THE OCTAGON

Volume 91, No. 5, May 2008 Lehigh Valley Section of the American Chemical Society

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Councilors Report

from 235th ACS National Meeting, New Orleans, LA, April 6-10, 2008, Submitted by Carol Libby

Roger Egolf and I represented the Lehigh Valley Section at the recent meeting of the Council of the American Chemical Society. Roger, our Alternate Councilor sat in for Councilor Pam Kistler, who was unable to attend. Roger was very busy at the meeting since he is also Chair of the Division of the History of Chemistry. The Council is the ACS's representative body, with the vast majority of Councilors representing either local sections or technical divisions. Our own Ned Heindel, by virtue of being a past president of the ACS, is also a Councilor. There may be other Lehigh Valley ACS members who represent their technical divisions on the Council. [Councilors, let me know. I'm sure that your ACS experiences could be shared in the Octagon.]. The Council meeting is a morning-long event, with many reports, petitions to vote on, and speakers from the floor, all tightly controlled by the ACS's version of Robert's Rules of Order. I also spent considerable time in New Orleans at meetings of the Local Section Activities Committee (LSAC), of which I am a member, and the Committee on Minority Affairs, where I serve as a liaison from the LSAC.

Here are some selected highlights from the Council meeting and my time at the national meeting:

Elections

From four candidates presented, two were voted in to run this fall for President-Elect 2009. They are:
Joseph S. Francisco, Professor, Purdue University
Josef Michl, Professor, University of Colorado

Petition Passed to Make Students Full Members of the ACS

After careful consideration and debate, the Council approved a petition to broaden qualifications for membership, creating a new category of student membership. Currently students who choose to join the ACS are "affiliates," who lack voting rights, usually operate in their college's student affiliate chapter and must reapply to be "real" ACS members after they receive their chemistry degree. Under the new membership rules, students would become voting members of the society, nationally and in our local section. It's estimated that our Lehigh Valley section size would increase by 8.5%. I supported this petition because we need the most diverse outlook as we move into the 21st century. As a college educator I know that young people have passion, enthusiasm and fresh ideas that will invigorate the ACS at the local and national levels. The Board of Directors will vote within 90 days on whether to ratify the approved petition. The Petition on Membership Categories and Requirements contains changes to the ACS Constitution, and not just the Bylaws. Therefore, in the fall, ACS members must approve these changes for them to be valid.

Member Statistics and Maintenance

At the close of 2007, Society membership totaled 160,052, with a net loss of 439 members at the end of the year, despite a near record number of new applications. There has been much discussion among ACS leaders about how to best serve members and maintain our preeminence as a scientific organization.

The 2008 strategic plan, which you can view and comment on at http://www.acs.org/, reflects these deliberations. Areas that are getting big attention are global inclusiveness, interdisciplinary outreach, and the development of communication and information tools that are especially popular among younger populations. An example of the latter is the ACS Member Network, a professional networking tool, promised for August. Check it out at http://www.acs.org/MemberNetwork.

The Society's Finances

The Society ended 2007 with a net from operations of $9.6 million, out of a budget of about $440 million. Nonetheless, dues will go up a bit to $140 as required by the ACS Constitution. It should be noted that our dues are a relatively small source of income for the ACS. Publications and Chemical Abstracts constitute the main cash flow.

Attendance Report

The New Orleans ACS spring national meeting had 13,302 attendees.

Chem Olympiad News

Twenty-five high school students took the local Chemistry Olympiad exam at Muhlenberg College in March, and from these three qualified to take the National exam. on April 18th.

The finalists were Caroline Hsu and Paul Rigge of Emmaus High School, and Kerry Cao of Parkland High School.

The International Olympiad will be held in Budapest, Hungary.

*LVACS Organic Scholarship Announcement of Winner*s

The Lehigh Valley ACS Organic Chemistry Scholarship Committee congratulates Clint Stalnecker of Albright College, and Kyle Reichl, of Lafayette College, for their performance in the Organic Chemistry Scholarship Competition. The two ended the competition in a tie and will split the award. Additionally they will be sharing the prize for the best essay in the competition. The total award for each student will be $550. The students will be honored at the September meeting of the Lehigh Valley American Chemical Society.

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This Month in Chemical History

Harold Goldwhite, California State University, Los Angeles - hgoldwh@calstatela.edu,

Prepared for SCALACS, the Journal of the Southern California, Orange County, and San Gorgonio Sections of the American Chemical Society

Wilhelm Ostwald (1853 – 1932) is often known as the father of physical chemistry. But there's much more to Ostwald than just physical chemistry. My interest in Ostwald this month is prompted by my recent acquisition of the English edition of his "Manual of Physico-Chemical Measurements" of which more in the following column. But first to the man himself. I have drawn on the "Ostwald Memorial Lecture" by F.G.Donnan, delivered to the Chemical Society [of London] on January 27, 1933. Since Ostwald's autobiography runs to 3 volumes, and Donnan's lecture to 17 pages of small print, I can only hope to give a précis of some of this great man's endeavors.

Friedrich Wilhelm Ostwald was born in Riga in 1853. He showed a lively interest in science while at the Gymnasium in Riga and proceeded to the University of Dorpat to study chemistry. There he played a great deal of chamber music (he was an accomplished violist), dabbled in landscape painting, and had an active social life. But he passed the required examinations and, for a thesis project, experimented on the mass action of water. He continued after graduation as an assistant at the university and began working on chemical affinities. He obtained his doctorate at Dorpat and began to lecture on physical chemistry. He also married his wife of 52 years, whom he met at a musical soiree.

At the age of 28 Ostwald was appointed Professor at the Riga Polytechnicum and there, while continuing to work on his influential "Textbook of General Chemistry", he began a program of kinetics studies examining the hydrolyses of acetamide, esters, and sucrose.

On a day in June 1884, as Ostwald himself recalled, he got three things, namely a toothache, a daughter, and the doctoral dissertation of a then unknown Swedish chemist, Svante Arrhenius. The dissertation was titled "Researches on the galvanic conductivity of electrolytes". He grasped the significance of Arrhenius' ideas in connection with his own work on activity coefficients in catalyses of hydrolytic reactions and in August 1884 visited Arrhenius in Upsala. In 1886 Arrhenius came to Riga to work in Ostwald's laboratory.

In 1883 and 1887 the two volumes of Ostwald's textbook appeared and, also in 1887, the first issue of the Zeitschrift fur physikalische Chemie, edited by Ostwald, appeared. This was the first journal devoted to physical chemistry and numbered among its collaborators William Ramsay (then at Bristol). Many of Ostwald's papers appeared in the new journal including work on conductivity and dilution; cell potentials; and catalysis by acids of redox reactions. Ostwald was called to the Chair of Physical Chemistry at Leipzig in 1887 and among the assistants he appointed on arriving there was Walther Nernst and Ernst Beckmann (of thermometric fame!). His Leipzig laboratory became the world center for the new physical chemistry, which included the ionization views of Arrhenius, van't Hoff, and Ostwald. Dozens of foreign and German students came to these laboratories to work on physico-chemical problems that included osmotic pressure, and Ostwald's famous dilution law. Four thick volumes cover the work done in the laboratory in the decade 1887 – 1897. To quote Donnan:" Picture to yourselves a friendly enthusiastic man, with penetrating eyes, fresh colour, and reddish hair, moustache, and beard, going the round of the research laboratory every day. If you had a difficulty, Ostwald had a solution to offer."

Let me now turn to other aspects of Ostwald's career. He initiated and edited a series of classic works in the history of chemistry. He wrote many influential texts, including beginning textbooks. He translated Willard Gibbs great thermodynamics paper into German and promoted its ideas. He was also a philosopher of science, proposing energy rather than matter as the fundamental stuff of the universe. In 1903 – 1906 he paid several visits to the United States, lecturing on both chemistry and philosophy. After World War I, retiring from chemistry, he studied the scientific foundations of color rendering in art.

Ostwald received over 60 honors including degrees and medals from many leading universities and scientific societies. He died in Leipzig in April 1932.

I recently purchased a copy of Ostwald's "Manual of Physico-Chemical Measurements" translated by James Walker, Professor of Chemistry at University College, Dundee and published in London and New York by Macmillan & Co. in 1894. I will examine the contents of this influential book, which first appeared in German in 1893. It is perhaps the first textbook of experimental physical chemistry. As Ostwald says in his preface:" I have not written for the beginner, who has neither acquired the manipulative skill necessary for the performance of these experiments nor a sufficient knowledge of the more important processes, but for the chemist or physicist who has already gone through the greater part of his special course, and recognizes the necessity of making himself acquainted with the borderland between the two sciences…". (Note the gender specificity of the language!)

My copy of the book has a set of tables inserted into a pocket at the back of the book. They are interesting; a table for the division of a slide rule; densities of water and mercury; specific heat of water; tables for Wheatstone's Bridge; and calculation of the dissociation constant.

Ostwald paid much attention to measurement, precision, and accuracy. The first chapter is on calculation and includes instruction on the slide rule. (A reminiscent moment; when I first taught general chemistry laboratory we devoted the first class meeting to instruction on the use of the slide rule. I wonder what became of the six foot demonstration slide rule we used to hang at the front of the classroom.) Chapter 2 is on measurement of length, including the vernier; Chapter 3 on weighing including allowances for the buoyancy of air; Chapter 4 on measurement and regulation of temperature – Ostwald invented an ingenious thermostat that is described in Chapter 5. This chapter also includes an interesting section on stirring motors: "In the laboratory we may make use of gravitation, water, hot-air, and electromagnetic motors" but he also describes clockwork motors. Small hot-air motors costing around two English pounds are kept running continuously at about 3 - 5 revolutions per second by means of a small burning gas jet. While conceding the utility of electromagnetic motors it is impractical to run them from galvanic cells. "If the laboratory is connected with an electric station [uncommon at this time-hg] these motors are very easily set up and started."

Chapter 6 on glass-blowing reminds us that Ostwald was himself a talented and ingenious experimentalist, who did much of his own glass-blowing and required his students to do the same. All the work was with soft glass which any of my readers with glass-blowing experience will appreciate is an order of magnitude more challenging than working with borosilicate glass.

Further chapters follow on thermal measurements including temperature and calorimetry; optical measurements including spectra; viscosity, surface tension, and solubility; and determination of molecular weights in solution. A long chapter (over 50 pages) on electrical measurements includes potentials, conductivities, and dissociation constants. And finally, in a handful of pages devoted to chemical dynamics, there are some actual experiments including catalysis of the hydrolysis of methyl acetate; and the inversion of cane sugar. Thus the manual lives up to its title "Manual of Physico-Chemical Measurements". In this book Ostwald gave the scientific community the tools for carrying out their own experimental investigations of physical chemistry.

Chem Shorts for Kids

by Dr. Kathleen A. Carrado, Argonne National Labs
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The Elementary Education Committee of the ACS Chicago Section presents this column. They hope that it will reach young children and help increase their science literacy. Please share with children and local teachers.

Please note: All chemicals and experiments can entail an element of risk and no experiments should be performed without proper adult supervision.

Panoply of Periodic Tables Static Power

Kids, what is the most popular chart used by chemists? Elements are the building blocks of all matter, and currently there are about 117 different and unique atoms comprising the elements. There are many ways to arrange the chemical elements into a

chart. Mendeleev arranged rows and columns so that elements were grouped according to recurring (periodic) common properties. Mendeleev's table forms the basis for the modern periodic table of the elements, which lists the elements in order of increasing atomic number while grouping them according to periodic properties. But there isn't just 'one' modern periodic table of the elements. Unless you want a table that is impossible to read, there is a limit to the facts provided on each table. Plus, there is more than one way to group the elements. That's why you'll find more than one periodic table of the elements here:

Clickable Periodic Table of the Elements (http://chemistry.about.com/library/blperiodictable.htm) . Anne Marie Helmenstine has a favorite at about.com: Chemistry. You can tell at a glance whether an element is a metal or nonmetal, get its atomic number, determine its usual valence, and click on a symbol for detailed facts; there are also extra links provided. Other common variants can be found with simple internet searches; a nice one that is particular to our age group is: (http://www.chem4kids.com/files/elem_intro.html).

Printable Periodic Tables (http://chemistry.about.com/od/periodictableelements/a/printperiodic.htm). This is a collection of several different versions of the periodic table to save or print.

Periodic Table Image Gallery (http://chemistry.about.com/od/periodictables/ig/Periodic-Tables/). This link has Mendeleev's original as well as variations like circular and spiral tables.

Groups of Elements Periodic Table (http://chemistry.about.com/library/weekly/blgroups.htm). If you click a link on this table you get information about the group to which the element belongs.

Fireworks Periodic Table (http://chemistry.about.com/library/weekly/ blfireworks.htm). Clicking an element will tell you how it is used in fireworks and other pyrotechnic devices.

Periodic Table sorted by Abundance: In the June 1998 column of ChemShorts for Kids we gave the reference to our article on an activity using the periodic table sorted by abundance on the Earth's surface: http://membership.acs.org/c/chicago/ChmShort/CS98.html#6.98.

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National and Regional Meetings

Register Now for ACS Fall National Meeting

Philadelphia, the City of Brotherly Love, will once again host ACS for its 236th National Meeting & Exposition on August 17 – 21, 2008. The meeting's technical program will be robust with the ACS president, 31 technical divisions, one secretariat, and three committees hosting original programming in 717 half-day oral sessions and 93 poster sessions. More than 8,000 papers will be presented, including thematic programming around "Chemistry for Health: Catalyzing Translational Research." The meeting will also feature centennial celebrations of four technical divisions (Agricultural & Food Chemistry, Industrial & Engineering Chemistry, Organic Chemistry, and Physical Chemistry).

Philadelphia's Pennsylvania Convention Center will hold Attendee Registration, the National Exposition, ACS Career Fair, poster sessions and many technical sessions. Additional technical sessions will be located at nearby hotels, including the Philadelphia Marriott which also will serve as the governance hotel.

Registration and accommodations are open now. Register by July 25 to take advantage of early registration rates. For more information, including detailed information about visit http://www.acs.org/philadelphia2008.

Central Regional Meeting Planned
June 10 – 14

The Columbus Local Section is hosting the Central Region's meeting this spring at the Columbus Hyatt. Reserve a room early at the meeting rate by visiting the meeting web site at www.cermacs2008.org and clicking on the hotel name. You can register online or you may call them at (614) 463-1234 and mentioning you are with ACS CERMACS 2008. Advance registration is now open until May 20.

The committee has planned a spectacular opening reception for attendees, one not to be missed. The event will take place at the COSI, within walking distance of the meeting hotel. There will be a reception, an opportunity to tour the museum, a Sci-Mix poster session and a plenary talk by Lonnie Thompson, recipient of the 2007 National Medal of

Science. Professor Thompson, a renowned glaciologist and climatologist will discuss "Retreating Glaciers, Abrupt Climate Change and Our Future". Tickets are only $30.00 and may be purchased when registering, and on Tuesday at the registration desk or COSI. You do not have to register for the meeting to attend.

CERMACS 2008 has organized its program around the theme "Discovery in Columbus", highlighting the leadership in research and technology within the Central Region. Visit the web site at www.cermacs2008.org for the latest information. Among the topics are energy alternatives, green chemistry, protein engineering, nanomaterials, plastics and polymers.

Northwest and Rocky Mountain to Hold Joint Meeting In Park City, Utah

The Park City Marriott is the place, and June 15 – 18 are the dates for the Joint NORM/RMRM regional meeting. They have scheduled 11 symposia and 5 general sessions on topics such as biofuels and bioproducts, inhomogeneous electrolytes, medicinal and bioorganic chemistry. The abstracts program will close in mid-May and advance registration will both close in mid-May. Please visit their web site at www.chem.byu.edu/acs/registration for more details. Information on room reservations is also found on the web site. Take advantage of the $95.00 per night cost and register early. Reserve a room online at the regional meeting web site or call them at (800) 234-9003.

NERM 2008 Opens In Burlington, Vermont

The Northeast Regional Meeting will take place June 29 –July 2 at the Sheraton Conference Center. The Chemical Institute of Canada is a sponsor and will participate jointly. The US Local Section of the Royal Society of Chemistry is also participating. The online abstracts program is now open and NERM is seeking papers from chemists and students in the areas of organic, analytical, medicinal, industrial, and biochemistry, among the many topics listed on their web site at www.nerm2008.org/ While online be sure to make your room reservation early, before rooms sell out.

NERM 2008 has planned a number of unique social events not to be missed, among them a conference dinner and cruise, during which winners of regional awards will be recognized. Their opening reception on Sunday evening will have a "green" theme and feature chemistry haikus written by Vermont children.

On Monday night, following dinner, there will be a NERM Comedy Night and cocktails. On Tuesday afternoon, there will be several hours open to allow attendees an opportunity to sightsee in this beautiful location.

News of the Western Regional Meeting

Las Vegas is the site of the 2008 Western Regional Meeting, September 24 – 27, at the Riviera Hotel. Early September 24 there will be a breakfast and tour of the Atomic Testing Museum. The UNLV Student Affiliates have planned a program for undergraduates that will open with an ice cream social before getting down to work on presenting their papers.

The meeting is co-hosted with the Two-Year College Chemistry Consortium. The online abstract program is now open and registration will open in the near future. Visit their web site for more details at http://membership.acs.org/w/WRM2008/.

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The Southwest Regional Meeting
October 1 – 4

SWRM 2008 has selected a perfect time of the year to hold their meeting in Little Rock, Arkansas. The Peabody Hotel is the location, and the awards banquet is scheduled to be held in the William J. Clinton Presidential Library. Their abstract program is now open and advance registration is scheduled to open in the near future. They already have an extensive program established. Visit the web site at www.swrm.org/2008/index.htm and plan to participate.

MWRM 2008 to Take Place October 8 – 11

The Ramada Inn in Kearney, Nebraska will be the location for the Midwest Regional Meeting this fall. Visit their web site to view their program and submit an abstract. The URL is http://mwrm2008.unk.edu/index.htm. Advance registration will open in early June. Topics include biophysics of proteins and nucleic acids, renewable energy: biofuels, materials and nanoscience, inorganic, organic, and physical chemistry.

An exceptional undergraduate program is planned as are workshops, pre-college educational programs and social events.

SERMACS 2008 is Coming to Nashville
November 12 – 15

The Southeastern Regional Meeting is mixing chemistry, music, and good ole country fun this year at the Sheraton Music City. Their online abstract program is available at their web site at www.sermacs2008.org/. The technical program addresses such topics as carbanion chemistry, synthetic organic, and nucleic acid chemistry, electrochemistry at the nanoscale, patent law developments, and much more.

Students and educators can count on sessions of value to them, and workshops are aimed at addressing interests and needs of attendees.

Events planned include a welcome reception, a down home Tennessee barbeque party, a graduate school fair, and an opportunity to two-step and line dance. The meeting will have a shuttle available to attendees each evening to get them into downtown Nashville and to the shopping area.

News From National ACS

Project SEED Celebrates 40th Anniversary in Philadelphia

If you are planning to attend the 236th ACS National Meeting in Philadelphia, August 18-22, join the special events listed below that are honoring the 40th anniversary of Project SEED:

Presidential Event Symposium
Monday, August 18, 2008; 2:00 – 5:00 PM
Project SEED 40th Anniversary: Crossing Generations and Energizing Minds
Cosponsored by: Project SEED, CHED, CMA, SOCED, WCC, YCC, CCA, LSAC.

The Project SEED is the American Chemical Society's most successful social action program. The program relies on mentor scientists who volunteer to have high school students working on research projects in their labs. Over the past forty years, the program has contributed to the career development and educational growth of economically disadvantaged high school students by providing nearly 8,700 summer research experiences. At this symposium you will hear about the success of the Project SEED program from mentors, coordinators, graduates, current students, and donors.

Monday, August 18, 2008; 9:00 AM – 12:00 Noon
Project SEED: Cutting-edge Research with High School Students
Cosponsored by: PRES, CHED, CMA, SOCED, WCC, YCC, CCA, LSAC.

As a part of the 40th anniversary of the Project SEED program, this special technical session will describe several successful research projects in which high school students have successfully participated doing cutting-edge research alongside of their mentors and co-workers.

ACS Fellowship Program – Call for Applications

For more than 30 years, the American Chemical Society (ACS) has sponsored public policy fellows to work on Capitol Hill or in the ACS Office of Legislative and Government Affairs.

The fellows begin in September with a four-week orientation program organized by the American Association for the Advancement of Science (AAAS). During this orientation, they begin a search for work in offices on Capitol Hill.

ACS fellows gain first-hand experience with science policy-making, federal research funding, regulatory rule making, and the impact science has on decision-making. They also offer scientific and technical expertise to the government and forge links between the scientific and government communities.

The congressional and science policy fellows have had much success in bringing sound science advice to congressional offices. In fact, a third of them continue to work in the scientific and policymaking communities after their fellowships end.

The 2008-2009 fellowship selection process has just ended; however, ACS is encouraging experienced chemical professionals and new Ph.D.s (degree needs to be earned by September 2009) to apply for the 2009-2010 fellowships. The application deadline is December 31, 2008. If you have any questions about the program or would like to contact former fellows, please contact the ACS Office of Legislative and Government Affairs at (202) 872-4386, or congfellow@acs.org.

ACS Short Courses -
Registration opens May 15 for the Short Courses at the ACS Fall National Meeting in Philadelphia, PA - Early Registration Discount Available

Registration has opened for the Short Courses at the ACS Fall National Meeting in Philadelphia, PA being held August 16-21, 2008. Register before July 16 to receive a $100 discount on your short course registration fee.
Multi-registration and academic member discounts are available. For more information, please visit us at www.acs.org/shortcourses or call (202) 872-4508.

Frontiers in Organic Chemistry

Registration is now open for Frontiers in Organic Chemistry, June 16-21 – a unique opportunity to learn from and consult with internationally acclaimed researchers, led by course director, Dr. Barry M. Trost.
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Innovative Chemistry and Science Education

You've given your part by making a gift to ACS. Learn how to double or possibly triple your gift with no extra cost. See if you qualify. www.matchinggifts.com/chemistry/

ACS offers ways for you to influence the chemistry field today and tomorrow. Create a legacy. Learn how you may qualify to join ACS Legacy Leaders. www.acs.org/giving

Since 1968, Project SEED has placed 8,600 financially disadvantaged high school students in laboratories conducting real research with volunteer scientist mentors. To ensure this life-changing program will be available for future generations of students, please contribute now to the Project SEED Endowment. You will help plant a scientist where previously there might not have been one. www.acs.org/giving

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Programs Win Collaborative Mini-Grants
Mini-grant winners

The winners of the 2008 round of Equipping the 2015 Chemical Technology Workforce mini-grants have been announced. The following will receive $500 for their activities to support technician education and professional development.

Bidwell Training Center (Pittsburgh, PA) for a series of activities to develop the career management skills of the Chemical Laboratory Technician students. The activities will include several workshops on job searching and a panel discussion with local industry representatives.

Great Lakes Process Technology Alliance, Inc. (GLPTA) for a series of video vignettes on the broad spectrum of process technology opportunities available in the Great Lakes region. The videos will be used to recruit students to the process technology programs served by the GLPTA.

Mid-Michigan Technology Group (MMTG) for a series of talks on career opportunities for chemical technology students and newly employed technicians. Technicians at the tops of their career ladders will discuss the skills needed to reach their positions.

Piedmont Community College (Roxboro, NC) for the BioTech Community Day. Geared toward high school students and adult/displaced workers, the event will highlight local opportunities for technicians and Piedmont's biotechnology program. Chemical demonstrations and tours of the BioNetwork Mobile Laboratory will be included.

All of the mini-grant winners have proposed strong programs that bring together several different sectors of the chemical enterprise for the benefit of current and future chemical technicians. Equipping the 2015 Chemical Technology Workforce is proud to help support these activities.

More mini-grants to be awarded

The deadline for the next round of mini-grants is Friday, 20 February 2009. Winners of the 2009 mini-grants will be announced at the 237th ACS National Meeting in Salt Lake City. Information on proposal submission and past winners can be found at www.acs.org/giving (follow the path: Funding & Awards > Grants > Chemical Technology Partnership).

UNDERGRADUATE RESEARCH POSTER SESSION

The Lehigh Valley Section of The American Chemical Society
Moravian College
April 22, 2008

1. EVALUATION OF THE ANALYSIS OF DIAMONDOID COMPOUNDS IN KEROSENE RESIDUES BY GAS CHROMATOGRAPHY/MASS SPECTROMETRY FOR USE IN FIRE DEBRIS ANALYSIS

Heather M. Wert[1], Thomas A. Brettell[1], Ph.D., D-ABC, Vincent J. Desiderio[2], MS
1. Cedar Crest College, Department of Chemistry & Physical Sciences
2. New Jersey State Police Office of Forensic Sciences

2. INVESTIGATION OF THE EFFECT THAT DIFFERENT DRYING METHODS HAVE ON THE MECHANISM OF THEOPHYLLINE RELEASE FROM MICROCRYSTALLINE CELLULOSE BEADS.

Kristina Wagner (kew2@desales.edu) and Francis C. Mayville, Jr.(**francis.mayville@desales.edu**)
Department of Natural Sciences, DeSales University, 2755 Station Avenue, Center Valley, PA 18034.

3. DETERMINATION OF SELENIUM IN RAT TISSUE AND RAT DIET SAMPLES

Jennifer Novatnack, Drs. Shari and Stephen Dunham
Moravian College

4. THE INVESTIGATION OF GAMMA-HYDROXYBUTYRATE AND RELATED COMPOUNDS AS POSSIBLE INTERFERENTS IN THE ANALYSIS OF BREATH ALCOHOL UTILIZING THE ALCOTEST 7110MK III-C

Taylor Grazulewicz* and Thomas A. Brettell, Ph.D.*
*Cedar Crest College, Department of Chemical and Physical Sciences, 100 College Dr., Allentown, PA

5. INVESTIGATION OF THE EFFECT THAT DIFFERENT DRYING METHODS HAVE ON THE MECHANISM OF ACETAMINOPHEN RELEASE FROM MICROCHYSTALLINE CELLULOSE BEADS.

Tiffany LaGasse (tl6633@desales.edu), Brittney N. Fucci (bnf0@desales.edu), Stephanie Smalley (sas5@desales.edu) and Francis C, Mayville, Jr. (francis.mayville@desales.edu)
Department of Natural Sciences, DeSales University, 2755 Station Avenue, Center Valley, PA 18034.

6. SIGNIFICANCE OF SONIFICATION VARIABLES IN MINIEMULSION PREPARATION

Casey M. Parker, Megan B. Casey, Oznur Saygi Arslan, E. David Sudol, and Mohamed S. El-Aasser
Emulsion Polymers Institute and Department of Chemical Engineering, Lehigh University, 111 Research Drive, Bethlehem, PA 18015

7. PREPARATION OF IONIC LIQUIDS AND THEIR USE IN THE SYNTHESIS OF POLYAMINE ANALOG REACTIONS

Francis Charles Mayville Jr., (francis.mayville@desales.edu) and Kara Merancy (merancypants87@hotmail.com)
Natural Science Department, DeSales University, 2755 Station Avenue, Center Valley, PA 18034-9568

8. A STUDY OF IONIC LIQUIDS FOR APPLICATIONS IN THE CONTINUOUS SEPARATION OF BUTANOL FROM FERMENTATION MEDIA

Ashley A Jermusyk†, Samuel A. Morton III†
† Department of Chemical Engineering, Lafayette College, Easton, Pennsylvania, 18042

9. ANILINE TRIMERS WITH MULTIPLE TERMINAL GROUP SUBSTITUTIONS AND CROSS LINKING OF SELECTED PRODUCTS

Amanda Lashua
Cedar Crest College , 100 College Dr., Allentown Pa 18104

10. LASER SYNTHESIS OF LINEAR POLYYNES

Amanda Talbi, Muhlenberg College, Dr. Bruce Anderson, Muhlenberg College
2400 W Chew Street, Allentown, PA 18104

11. THE ADDITION OF CHIRAL ENOLATES TO ACHIRAL γ-HYDROXYBUTENOLIDES

Pui-In Tang and Dr. William H. Miles
Department of Chemistry, Lafayette College, Easton PA 18042

12. SYNTHESIS OF PHENYL LACTOLS VIA AN INTERMOLECULAR HECK REACTION, AND ITS POTENTIAL APPLICATION TO THE SYNTHESIS OF (R)-(-)-BACLOFEN

Greg Pask, Charles E. Russell
Department of Chemistry, Muhlenberg College , 2400 Chew Street, Allentown, PA 18104

13. ENZYMATIC AND CHEMICAL HYDROLYSES OF AN ESTER-CARBONATE DRUG

Stephanie Papastephanou, Karine Fabio
Department of Chemistry, Lehigh University, Bethlehem, PA 18015

14. COMPUTATIONAL STUDY OF THE ENE MECHANISM IN NICOTINAMIDE HYDRIDE-EQUIVALENT TRANSFERS

Lisa Morkowchuk
Moravian College, Bethlehem PA

15. TOXICITY OF FUNCTIONALIZED CARBON NANOTUBES ON CYANOBACTERIA

Sandra Rodriguez, Tina Huang, Yvonne Gindt
Lafayette College, Easton, PA 18042

16. ENGINEERING A NEW SELF-ASSOCIATION ABILITY INTO AN APOPTOSIS-REGULATING PROTEIN

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17. INVESTIGATION OF OLIGOMERIC STRUCTURE FORMATION IN PHYCOCYANIN: THE TRIMER↔MONOMER TRANSITION

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18. DNA INTERACTIONS OF AN ANTITUMOR-ACTIVE RUTHENIUM COMPOUND

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19. RUTHENIUM HYDRIDE HYDROGENATION CATALYSTS WITH BISPHOSPHINOMETALLOCENE LIGANDS

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20. TUNGSTEN COMPLEXES OF A CHIRAL C_2-SYMMETRIC TETRAAMINE LIGAND

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21. INVESTIGATION OF THE SPECTROSCOPY AND REDUCTION POTENITAL CHEMISTRY OF CRYPTOCHROME 1 FROM *VIBRIO CHOLERAE*

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22. SEPARATION AND DNA BINDING REACTIONS OF DIRHODIUM COMPOUNDS

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23. STOPPED FLOW STUDIES OF HEXAMER FORMATION AND DISSOCIATION IN PHYCOCYANIN

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24. DETERMINATION OF DNA STRUCTURE: EFFECTS OF ^{6S}G

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