically 3-deoxyglucosone, considered one of the most reactive dicarbonyls, readily combines with proteins to form diverse AGEs. Reaction of dicarbonyls with two amino acids yields imidazol cross linked adducts.

The body's internal pool of AGEs is derived from a) oral intake of exogenous AGEs (10-30% absorption) and b) endogenous AGE production driven by persistent elevation of blood glucose (dietary carbohydrates, stress, lack of exercise) exacerbated by consumption of fructose (sweetened beverages). The AGE pool is moderated by several cellular detoxification mechanisms e.g. lysosomal recycling and the ubiquitous/proteosome degradation system. As these pathways become overwhelmed, AGE ligands bind to RAGE receptors, characterized as multi-ligand, pattern recognition receptors of the innate immune system found on most cells. RAGE activation initiates an inflammatory response, the mediators (cytokines) of which induce chronic tissue damage that drives pathologies of atherosclerosis, T2D, uremia and neurodegenerative diseases. A second harmful effect of AGEs occurs with cross linking of proteins. AGE-dependent cross linkage is abundant in collagen, a long lived protein found in most tissues. Cross linkage alters structure, hinders function and results in tissue weakness and perturbations of vital matrix activities in the cardiopulmonary, renal, and skin systems. Direct consequences of such changes are exercise intolerance, systolic hypertension, eventual heart and kidney failure and wrinkles and sags. (See Nowotny et al., (2018); Gill et al., (2019) for additional information).

Clinical trial results have validated ways to reduce AGE accumulation in the body. These include consumption of a diet low in AGEs, such as the Mediterranean diet, a diet of fruits, vegetables, legumes, grains, nuts and fish, and adherence to cooking practices that favor poaching and steaming generally at low temperatures for short periods in place of oven-frying, deep frying, broiling, roasting and boiling.

Dr. G. Bilder teaches the Biology of Aging course at Gwynedd Mercy University, Gwynedd Valley, PA and writes a blog, https://longevitybuilder.com



gebilder@gmail.com

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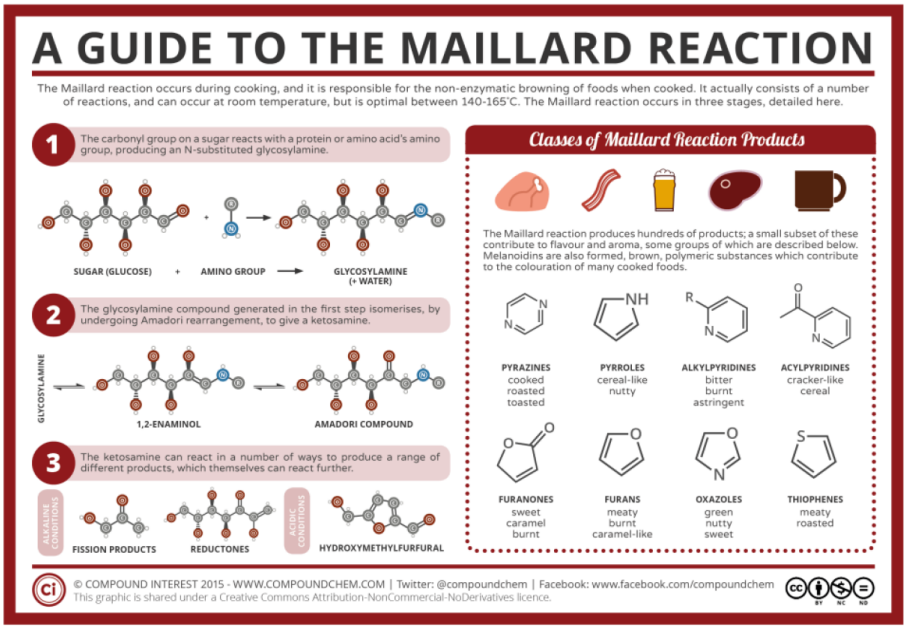
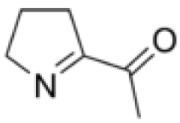
1. Vistroli V, DeMaddis D, Cipak A et al. Advanced glycoxidation and lipoxidation end products (AGEs and ALEs): an overview of their mechanisms of formation. Free Radical Research 47:sup1, 3-27, 2013
2. Gill V, Kumar V, Singh K et al. Advanced Glycation End Products (AGEs) May Be a Striking Link Between Modern Diet and Health. Biomolecules 9: 888, 2019
3. Nowotny K, Schroter D, Schreiner M, Grune T. Dietary advanced glycation end products and their relevance for human health. Ageing Research Reviews 47: 55–66, 2018.



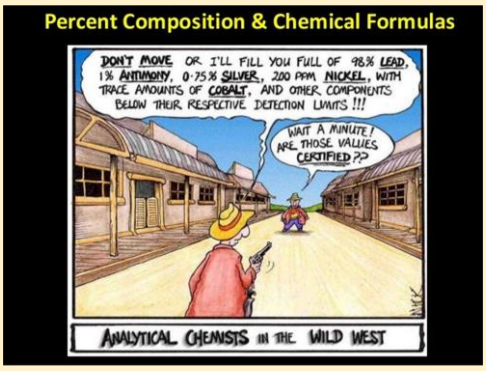
6-Acetyl-2,3,4,5-tetrahydropyridine, is an aroma compound and flavor that gives baked goods such as white bread, popcorn and tortillas their typical smell, together with its structural homolog 2-acetyl-1-pyrroline.



They are usually formed by Maillard reactions during heating of food. Both compounds have odor thresholds below 0.06 ng/l.

Picture link

Laugh a Little…



- A photon checks into a hotel and is asked if he needs any help with his luggage. He responded, "no, I'm travelling light."
- What is the formula for seawater? Ans. CH_2O
- How did chemist survive famine? "by subsisting on titrations"
- Do you want to hear a joke about nitric oxide? "NO"
- What happened to the man who was stopped for having sodium chloride and a nine-volt in his car? He was booked with "a salt and battery"

[* Source]

ACS Local Section Maryland

REPORT

The 2021 Maryland Section Officers Duties and Responsibilities can be seen in previous Chesapeake Chemist Issues October and November 2020 https://acsmaryland.org

4th Executive Committee Meeting

Minutes of Executive Meeting of Maryland Section of the American Chemical Society
Virtual Meeting on Zoom, Chair Pumtiwitt McCarthy, presiding
November 19, 2020 6:04 pm

Present: Eric Cotton, Merle Eiss, Kelly Elkins, Louise Hellwig, Jan Kolakowski, Lee Lefkowitz, Pumtiwitt McCarthy, Rose Pesce-Rodriguez, Jennifer Schmitt, Angela Sherman, Stephanie Watson, Sarah Zimmerman
Pumtiwitt called the meeting to order. The minutes of the previous meeting of Sept. 22, 2020 were approved.

Jan reported that our Fidelity Contra Fund and Nicholas fund are doing well.

Angela reported on the ACS Maryland checking account and Money Market account. (Eric reported that he would be submitting a request for the cost of running our recent election.) Since we got funds from the 2019 MARM, Angela is requesting that we submit ideas for how to use some of this money to help Section members, for example the students. Angela requests that people send her their ideas in January so she can make an organized report of those suggestions at our February meeting.

Eric reported the results of our recent election using the application Election Runner. We spent two years ago using Vote Now. Last year, we used a free app but there were problems. This year the ballots were e-mailed out to 1643 members. 50-70 were bad e-mails and bounced back. Thirteen percent of the members voted.

There was some discussion of how many members we send out e-mails to. Sarah says she uses the address list from the national ACS when she does Constant Contact.

The Maryland Chemist of the Year will be awarded to Dr. David Yarkony from JHU during the virtual award lecture, Wed. Dec. 9th. Angela asked if we could use the Webinar format. Jen offered to let us use the Younger Chemists Committee account she has access to.

Louise reported that offering Student Travel Grants to the spring National ACS meeting is a moot point since the meeting is virtual. Students only need to pay small registration fee. Kelly suggested to allow students to apply for Registration Reimbursement. The decision was made and approved.

Sara Narayan had nominated Rose for the Helen Free Award for Public Outreach.

Merle reported the difficulty in mailing out 23 plaques to 50-60 Year Members this last spring.

Louise will be sending the Section election results to the national ACS by Dec. 1.

The group thanked Pumtiwitt for her leadership as Chair in 2020. Starting January 1st, Eric will be Chair.

The meeting was adjourned at 6:50 p.m. Respectfully submitted by Louise Hellwig, Secretary.
Edited by Beatrice Salazar, the original will be public after it is approved in the next Executive Meeting, 2021.
Previous approved minutes are available at https://ascmaryland.org

Chesapeake Chemist Maryland Section American Chemical Society

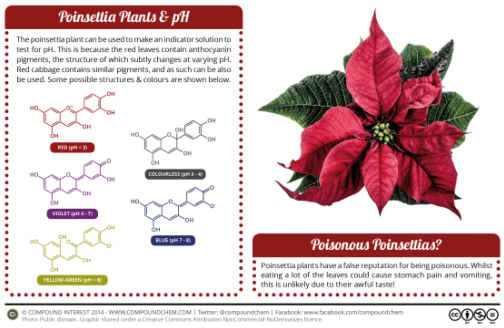
Merry Chemistry

By Beatrice Salazar

History Poinsettias in the U.S.

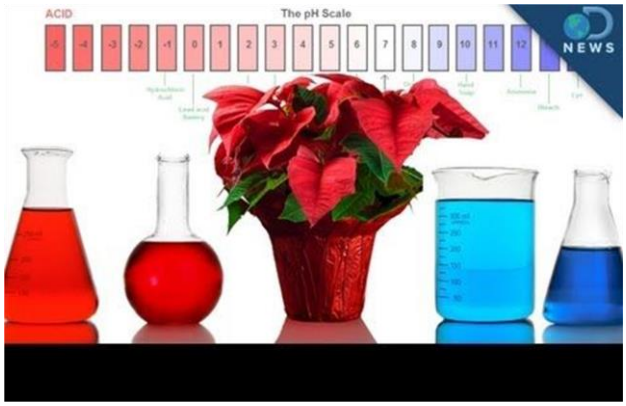
Joel Roberts Poinsett, botanists, and the nation's first ambassador to Mexico, introduced poinsettias to the United States around 1827. He planted these cuetlaxochitl plants, in the state of Taxco.

THE CHEMISTRY OF POINSETTIA PLANTS



According to the USDA Floriculture Statistics report (2013), poinsettias accounted for about one-quarter (23%) of sales of all flowering potted plants. In economic terms, that is, $144 million out of a total of $618 million in sales of all flowering plants. Poinsettias remain the highest selling potted flowering plants.

Red leaves of the poinsettia plant can be used to make a pH indicator



The red coloration of the leaves is caused by pigments called anthocyanins. These leaves are also pH sensitive, meaning that variations in pH can lead to subtle changes in their structure, and in turn influence the color that they impart.

At a pH of 3 or lower, the anthocyanin is orange or red, and exists as a cation. They then tend to appear colorless just below neutral pH, as the structure changes due to hydration and proton transfer reactions, whereas at higher pH deprotonation and ring-opening reactions lead to the formation of molecules that give a green, blue or purple coloration.
An indicator solution of poinsettia could be prepared with household products or in a chemistry lab.

As the plant grew in popularity, it was eventually named after Poinsett, who had a long and honored career as a congressman and a founder of the Smithsonian Institution. Aztec people used the plant to produce red dye and medicine as an antipyretic.[10] In the language of the Aztecs, Nahuatl the plant is called *Cuetlaxochitl, which means* "leathery Petals," flower that grows in residues or soil"[10] Today it is known in Mexico and Guatemala as "*flor de Nochebuena*," meaning Christmas Eve flower.[10] In Spain it is *Flor de Pascua or* Easter flower.[10] In Chile and Peru, the plant became known as Crown of the Andes.[10]

The association of the plant with Christmas began in the 16th-century in Mexico, where legend tells of a girl, called María, who was too poor to provide a gift for the celebration of Jesus' birthday and was inspired by an angel to gather weeds from the roadside and place them in front of the church altar.[17] Crimson blossoms sprouted from the weeds and became poinsettias.[18] From the 17th century, Franciscan friars in Mexico included the plants in their Christmas celebrations.[19] The star-shaped leaf pattern is said to symbolize the Star of Bethlehem, and the red color represents the blood sacrifice of Jesus's crucifixion.[20]

The poinsettia (Euphorbia pulcherrima) grows in U.S. Department of Agriculture plant, in hardiness zones 9 through 11. Poinsettia flowers are the tiny yellow blossoms in the center of its large, colorful bracts. As a member of the Euphorbiaceae plant family, poinsettia's cousin is the rubber tree (Hevea brasiliensis), from which latex is harvested. Like the rubber tree, poinsettia also has latex sap.

Latex Sap

The milky white sap found in poinsettias contains chemicals called diterpenoid euphorbol esters and saponin-like detergents. While poinsettias are commonly "hyped" as poisonous plants, they rarely are, and the poisoning is greatly exaggerated. If you have a sensitivity or allergic reaction to latex, poinsettia sap may be problematic for you. Itchy skin, rashes and eye irritation may result in dermatitis from contact with the sap (Chester, UPENN).

John Roberts Poinsett (1779-1851)
Library of Congress

Laboratory experiments with
Poinsettia and gingerbread
ACS Holiday Chemistry
Christmas chemistry
Poinsettia-sci-direct
Poinsettia-pages-all-about

Ref.1, Ref.2, [10], [17], [18], [19], [20] Ref.3

Events contact

The U.S. National Chemistry Olympiad USNCO MARYLAND URL: http://www.beatricesalazarusncocoordinator.webs.com	**Jan - April**
Student Travel Awards https://acsmaryland.org/travel-awards/ Email: Louise Hellwig <Louise.Hellwig@morgan.edu>	**Jan – March**
Student Award https://acsmaryland.org/student-awards/ Email: George Farrant, gfarrant@yahoo.com **Chemists Celebrate Earth Day**	**April**
Senior Awards Email: Merle Eiss, meiss32@aol.com Email: Linda Gonzalez <linda_gonzalez@mccormick.com	**May**
National Chemistry Week Events http://www.beatricesalazarusncocoordinator.webs.com Beer Tours: Louise Hellwig <Louise.Hellwig@morgan.edu>& Michele Foss <foss.michele@gmail.com	**May to Sept.**
Braude Award https://acsmaryland.org/braude-award/ Email: Louise Hellwig <Louise.Hellwig@morgan.edu>	**Oct.**
The Remsen Award https://acsmaryland.org/remsen-award/ Email: Dana Ferraris (dferraris@mcdaniel.edu) <dferraris@mcdaniel.edu>	**Nov.**
The Maryland Chemist of the Year Award https://acsmaryland.org/maryland-chemist-of-the-year/ Email: Angela Sherman, asherman@ndm.edu and Jennifer Schmitt, jschmitt1531@gmail.com	**Dec.**

Chesapeake Chemist Maryland Section American Chemical Society

ACS Local Section Maryland

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..... Pumtiwitt McCarthy, Chair-2020, pumtiwitt.mccarthy@morgan.edu
..... Beatrice Salazar, Chair-2018, beatricesalazar1@gmail.com
..... Sara Narayan, Stevenson University, SNARAYAN@stevenson.edu

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5. Sara Narayan, Stevenson University, SNARAYAN@stevenson.edu

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COMMENTS:

"We made it! The Year 2020 was difficult, but we all managed it, some were more hurt than others, but we had one another.

Useful Links:

- https://www.editage.com/insights/a-young-researchers-guide-to-perspective-commentary-and-opinion-articles
- See Chesapeake Chemist volume 77 Issue No. 4 pg.13 for the announcement of a government
- Senior Chemists presentations: Dr. G. Lozos, Dr. R. Berninger and Dr. C. Milton https://acsmaryland.org/chemistry-video-links/

OLD CHESAPEAKE CHEMISTS ISSUES: https://acsmaryland.org/. Scroll down the current year's issues

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Chesapeake Chemist
Maryland Section American Chemical Society

Memory of people's pandemic experiences

Invitation... to all ACS Maryland Section Members.

How are you feeling during the COVID-19 pandemic? Let us know your experiences, let us hear your voices. Scholars, doctors, scientists, health experts, university administrators will better understand how the community reacted to the COVID-19 pandemic and how we are able to respond and help support the world. Send us an article with pictures, graphs, videos or journal entries, it will help us all. This is important for our history. Thank you Dr. Lee Leftkowitz for this magnificent idea

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