102nd AOCS Annual Meeting & Expo

May 1–4, 2011 | Duke Energy Convention Center | Cincinnati, Ohio, USA

Program

Experience the science and business dynamics driving the global fats and oils industries.
Introducing the Anderson 12” Hivex™ Series Expander

This new Anderson Hivex™ processes soybeans up to 2500 MTPD & high oil content seeds between 400-500 MTPD. It reduces oil content to 25-30% R.O. in high oil seeds and efficiently shears the oil cells to increase extractor capacities 25-50%.

Features:

- Oil Drainage Cage
- Anderson Expeller® Shafts
- VFD Main Drive
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Contact us today to learn more about how this unique oilseed processing machinery can benefit your current or future requirements.

ANDERSON INTERNATIONAL

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Website: http://www.andersonintl.net
Verenium’s Purifine® PLC is a ground-breaking product that offers a way to improve yields from degumming and refining of high phosphorus seed oils. In addition to increased oil yields, plants that adopt Purifine® PLC benefit from reduced dilution of meal protein, reduced formation of unwanted side products, and reduced use of chemicals and other non-specific processing aids in the refinery. Purifine® PLC is easily integrated into most existing plant designs without requiring major changes to conventional processing conditions or equipment.

What does this mean for you? Getting just a little more oil from each of your seeds adds up to more value, less waste and better control over the quality of your products. The result is industry-leading economics and considerably improved operating margins.

Add Purifine® PLC. Add value. Reap the rewards.
Oil-Dri’s adsorbent products have helped produce quality edible oils for over twenty-five years in more than sixty countries worldwide. Our Pure-Flo® and Perform® products deliver cost-effective options for purifying even the most difficult to bleach oils.
Welcome!

Dear Meeting Attendees,

On behalf of the organizing committee, staff, and 3,500+ worldwide AOCS members, it is my distinct pleasure to welcome you to the 102nd AOCS Annual Meeting & Expo! An enriching week of science, friendship, and fun awaits you in my hometown, Cincinnati.

Cincinnati is both historic and vibrant. I hope you saw my personal choice for an historic structure, as you arrived—the John A. Roebling Suspension Bridge. The Roebling Family built this bridge over 100 years ago, as a “proof of concept” before beginning the Brooklyn Bridge in New York. For new and vibrant architecture, you can easily see the tallest building in town, The Great American Tower, called “The Tiara,” just completed, and beginning to house tenants.

Thank you also to the 75+ exhibiting companies in our Expo and to the authors who have contributed to the 70+ technical sessions in the program. Our scientific sessions represent the quality and dedication of our Society’s members to provide you with the most up-to-date and meaningful developments in the field of fats and oils and their related applications.

This year’s program offers sessions by all 12 AOCS Divisions, including several joint inter-Division sessions. In addition to these oral and poster presentations, our Hot Topic Symposia will again be offered on Tuesday morning. And more!

Also make sure to join us at the annual breakfast business meeting Tuesday morning to welcome in our new leadership and learn about our Society’s past year and future goals.

Please take advantage of all the Annual Meeting has to offer, including informal networking, the Opening Mixer, technical and social events throughout the meeting, and the poster displays Sunday through Wednesday, with authors present on Monday and Tuesday afternoon.

These functions provide great opportunities to learn about recent developments in all aspects of oilseeds: production, processing, products, green technology, and health benefits. The industry representatives at the Expo displays will keep you up-to-date on the latest research supplies, equipment, literature, and oilseed products.

I am looking forward to seeing YOU at the Opening Mixer and at many of our other functions this week. If you have any questions, please do not hesitate to ask me or any of the AOCS staff members.

Again, enjoy Cincinnati. And plan to join us next year in Long Beach, California.

W. Warren Schmidt
General Chairperson

Free Wi-Fi

Complimentary wireless internet access is available in the Expo Hall. To access the complimentary Wi-Fi, the User Name is “Purifie PLC” and the Password is “BetterProcess”.

Sponsored by: Verenium Corporation

Complimentary email stations are also available in the Expo Hall.
AOCS Mission
To be a global forum to promote the exchange of ideas, information, and experience, to enhance personal excellence, and to provide high standards of quality among those with a professional interest in the science and technology of fats, oils, surfactants, and related materials.

The AOCS Governing Board
President: J. Keith Grime, JKG Consulting LLC, USA
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• Vishal Jain, Analytical, Mars Chocolate North America, USA
• Stephanie Jung, Protein and Co-Products, Iowa State University, USA
• Douglas Root, Industrial Oil Products, Agricultural Utilization Research Institute, USA
• Philippe Rousset, Edible Applications Technology, Nestlé Research Center, Switzerland
• Daniel Solaiman, Biotechnology, USDA, ARS, ERRC, USA
• Toni Wang, Phospholipids, Iowa State University, USA
• James Willits, Processing, Desmet Ballestra North America Inc., USA
• Shane Zhou, Lipid Oxidation and Quality, Kellogg North America Company, USA
Thank you

AOCS greatly appreciates the generous contributions from the following organizations. Without their assistance, the success of the 102nd AOCS Annual Meeting & Expo would not be possible.

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Monday Dedicated Poster Viewing and Expo Reception

AOCS Annual Business Meeting

Opening Mixer Co-Sponsor

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Thank you, AOCs Corporate Members!

As of March 17, 2011

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Vegetable Oils & Fats Industrialists Association Turkey
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Wright Group

Please visit us at 102nd AOCs Annual Meeting & Expo in Cincinnati, OH USA May 1-4, 2011 Booth 417

Körting Hannover AG
www.koerting.de
Social Events

Opening Mixer
Sunday, May 1, 5:30–7:00 pm
Expo Hall A
$75

Visit with the exhibitors, network with your colleagues, and enjoy a variety of hors d’oeuvres and beverages. This event is included in the registration fee for full-technical registrants, exhibit personnel, pre-meeting short-course-only registrants, and for those who purchased the guest package. Additional tickets may be purchased at the Registration Desk.

Dedicated Poster Viewing and Expo Receptions
Monday, May 2, 4:00–5:30 pm
Tuesday, May 3, 5:00–6:30 pm
Expo Hall A
$30

Come and meet with poster authors and representatives from the exhibiting companies in a friendly, relaxed atmosphere. Beverages and light snacks will be offered. This event is included in the registration fee for full-technical registrants, exhibit personnel, and for those who purchased the guest package. Additional tickets may be purchased at the Registration Desk.

AOCS Annual Business Meeting
Tuesday, May 3, 7:00–8:00 am
Grand Ballroom B
$30

AOCS President J. Keith Grime will deliver a brief address, followed by the installation of incoming officers and the presentation of awards. This event is included in the fee for all full-technical registrants and for guests who have purchased the guest package. Single-day and non-technical registrants may purchase a ticket at the Registration Desk.

Keynote Address
Tuesday, May 3
8:00–8:45 am
Grand Ballroom B

A Petrochemical Perspective on Sustainability, the Role of the Chemical Industry, and the Competitive Position of the US Gulf Coast.
Robert Chouffot, General Manager, Higher Olefins and Derivatives, Shell Chemical LP, USA

Immediately following the AOCS Annual Business Meeting, Robert Chouffot will provide a robust view on sustainability and how key issues are being addressed, especially global warming.

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Experience AOCS!

Newcomer Opportunities

Newcomer Networking Hour
Sunday, May 1, 4:00–5:00 pm
Expo Hall A
Start making those connections! In a casual atmosphere, speed-network with first-time meeting attendees and other individuals attending the meeting.

Newcomer Networking Breakfast
Monday, May 2, 7:00–8:00 am
Expo Hall A
Connect with professionals who can help you navigate the conference and make the most of your attendance experience.

Message Board
Leave messages for your colleagues on this message board located near Registration. You may leave messages for AOCS staff with the Information Desk located at the AOCS Registration Desk.

Career Center
The AOCS Career Center is located near Registration and is free of charge to all meeting attendees. Meeting attendees are invited to participate by leaving copies of résumés or job descriptions in the holders on the bulletin boards. Stop by and browse the listing of jobs and review a listing of jobs available through our online Career Services website.

Student Common Interest Group (CIG) Lunch and Mentor Program
All students are invited to enjoy a free lunch on Wednesday, May 4 at 12:00 pm in Room 263-264 as part of the Student CIG business meeting and mentor program. A number of active members from academia, industry, and government have volunteered to serve as mentors to AOCS student members. This is your chance to gain a professional contact and advice. Start developing your professional network through the Mentor Program.

AOCS Pavilion

Expo Hall A
Sunday ........................................... 10:00 am–7:30 pm
Monday ........................................... 7:00 am–5:30 pm
Tuesday ......................................... 7:00 am–6:30 pm
Wednesday ................................... 7:30 am–3:00 pm

AOCS Press Bookstore
Sunday ........................................... 10:00 am–7:30 pm
Monday ........................................... 7:00 am–5:30 pm
Tuesday ......................................... 7:00 am–6:30 pm
Wednesday ................................... 7:30 am–3:00 pm

Browse through special conference-priced books, new releases, and technical reference materials at the AOCS Press Bookstore. You will find t-shirts, too.

Author/Editor Book Signing
Monday, May 2, from 4:30–5:30 pm. Be sure to stop by for this great opportunity to meet the authors and editors of AOCS Press products.

Plinko returns!
Win prizes or receive an additional discount when you play this suspenseful game of chance at the AOCS Press Bookstore.

Social Media 101
LinkedIn, Facebook, and Twitter are not just for play! Stop by The Lab to learn how to incorporate these dynamic social networking tools to enhance your professional and business development.

Also at The Lab:
• Have your profile picture taken for Facebook or LinkedIn
• Computer or technical difficulties fixed in moments
• One-on-one, hands-on training in a variety of online learning programs and online products

Complimentary Wireless Internet Access and Email Stations are available in the Expo Hall during the AOCS Pavilion hours.

Follow us on Twitter
Fan us on Facebook
Join us on LinkedIn

Complimentary Wireless Internet Access sponsored by
16th Annual Student CIG Silent Auction

Sponsored by the AOCS Foundation and Student Common Interest Group

This popular event begins at 1:00 pm on Sunday and ends at 5:30 pm on Tuesday. Now in its 16th year, the Silent Auction raises money for outstanding AOCS Foundation student initiatives and generates friendly competition for the variety of creative items that are donated. Help support AOCS student programs by taking part in the bidding. See page 19 for more details.

AOCS FOUNDATION

Influencing Innovation

The Influencing Innovation Campaign raises money to fund the research and development of new products and services designed to continue building the global network you rely on.

Stop by the AOCS Foundation booth to make your contribution and learn more. Be a part of it!

AOCS Meetings

Come get information on upcoming conferences and short courses to be held around the world.

Abstract Search

From any email station, delegates can search for and print abstracts for any of the technical presentations.

TECHNICAL SERVICES

Stop by the Technical Services area to talk about how AOCS can help with achieving, maintaining, and promoting peak levels of laboratory accuracy and performance through our Methods and Proficiency Programs.

Membership

Experience the member advantage. Stop by and see how membership connects you to a world of resources to help you succeed today and into the future.

Annual Meeting Career Center

Brought to you by AOCS Career Services

Take advantage of our onsite Career Center to search for the perfect employee or career opportunity.

Free! Post or view printed job openings or résumés at the Career Center located near the meeting Registration Desk.

Career Services

Helping you make the right connection.

www.aocs.org/goto/careers
Expo 2011

Expo Hall A

The AOCS Expo—the gathering place for Annual Meeting delegates from around the globe—will showcase more than 75 exhibiting companies covering a variety of product categories:

- Consultants and Other Services
- Food Technology and Ingredients
- Instrumentation and Analytical Technology
- Non-Edible Products’ Supplies and Services
- Processing/Manufacturing: Equipment Supplies and Services

Attendees have the opportunity to visit industry suppliers in one convenient location. See the Expo Guide on page 74 for more details.

The Expo Hall also hosts the Opening Mixer and the Dedicated Poster Viewing and Expo Receptions.

Complimentary Wireless Internet Access and Email Stations are available in the Expo Hall during the AOCS Pavilion hours.

Don’t leave it up to chance.

Let us ensure the quality of your lab.

Enroll today in the AOCS Laboratory Proficiency Program.

www.aocs.org/goto/lpp
General Information

Registration Desk
Sunday.................................................. 10:00 am–7:00 pm
Monday.................................................. 7:00 am–5:30 pm
Tuesday................................................. 7:00 am–6:30 pm
Wednesday.......................................... 7:30 am–5:00 pm

Information Desk
Located at the end of the Registration Desk; please stop here for help with any meeting and AOCS-related questions.

Message Board
Leave messages for your colleagues on this message board located near Registration. You may leave messages for AOCS staff with the Information Desk located at the AOCS Registration Desk.

Career Center
The AOCS Career Center is located near Registration and is free of charge to all meeting attendees. Meeting attendees are invited to participate by leaving copies of résumés or job descriptions in the holders on the bulletin boards. Stop by and browse the listing of jobs and review a listing of jobs available through our online Career Services website.

Lost and Found
Please bring any items you may find to the Information Desk. In turn, if you lose something, please check here to see if it has been turned in.

Name Badges
Name badges are color-coded to indicate registration status:

- **AOCS Member** Yellow
- **Nonmember** Blue
- **Guest** Tan
- **Student** Green
- **Exhibit Personnel** White
- **Expo Only** White
- **Single-Day** Orange
- **Daily Tour Only** Purple

- Only registrants with the badge colors noted in **bold** are allowed to attend technical sessions.
- Badge checkers will be at the doors to all sessions, and only those with the correct badges will be admitted.
- If you are not a technical registrant, but would like to upgrade to one, please see the Registration Desk.
- You are encouraged to complete the reverse side of your name badge. This will help AOCS staff or medical personnel in case of an emergency situation.

Donate Your Meeting Supplies
Don’t want to take home your Annual Meeting portfolio bag, notepad, or pen? Please feel free to bring them to the Registration Desk and we will make sure the items are put to good use by local organizations.

Smoking Policy
Smoking is prohibited at all AOCS functions.

Create Your Annual Meeting Itinerary
Stop by the computer kiosks located in the AOCS Pavilion to create an itinerary schedule of the technical presentations and events you don’t want to miss.

Event Tickets
- Keep your tickets with you. Most AOCS events are ticketed functions and you will need your ticket to be admitted.
- Tickets fit inside your name badge holder for easy access.
- If you have pre-registered, your tickets are in your registration envelope along with your name badge. If you registered on-site, you received your tickets with your other meeting materials.

Cell Phones
In the Technical Sessions: Please turn off your cellular phones (or set to vibrate).

Photography and Recording Policy
- In the Technical Sessions: No video recording, tape recording, or still photography is allowed, except by registered media.
- In the Expo Hall: Video or still photography of an exhibitor’s booth is not allowed, unless permission is granted by the exhibitor. No video or still photography of poster presentations is allowed.

Fire Safety Precautions/Protection of Valuables
Fire safety precautions are posted in every guest room, so please take a moment to familiarize yourself with them. For your safety, double-lock the door when you are in your room, lock any connecting doors from your side, and make sure to lock your door when you leave your room. Hotels have limited liability regarding theft of personal property from hotel rooms, so please store extra cash or other valuables in a safe deposit box provided by the hotel.

Meeting Registration List
In keeping with the AOCS “Green Initiative,” a link to the registration list for this meeting was emailed to all pre-registered delegates the week before the meeting. If you did not receive this and would like a copy, please see the Registration Desk. You may view it at http://AnnualMeeting.aocs.org/reglist/index.cfm. Password: 2011AMLIST.
Cincinnati City Information

Duke Energy Convention Center
525 Elm Street
Cincinnati, OH 45202
Tel: +1 513-419-7300
Fax: +1 513-419-7327

Annual Meeting Hotels
Hilton Cincinnati Netherland Plaza
35 West Fifth Street
Cincinnati, OH 45202
Tel: +1 513-421-9100
Fax: +1 513-421-4291

Hyatt Regency Cincinnati
151 West Fifth Street
Cincinnati, OH 45202
Tel: +1 513-579-1234
Fax: +1 513-354-4299

Millennium Hotel Cincinnati
150 West Fifth Street
Cincinnati, OH 45202
Tel: +1 513-352-2100
Fax: +1 513-352-2148

Business Centers
The Duke Energy Convention Center does not have an on-site business center. Four business centers are conveniently located nearby.

FedEx Office Print & Ship Center (24-hour)
51 East Fifth Street
Cincinnati, OH 45202
Tel: +1 513-241-3366
Fax: +1 513-241-0584

Hyatt Regency Cincinnati (24-hour)
151 West Fifth Street
Cincinnati, OH 45202
Tel: +1 513-579-1234
Fax: +1 513-354-4299

The UPS Store Downtown Cincinnati
407 Vine Street
Cincinnati, OH 45202
Tel: +1 513-929-0090
Fax: +1 513-929-0093

Millennium Hotel Cincinnati (24-hour)
150 West Fifth Street
Cincinnati, OH 45202
Tel: +1 513-352-2100
Fax: +1 513-352-2148

Cincinnati Visitor Information Booth
Duke Energy Convention Center
Find out all that Cincinnati has to offer—attractions, sightseeing, restaurant recommendations, transportation information, and more. Staffed by the Cincinnati USA Convention & Visitors Bureau over these days and times:

Sunday, May 1 ................................................................. 11:30 am–6:30 pm
Monday, May 2 ................................................................. 11:00 am–6:00 pm
Tuesday, May 3 ................................................................. 11:00 am–6:00 pm

What’s for Lunch?
The Expo Café, located in the Expo Hall, will offer a variety of lunch options for purchase. Open Monday through Wednesday, 11:30 am–3:00 pm.
Natura’s scientists are inspired by the richness of Brazilian biodiversity in their search for new ingredients, with unique benefits, for our cosmetic products. Deeply integrated within our philosophy is a respect for and preservation of native traditions, beliefs and ecosystems, while sharing our corporate success with the local communities throughout Brazil and in the Latin American countries in which we operate.

We are strongly committed to the sustainable use of resources and green processes across all our company practices. Our practices require that we measure, and balance, the economic, social and environmental impacts of our entire supply chain. In doing so, we in turn raise awareness, share wellness and engage the community of people with whom we relate in the creation of a better world.
Optional Tours

Please visit the AOCS Registration Desk for more complete tour information or to register for the tours. Tickets are on a space-availability basis.

All tours depart from and return to the Duke Energy Convention Center, Main Entrance—5th and Elm Streets. Please plan to arrive at least 15 minutes prior to the tour departure time.

Sunday, May 1
Cincinnati City Tour
1:00 pm–4:00 pm
$40

Wednesday, May 4
Cincinnati Zoo “Behind the Scenes” Tour
10:00 am Departure
$35

Guest Package
$220
The Guest Package includes tickets for:
• The Cincinnati Tour on Sunday, May 1
• The receptions held in the Expo Hall Sunday–Tuesday evenings
• The Annual Business Meeting Breakfast on Tuesday, May 3

If you have not already purchased this package, please see the Registration Desk for availability.

Student Activities

Student Common Interest Group (CIG) Lunch and Mentor Program

Start developing your professional network through the Mentor Program!

All students are invited to enjoy a free lunch on Wednesday, May 4 at 12:00 pm in Room 263-264 as part of the Student CIG business meeting and mentor program. A number of active members from academia, industry, and government have volunteered to serve as mentors to AOCS student members. This is your chance to gain a professional contact and advice.

16th Annual Student CIG Silent Auction

The AOCS Foundation hosts a silent auction on behalf of the students each year to help fund the scholarship programs. Stop by the auction to volunteer an hour of your time to help monitor the event. It’s not hard work and anyone can do it. It’s a good cause and a great way to start networking and building your professional contacts.

Antitrust Policy

The American Oil Chemists’ Society (the “Society”) intends to strictly comply with the antitrust laws of the United States, all state governments, and any other relevant governing authority (the “Antitrust Laws”), and in furtherance of this intention, proclaims the following Antitrust Policy:

I. The Society shall not be used in a manner which violates the Antitrust Laws, and members of the Society, in their capacity as representatives of the Society, shall not tolerate, encourage or participate in any activity which could reasonably be expected to result in a violation of the Antitrust Laws.

II. This policy shall apply to all membership, board, committee and other meetings of the Society, and all events attended by individual members of the Society in their capacity as representatives of the Society.

III. The Society recognizes that the Antitrust Laws make certain activities between industry participants unlawful, and the Society expressly prohibits participation in such activities at any event which the Society holds or sponsors, or by any member of the Society at any event in which such member participates as a representative of the Society. Such prohibited activities include the following:
   A. Non-competition, territorial division, or operationally restrictive agreements;
   B. Boycotting, blacklisting, or unfavorable reporting; or
   C. Discussion of these and other prohibited matters, including the following:
      i. Price, price fixing, price calculation, or price changes;
      ii. Costs;
      iii. Terms or conditions of sales;
      iv. Quote decisions;
      v. Discounts;
      vi. Product or service offerings; or
      vii. Production or sales volume, capacity or plans.

IV. In the course of any event in which activities or discussion threatens to border on a prohibited matter, any member, officer, director, employee or representative of the Society present at such event in such capacity shall request that the activity or discussion be terminated immediately, and if such termination does not immediately occur, such person shall seek recordation of the problem if appropriate, shall cease all participation in the event, and shall report the matter to the Society at the earliest possible opportunity.

V. A copy of this Antitrust Policy shall be given at least annually to each officer, director, member, representative, or employee of the Society, or any other party participating in the Society, and the Antitrust Policy shall be readily available at all membership meetings.
The Power of Grace™

Grace is a global supplier of specialty catalysts, adsorbents and additives for the petrochemical, pharmaceutical and renewable industries. Founded in 1854, Grace has operations in over 40 countries. Grace Davison offers TriSyl® silica for oil purification, edible oil and biodiesel applications, EnRich® catalysts for biodiesel and renewable diesel production and the Reveleris® flash chromatography system with RevealX™ technology for purification of challenging compounds such as oils and lipids.

Renewable Technologies portfolio:
- TriSyl® silica and EnPure® adsorbents for feedstock and biodiesel purification
- EnRich® catalysts for renewable fuels and chemicals
- EnSieve® molecular sieve for ethanol dehydration

Discovery Sciences portfolio:
- Reveleris® Flash Chromatography System with RevealX™ streamlines purification of non-chromophoric lipid based compounds
- Reveleris® Flash Cartridges deliver optimal separation, with superior resolution in the shortest time
- Alltech® 3300 ELSD detector outperforms RI and UV for lipid analyses

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Division Activities

AOCs Divisions provide a forum for individuals with similar interests to exchange ideas, develop programs and meetings, and publish related materials. Participation in Division functions is open to all meeting attendees, and anyone interested is encouraged to attend. Unless otherwise noted, Division events will take place at the Duke Energy Convention Center.

All Division Executive Steering Committee members will meet on Sunday morning, May 1:
- Incoming Chairpersons: 9:00–9:45 am, Room 234
- Incoming Vice Chairpersons: 10:00–10:45 am, Room 234
- Incoming Secretary-Treasurers: 11:00–11:45 am, Room 234

### Featured Speakers at Division Events

**Agricultural Microscopy Division**
- Luncheon Meeting: Patricia Ramsey, CDFA Retired, USA, will speak on “Let’s Break the Ice by Traveling Down Memory Lane.”

**Analytical Division**
- Dinner Meeting: Gary List, USDA, ARS, NCAUR, Retired, USA, Herbert J. Dutton Award Winner, “A Trip Down Memory Lane — A Tribute to Dr. Herbert J. Dutton, 1914–2006.”

### Division Activities

<table>
<thead>
<tr>
<th>Division</th>
<th>Roundtable</th>
<th>Networking Event(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Agricultural Microscopy</strong></td>
<td>Monday, May 2</td>
<td>Luncheon: Tuesday, May 3, 12:00–2:00 pm, Room 237</td>
</tr>
<tr>
<td></td>
<td>11:20 am–12:00 pm Room 235</td>
<td></td>
</tr>
<tr>
<td><strong>Analytical</strong></td>
<td>Tuesday, May 3</td>
<td>Reception: Tuesday, May 3, 6:30–7:30 pm, Pavilion Foyer</td>
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<tr>
<td></td>
<td>5:00–6:00 pm Room 200</td>
<td>Dinner: Tuesday, May 3, 7:30–9:30 pm, Rosewood (Both events at the Hilton Hotel)</td>
</tr>
<tr>
<td><strong>Biotechnology</strong></td>
<td>Tuesday, May 3</td>
<td>Reception: Tuesday, May 3, 6:30–7:30 pm, Pavilion Foyer</td>
</tr>
<tr>
<td></td>
<td>12:30–1:30 pm Room 211</td>
<td>Dinner: Tuesday, May 3, 7:30–9:30 pm, Caprice (Both events at the Hilton Hotel)</td>
</tr>
<tr>
<td><strong>Edible Applications Technology</strong></td>
<td>Tuesday, May 3</td>
<td>Reception: Monday, May 2, 6:30–7:30 pm, Pavilion Foyer</td>
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<tr>
<td></td>
<td>12:00–1:00 pm Room 233</td>
<td>Dinner: Monday, May 2, 7:30–9:30 pm, Pavilion (Both events at the Hilton Hotel)</td>
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<tr>
<td><strong>Food Structure &amp; Functionality Forum</strong></td>
<td>Tuesday, May 3</td>
<td>Luncheon: Monday, May 2, 12:00–2:00 pm, Room 250</td>
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<tr>
<td></td>
<td>11:30 am–12:30 pm Room 231</td>
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<tr>
<td><strong>Health and Nutrition</strong></td>
<td>Tuesday, May 3</td>
<td>Reception: Tuesday, May 3, 6:30–7:30 pm, Pavilion Foyer</td>
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<tr>
<td></td>
<td>12:30–2:00 pm Room 204</td>
<td>Dinner: Tuesday, May 3, 7:30–9:30 pm, Pavilion (Both events at the Hilton Hotel)</td>
</tr>
<tr>
<td><strong>Industrial Oil Products</strong></td>
<td>Monday, May 2</td>
<td>Luncheon: Monday, May 2, 12:00–2:00 pm, Room 263–264</td>
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<tr>
<td></td>
<td>4:00–4:30 pm Room 232</td>
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<tr>
<td><strong>Lipid Oxidation and Quality</strong></td>
<td>Tuesday, May 3</td>
<td>Networking Reception: Monday, May 2, 6:30–7:30 pm, Mezzanine</td>
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<tr>
<td></td>
<td>4:30–5:30 pm Room 201</td>
<td>Dinner: Monday, May 2, 7:30–9:30 pm, Rosewood (Both events at the Hilton Hotel)</td>
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<tr>
<td><strong>Phospholipid</strong></td>
<td>Monday, May 2</td>
<td>Reception: Monday, May 2, 6:30–7:30 pm, Pavilion Foyer</td>
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<tr>
<td></td>
<td>12:00–1:00 pm Room 202</td>
<td>Dinner: Monday, May 2, 7:30–9:30 pm, Pavilion (Both events at the Hilton Hotel)</td>
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<tr>
<td><strong>Processing</strong></td>
<td>Monday, May 2</td>
<td>Hospitality: Monday, May 2, 6:00–11:00 pm, Fountain Square Suite 1612 (at Hilton Hotel)</td>
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<tr>
<td></td>
<td>1:00–2:00 pm Room 207</td>
<td>Luncheon: Tuesday, May 3, 12:00–2:00 pm, Room 250</td>
</tr>
<tr>
<td><strong>Protein and Co-Products</strong></td>
<td>Tuesday, May 3</td>
<td>Reception: Tuesday, May 3, 6:30–7:30 pm, Pavilion Foyer</td>
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<tr>
<td></td>
<td>12:00–1:30 pm Room 203</td>
<td>Dinner: Tuesday, May 3, 7:30–9:30 pm, Pavilion (Both events at the Hilton Hotel)</td>
</tr>
<tr>
<td><strong>Surfactants and Detergents</strong></td>
<td>Monday, May 2</td>
<td>Networking Reception: Monday, May 2, 6:00–7:30 pm, Caprice  (at Hilton Hotel)</td>
</tr>
<tr>
<td></td>
<td>4:15–5:15 pm Room 206</td>
<td>Luncheon: Tuesday, May 3, 12:00–2:00 pm, Room 263–264</td>
</tr>
</tbody>
</table>
Biotechnology Division

Edible Applications Technology Division
Dinner Meeting (joint with Phospholipid Division): James K. Daun, AgriAnalytical Consulting, Canada, will give the Alton E. Bailey Award address, “Fuzzy Canola.”

Food Structure & Functionality Forum Division
Luncheon Meeting: Brent Murray, The University of Leeds, UK, will give a presentation entitled “Pickering Stabilization—Pain, Pleasure, and Particles in Fatty Foods.”

Health and Nutrition Division
Dinner Meeting (joint with Protein and Co-Products Division): Ellen Shanley, University of Connecticut, USA, will speak on “Fueling the Teen Machine: It’s Not Just About Ringing the Dinner Bell.”

Industrial Oil Products Division
Luncheon Meeting: Michael Haas, USDA, ARS, ERRC, USA, winner of the United Soybean Board’s Industrial Uses of Soybean Oil Award, will give a presentation entitled “21st Century Technology Discovery: The Pygmy Model vs. the Cro-Magnon Model.”

Lipid Oxidation and Quality Division
Dinner Meeting: The LOQ best paper award winner, K.H. Sabeena Farvin, National Food Institute, Technical University of Denmark, Denmark, will present “Antioxidant Activity of Potato Peel Extracts in a Fish–Rapeseed Oil Mixture and in Oil-in-Water Emulsions.”

Phospholipid Division
Dinner Meeting (joint with Edible Applications Technology Division): James K. Daun, AgriAnalytical Consulting, Winnipeg, Canada, will give the Alton E. Bailey award address, “Fuzzy Canola.”

Processing Division
Luncheon Meeting: Manuel G. Venegas, Procter & Gamble Chemicals Research and Development, USA, will speak on “Processing of Sustainable Surfactants—A Formulator’s Perspective.”

Protein and Co-Products Division
Dinner Meeting (joint with Health and Nutrition Division): Ellen Shanley, University of Connecticut, USA, will speak on “Fueling the Teen Machine: It’s Not Just About Ringing the Dinner Bell.”

Surfactants and Detergents Division
Luncheon Meeting: J. Keith Grime, JKG Consulting, USA, will speak on “Smart R&D: Making Choices to Manage Innovation in a Dynamic Global Economy.”

Section Events
Sections provide a mechanism for AOCS members and others residing in a specific geographic region to get together regularly to discuss common interests. Section activities can include short courses, conferences, and/or an annual meeting. Anyone interested is encouraged to attend the Section functions listed below. All Section events will be held at the Duke Energy Convention Center.

Section Council
Meeting: Wednesday, May 4, 7:30–9:00 am, Room 230.

Asian Section
Leadership Team Meeting: Wednesday, May 4, 8:30–9:30 am, Room 234

Canadian Section
Leadership Team Meeting: Monday, May 2, 11:00 am–12:00 pm, Room 234
Luncheon Meeting: Wednesday, May 4, 12:00–2:00 pm, Room 250

European Section
Leadership Team Meeting: Tuesday, May 3, 11:00 am–12:00 pm, Room 230
Networking Luncheon Meeting: Tuesday, May 3, 12:00–2:00 pm, Room 252
The recipients of the European Section Student Travel Grants, Behnoush Maherani from Institut National Polytechnique de Lorraine (INPL), France, and Derya Kahveci from Aarhus University, Denmark, will present their work at the luncheon.

Latin American Section
Leadership Team Meeting: Tuesday, May 3, 10:00–11:00 am, Room 236
Luncheon: Monday, May 2, 12:00–2:00 pm, Room 231

USA Section
Leadership Team Meeting: Tuesday, May 3, 5:00–6:00 pm, Room 234
Luncheon: Tuesday, May 3, 12:00–2:00 pm, Room 236
Vermont Dye, University of Illinois at Urbana-Champaign, USA, recipient of the Hans Kaunitz Award, will give the award address, “Role of Soybean Peptides on Human Health.”

2011 Division and Section Sponsors
The AOCS Division and Section leadership acknowledge and extend thanks to the following companies and organizations for their generous donations to support Division and Section programming at the Annual Meeting & Expo.

Agribusiness and Water Technology (AWT)
Air Products and Chemicals Inc.
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Reckitt Benckiser
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Shell Global Solutions (US) Inc.
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Spectral Service
Viterra Canola Processing

As of March 30, 2011
The AOCs Foundation is celebrating 25 years. 1986–2011

The AOCs Foundation raises funds on an ongoing basis through the Influencing Innovation Campaign, ensuring a steady source of funding to advance the AOCs Mission. So many advancements in the fields served by AOCs happened as a result of their connections in the AOCs global network of professionals.

Donations to the AOCs Foundation help AOCs to be able to provide you with:
- One-stop resource for high-quality information
- Networking and collaboration opportunities
- Connections to professionals around the world

Foundation Century Club
The AOCs Foundation gratefully acknowledges Foundation Century Club members. More than 500 members have joined since the program began in August 2007. See our distinguished list of Century Club Members at www.aocsfoundation.org/centuryclub.cfm. Don’t miss your chance to be a part of it! Visit the Foundation booth in the Expo Hall for more details.

Corporate Century Club
The Corporate Century Club is a great opportunity for our AOCs Corporate Members to make a donation to the Foundation when renewing their dues each year. Much like the Century Club, the Corporate Century Club will provide unrestricted funds to be used to advance the AOCs Mission. Lead the way and be a part of it! Visit the Foundation booth in the Expo Hall for more details.

Honored Students
The following firms and individuals have donated funds for AOCs Honored Students to attend this year’s Annual Meeting:

Anderson International Corporation
Nu-Chek-Prep Inc.

Thank you to AOCs Members who included a donation to Student Programs when paying dues. Appreciation is also extended to companies whose donations were received after the print deadline of March 1, 2011, for this program.
Be a Part of the Auction!

The AOCS Foundation is proud to again organize the Silent Auction, sponsored by the Student Common Interest Group (SCIG).

- Proceeds support student programs
- Bid generously on as many items as you like
- Auction starts on Sunday at 1:00 pm
- Bidding ends on Tuesday at 5:30 pm
- Visit the auction tables for bidding details
- Donations to the AOCS Foundation are tax-deductible

Visit the Silent Auction booth, located in the AOCS Pavilion, beginning Sunday and place your bids.

A special thank you to all companies, universities, and individuals who are helping to support the AOCS Foundation by donating their products and services, as well as bidding.

16th Annual Student CIG Silent Auction

Sponsored by the AOCS Foundation and Student Common Interest Group

This popular event begins at 1:00 pm on Sunday. (Please see Auction hours above.) Bid on as many items as you like. All proceeds are used to fund student programs such as awards, fellowships, and the Honored Students. The AOCS Foundation gratefully acknowledges and thanks the following organizations and individuals who donated products and services to the Auction.

- Agribusiness and Water Technology, Inc.—boxed golf balls
- Ag Processing, Inc.—duffle bag, golf balls, cooler, thermos, fleece blanket, flashlight
- ANKOM Technology—sport tec shirts
- AOCS Administration Staff—gift set
- AOCS Advertising & Sales Department—full page, four color ad in inform
- AOCS Press—select books
- AOCS Meetings Department—one full technical registration to the 103rd AOCS Annual Meeting & Expo, May 2012

- Archer Daniels Midland—logo wear, gifts
- BASF Corporation—golf bag, golf balls, towel, divots
- Buhler Inc.—backpack, watches, Swiss Army knives
- Bunge Oils Inc.—carving sets
- Cincinnati Cyclones (hockey)—autographed yearbook
- Cognis Corporation/QTA—e-reader
- CPM Roskamp Champion—black baseball caps, boxed golf balls
- Dionex Corporation—boxed gift sets
- Emery Oleochemicals LLC—Apple iPad
- Ms. Kimmy Farris—framed photography
- Frito-Lay, Inc.—gifts
- GEA Westfalia Separator, Inc.—golf shirt, fleece jacket
- Genencor, A Danisco Division—4GB flash drive, universal outlet adapter
- Graham Corporation—Apple iPod Nano
- Steve Hill (Kraft Foods)—gifts
- Ms. Connie Hilson—photography
- Frito-Lay, Inc.—gifts
- GE Westfalia Separator, Inc.—golf shirt, fleece jacket
- Genencor, A Danisco Division—4GB flash drive, universal outlet adapter
- Graham Corporation—Apple iPod Nano
- Steve Hill (Kraft Foods)—gifts
- Ms. Connie Hilson—photography
- K-State Alumni Association—commemorative ornament
- Kalsec, Inc.—golf balls, umbrella
- Mr. Cyril Klein (American Emu Association)—emu oil gift pack
- Körting Hannover AG—USB drive, flashlight, key light
- Dr. Carol Lammi-Keefe (LSU)—gifts
- Lipid Technologies LLC—Omega-3 blood testing kits
- Mr. Gary List—gifts
- Long Beach Convention & Visitors Bureau—culinary gift basket
- Ms. Amy Lopez—commemorative White House ornament
- Mikrolab Aarhus—painting
- Dr. Deland Myers—gifts
- Nealanders International Inc.—gift basket
- Mr. Keith Nelms—hand-carved walking stick
- Novozymes North America, Inc.—golf shirt, tie, umbrella
- Oils & Fats International—gifts
- Oils of Aloha—variety of lotions, cooking oils
- Oklahoma State University, Robert M. Kerr Food and Agricultural Products Center—gift basket
- Plant & Food Research—hat, vest, waterbottle, shirt
- Purac—electronic gift
- Rudolph Research Analytical—duffle bag, travel mugs
- Ms. Dawn Shepard—framed photography
- Spectral Service AG—Books
- Stratas Foods—Kindle, luggage folders
- Supelco, Inc.—SP2560 capillary column, logo wear
- Surface Chemists of Florida, Inc.—gifts
- Tsuno Food Industrial Co., Ltd.—gifts
- Wacker Chemical Corporation—Apple iPod Shuffle gift basket

Visit the Silent Auction booth, located in the AOCS Pavilion, beginning Sunday and place your bids.
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AOCS Annual Business Meeting

Tuesday, May 3 • 7:00–8:00 am • Grand Ballroom B

On Tuesday, May 3, at 7:00 am, the Annual Business Meeting of the AOCS will be held. This event is included in the fee for all full-technical registrants and for guests who have purchased the guest package. Single-day and non-technical registrants may purchase a ticket at the Registration Desk for $30.

AOCS President J. Keith Grime will present a brief address, followed by the announcement of incoming officers and the presentation of awards. Award winners will be recognized in the major AOCS award categories.

Keynote Address

Tuesday, May 3
8:00-8:45 am
Grand Ballroom B

A Petrochemical Perspective on Sustainability, the Role of the Chemical Industry, and the Competitive Position of the US Gulf Coast.

Robert Chouffot, General Manager, Higher Olefins and Derivatives, Shell Chemical LP, USA

Immediately following the AOCS Annual Business Meeting, Robert Chouffot will provide a robust view on sustainability and how key issues are being addressed, especially global warming. He states, “While products from the chemical industry reduce carbon dioxide intensity, we also need to continue to improve the efficiency of our own footprint.”

With key insights into the role of hydrocarbons in energy and feedstocks as alternative technologies emerge, Mr. Chouffot will also touch on the sustainability challenges of renewable feedstocks, and the competitive location of the US Gulf Coast for the manufacture of petrochemicals and surfactants.

Chouffot has been General Manager of Higher Olefins and Derivatives at Shell Chemical LP since November 2006 and is also the President of Shell Chemical LP, Shell Chemicals US Operating Company. Shell produces a range of higher olefins for use in detergents, polymers production, lubricants and industrial surfactants from plants globally.

Mr. Chouffot also serves as the Chair of the Board of Directors of the American Cleaning Institute and is a member of the International Council of Chemical Associations Energy and Climate Change Leadership Group.

Chouffot joined Shell at the Martinez refinery in California in 1982 and has held positions in both chemicals and oil products, including business, commercial, strategy, technical and operations management. He holds a BS and MS in Chemistry from the University of Kent at Canterbury, England, and an MBA from the University of Houston.

SOCIETY AWARDS

Gary R. List, USDA, ARS, NCAUR, USA, retired—A. Richard Baldwin Distinguished Service Award Winner

First presented in 1981, the A. Richard Baldwin Distinguished Service Award recognizes lengthy and distinguished service to AOCS and leadership within the Society. This award is sponsored by Cargill, Inc.

James A. Kenar, USDA, ARS, NCAUR, USA—Award of Merit Winner

The Award of Merit is presented for productive service to AOCS. Leadership in technical, administrative, or special committees and activities; outstanding service that has advanced the Society’s prestige, standing, or interests; and services not otherwise specifically recognized are considered.

2011 Awards Sponsors

As of March 1, 2011

AOCs thanks all award sponsors for their generous support. Sponsors make it possible for AOCS to recognize outstanding scientists, researchers, technicians, and students within the fats and oils community.

AkzoNobel, Inc.  International Lecithin & Phospholipid Society
American Cleaning Institute  Peter and Clare Kalustian Estate
Anderson International  Kraft North America
Corporation  National Biodiesel Board
Archer Daniels Midland  Nu-Chek-Prep, Inc.
Company  Nicholas Pelick
Bunge North America  Milton Rosen
Cargill, Inc.  Supelco, Inc.
Stephen S. and Lucy D. Chang United Soybean Board
Manuchehr (Manny) Eijadi
International Food Science Centre A/S
AOCS Fellow

Veteran AOCS members whose achievements in science entitle them to exceptionally important recognition or who have rendered unusually important service to the Society or to the profession are eligible for this honor. Candidates must have been an AOCS member for a minimum of 15 years.

2011 AOCS Fellows

William (Bill) W. Christie  
Formerly at The Scottish Crop Research Institute and consultant to Mylnefield Lipid Analysis, Scotland

Jesse E. Covey  
Retired, USA

Howard R. Knapp  
Big Sky Medical Research, P.C., USA

Keshun Liu  
USDA, ARS, Pacific West Area, USA

Kenkichi Oba  
Emeritus member of JOCS, retired, Japan

Andrew Proctor  
University of Arkansas, USA

Neil R. Widlak  
ADM Cocoa, USA

Corporate Achievement Award

The award recognizes industry achievements for an outstanding process, products, or contribution that has made the greatest impact on its industry segment. This year’s award recognizes NutraLease Ltd., Israel, for Novel Nano-Sized Self-Assembled Liquid (NSSL) carriers as delivery vehicles for improved solubilization and bioavailability.

SCIENTIFIC AWARDS

John L. Harwood, Cardiff University, Wales, United Kingdom—Supelco/Nicholas Pelick Research Award Winner

The Supelco/Nicholas Pelick Research Award honors significant original contributions in fats and oils research. The award is sponsored by Supelco Inc., Bellefonte, Pennsylvania, a subsidiary of Sigma Aldrich Corporation, and Past President Nicholas Pelick.

John Harwood will give the award address, “Fascinating Lipids: From Brain to Plants and Soil and Back to Brain,” on Tuesday, May 3, at 1:30 pm in Room 208.

Colin Ratledge, University of Hull, United Kingdom—Stephen S. Chang Award Winner

The Stephen S. Chang Award recognizes a scientist, technologist, or engineer who has made distinguished and significant accomplishments in basic research, either by one major breakthrough or by an accumulation of publications. This person’s creative efforts must have been utilized by industries for the improvement or development of food products related to lipids. The award was established by AOCS Past President Stephen S. Chang and his wife, Lucy D. Chang.

Colin Ratledge will give the award address, “A Portrait in (Microbial) Oils,” on Monday, May 2, at 1:30 pm in Room 208.

Raffaele Mezzenga, Swiss Federal Institute of Technology Zurich, Switzerland—AOCS Young Scientist Research Award Winner

The AOCS Young Scientist Research Award was established to annually recognize a young scientist who has made a significant and substantial research contribution in one of the areas represented by the Divisions of AOCS. This year, the award is sponsored by the International Food Science Centre A/S in Denmark.

Raffaele Mezzenga will give the award address, “Self-Assembly of Lyotropic Liquid Crystals: from Fundamentals to Applications,” on Monday, May 2, 9:00 am in the Lipid Structure—Fundamentals Session, Room 233.
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**DIVISION AWARDS**

**ANALYTICAL DIVISION**

Gary R. List, USDA, ARS, NCAUR, retired, USA—Herbert J. Dutton Award Winner

The **Herbert J. Dutton Award** is presented to a scientist who has made significant contributions to the analysis of fats and oils or for work that has resulted in major advances in the understanding of processes utilized in the fats and oils industry.

Gary List will give the award lecture, “A Walk Down Memory Lane: A Tribute to Dr. Herbert J. Dutton,” on Tuesday, May 3 as part of the Analytical Division Dinner, Rosewood Room, Hilton Cincinnati Netherland Plaza.

**Analytical Division Student Award**

Jenna C. Sullivan, Dalhousie University, Canada, will present “Identification of Volatile Oxidation Products Responsible for Off-Flavors in Oxidized Fish Oil,” in the General Analytical II Session on Wednesday, May 4, Room 200.

Hieu Sy Vu, Kansas State University, USA, will present “Acylated Monogalactosyldiacylglycerols: Their Detection and Possible Biological Roles in Plant Stress Responses” in the Lipidomics and Metabolic Analysis Session on Monday, May 2, Room 212.

**BIOTECHNOLOGY DIVISION**

**Biotechnology Division Student Paper Award**

Michael S. Greer, University of Alberta, Canada, will present “Putative Regulation of *Brassica napus* Diacylglycerol Acyltransferase 1 (DGAT1) Mediated by its N-terminal Domain,” in the Plant Lipid Biotechnology Session on Wednesday, May 4, Room 211.

Nantaprapa Nantiyakul, University of Nottingham, United Kingdom, will present “Tocochromanols and γ-Oryzanol-Associated Components of Rice Bran and Rice Bran Oil Bodies,” in the Biotechnology Poster Session on Monday, May 2, Expo Hall A.

Ran Ye, University of Tennessee, USA, will present “Improved Bioreactor Design and a Mathematical Model for Solvent-Free Lipase-Catalyzed Synthesis of Saccharide-Fatty Acid Ester in Suspension Media,” in the Biobased Materials: Surfactants, Polymers, and Enzymes in Green Cleaning Session on Wednesday, May 4, Room 205.

**EDIBLE APPLICATIONS TECHNOLOGY DIVISION**

Nurhan T. Dunford, Oklahoma State University, USA—Timothy L. Mounts Award Winner

The **Timothy L. Mounts Award** recognizes research accomplishments relating to the science, technology, or applications of edible oils or derivatives in food products. The award is named after Timothy L. Mounts, a distinguished scientist and leader in the Society who made numerous contributions to the science and technology of edible fats and oils. The award is sponsored by Bunge North America.

Nurhan Dunford will give the award lecture, “Physical and Chemical Properties and Oxidative Stability of Whey Protein Encapsulated Fish Oil As Affected by Encapsulation Method,” on Wednesday, May 4, 2:00 pm in the General Edible Applications Session, Room 233.

**Edible Applications Technology Division Student Award of Excellence**

HEALTH AND NUTRITION DIVISION

Deborah A. Diersen-Schade, Mead Johnson Nutrition, USA—Ralph Holman Lifetime Achievement Award

The Ralph Holman Lifetime Achievement Award recognizes outstanding performance and meritorious contributions to the health and nutrition interest area. The award is named after Ralph Holman in recognition of his lifetime service to the study of essential fatty acids.

Deborah Diersen-Schade will give the award lecture, “Putting Together the Pieces,” on Tuesday, May 3, 4:40 pm in Lipid Modulators and Messengers Session, Room 204.

Health and Nutrition Division Student Excellence Award

Justine M. Tishinsky, University of Guelph, Canada, will present “Fish Oil Prevents High Fat Diet-Induced Impairments in Adiponectin and Insulin Response in Rodent Skeletal Muscle,” in the General Nutrition I Session on Wednesday, May 4, Room 204.

INDUSTRIAL OIL PRODUCTS DIVISION

Victor M. Arredondo Michael S. Gibson Angella C. Daniels


The ACI/NBB Glycerine Innovation Award recognizes outstanding achievement for research into new applications for glycerine with particular emphasis on commercial viability. The award is sponsored by the American Cleaning Institute (ACI) and the National Biodiesel Board (NBB).

Victor M. Arredondo will give the award lecture, “Identifying New Uses of Glycerine—Production of a Renewable Amino Alcohol,” on Tuesday, May 3, 4:20 pm in the New Glycerol Uses Session, Room 232.

Michael J. Haas, USDA, ARS, ERRC, USA—United Soybean Board’s Industrial Uses of Soybean Oil Award Winner

United Soybean Board’s Industrial Uses of Soybean Oil Award

This award recognizes outstanding research into new industrial applications or uses for soybean oil. The award is sponsored by the United Soybean Board (USB).

Michael Haas will give the award lecture, “21st Century Technology Discovery: The Pygmy Model vs. the Cro-Magnon Model,” on Monday, May 2, as part of the Industrial Oil Products Division Luncheon, Room 263–264.

Industrial Oil Products Division Student Award

Emmanuel Revellame, Mississippi State University, USA, will present “Lipid Storage Compounds in Raw and Enhanced Activated Sludges,” in the Biobased Lubricants, Plasticizers, and Value-Added Products Session on Monday, May 2, Room 232.

LIPID OXIDATION AND QUALITY DIVISION

The Edwin Frankel Award for Best Paper in Lipid Oxidation and Quality is presented annually to the author(s) of the best paper relating to lipid oxidation and quality published during the past year in AOCS Press publications.

This year’s recipients are K.H. Sabeena Farvin, Nina Skall Nielsen, and Charlotte Jacobsen for their article published in JAOCs vol. 87: 1319–1332, entitled “Antioxidant Activity of Potato Peel Extracts in a Fish-Rapeseed Oil Mixture and in Oil-in-Water Emulsions.” The award will be presented during the Lipid Oxidation and Quality Division Dinner on Monday, May 2, Rosewood Room, Hilton Cincinnati Netherland Plaza.

PHOSPHOLIPID DIVISION

The Phospholipid Division Best Paper Award is presented annually to the author(s) of the best paper relating to phospholipids published during the past year. This award is sponsored by the International Lecithin & Phospholipid Society.

This year’s recipients are Kosuke Shimizu, Tomoko Ida, Haruhiro Tsutsui, Tomohiro Asai, Kazumasa Otsubo, and Naoto Oku for their article published in Journal of Agricultural and Food Chemistry vol. 58:11218-11225, entitled “Anti-Obesity Effect of Phosphatidylinositol on Diet-Induced Obesity in Mice.” The award will be presented during the Phospholipid Division Dinner on Monday, May 2, Pavillion Room, Hilton Cincinnati Netherland Plaza.
**PROCESSING DIVISION**

**Processing Division Distinguished Service Award**
The award recognizes and honors an individual who has shown outstanding, meritorious service to the oilseed processing industry or to the Processing Division over a substantial amount of time.

This year’s award is presented to Robert C. Hastert, retired, USA. The award will be presented during the Processing Division Luncheon on Tuesday, May 3, Room 250.

**Processing Division Student Excellence Award**
Zul Ilham, Kyoto University, Japan, will present “Biodiesel and Value-added Glycerol Carbonate from Supercritical Dimethyl Carbonate,” in the General Processing Session on Wednesday, May 4, Room 260-261.

**PROTEIN AND CO-PRODUCTS DIVISION**

The ADM Protein and Co-Products Division Award recognizes outstanding papers published each year in AOCS Press publications on topics of engineering/technology and chemistry/nutrition of protein and co-products. The award is sponsored by the Archer Daniels Midland Company. The awards will be presented at the Protein and Co-Products Division Dinner on Tuesday, May 3, Pavillion Room, Hilton Cincinnati Netherland Plaza.

**Chemistry/Nutrition Category**
This year’s recipients in the chemistry/nutrition category are De-Bao Yuan, Wei Min, Xiao-Quan Yang, Chuan-He Tang, Ke-Li Huang, Jian Guo, Jin-Mei Wang, Na-Na Wu, Heng-Guang Zheng, and Jun-Ru QI for “An Improved Isolation Method of Soy β-Conglycinin Subunits and Their Characterization.” (JAOCS vol. 87:997-1004)

**Engineering/Technology Category**
This year’s recipients in the engineering/technology category are Lili T. Towa, Virginie N. Kapchie, Catherine Hauck, and Patricia A. Murphy for “Enzyme-Assisted Aqueous Extraction of Oil from Isolated Oleosomes of Soybean Flour.” (JAOCS vol. 87:347-354)

**SURFACTANTS AND DETERGENTS DIVISION**

**Thomas W. Federle, the Procter & Gamble Company, USA—Samuel Rosen Memorial Award Winner**

The Samuel Rosen Memorial Award recognizes a significant advancement or application of the principles of surfactant chemistry. The award is sponsored by Milton Rosen to recognize his father, Samuel Rosen, who worked as an industrial chemist on the formulation of printing inks for more than 40 years.

Thomas Federle will give the award lecture, “Everything that You Always Wanted to Know about the Biodegradation of Surfactants: The What, the Why, and the How,” on Tuesday, May 3, 1:40 pm in the Fundamental Principles and Applications of Surfactants Science: Special Session in Honor of Prof. Milton Rosen, Room 206.

**Surfactants and Detergents Division Distinguished Service Award**
The award recognizes and honors an individual who has shown outstanding, meritorious service to the oilseed processing industry or to the Surfactants and Detergents Division over a substantial amount of time.

This year’s award is presented to Terri Germain, Oxiteno, USA. The award will be presented during the Surfactants and Detergents Division Luncheon on Tuesday, May 3, Room 263-264.

**The American Cleaning Institute Distinguished Paper Award** is presented annually to the author(s) of the best technical paper appearing during the preceding year in the Journal of Surfactants and Detergents (JSD), a publication of AOCS Press. The American Cleaning Institute sponsors the award.

This year’s recipients are Taisuke Banno, Kazuo Kawada, and Shuichi Matsumura for “Creation of Novel Green and Sustainable Gemini-type Cationics Containing Carbonate Linkages,” (JSD vol. 13:387–398). The award will be presented during the Surfactants and Detergents Division Luncheon on Tuesday, May 3, Room 263-264.

**Surfactants and Detergents Division Student Travel Award**
Chodchanok Attaphong, The University of Oklahoma, USA, will present “Vegetable Oil Reverse Micelle Microemulsion as an Alternative Renewable Biofuel Using Extended Surfactant,” in the General Surfactants and Detergents I Session on Monday, May 2, Room 200.
Maysam Sodagari, The University of Akron, USA, will present “Rhamnolipid Production and Purification,” in the Biobased Materials: Surfactants, Polymers, and Enzymes in Green Cleaning Session on Wednesday, May 3, Room 205.

SECTION AWARDS

James K. Daun, Agri-Analytical Consulting, Canada—Alton E. Bailey Award Winner

The Alton E. Bailey Award recognizes outstanding research and exceptional service in the field of lipids and associated products. The award commemorates Alton E. Bailey’s great contributions to the field of fats and oils as a researcher, an author of several standard books in the field, and a leader in the work of the Society. Archer Daniels Midland Company and Kraft North America co-sponsor the award.

James Daun will give the award address “Fuzzy Canola” at the Edible Applications Technology Division Dinner on Monday, May 2, Pavilion Room, Hilton Cincinnati Netherland Plaza.

Vermont Dia, University of Illinois at Urbana-Champaign, USA—Hans Kaunitz Award Winner

The Hans Kaunitz Award recognizes the outstanding performance and merit of a graduate student within the geographical boundaries of the USA Section of AOCS.

Vermont Dia will give the award address “Role of Soybean Peptides on Human Health” at the USA Section luncheon on Tuesday, May 3, Room 251.

STUDENT AWARDS

AOCS Honored Student Awards, supported by contributions from members as well as companies in the industry, recognize graduate students at any institution of higher learning who are conducting research in any area of science dealing with fats and lipids and who are interested in the areas of science and technology.

The Manuchehr (Manny) Eijadi Award recognizes the outstanding merit and performance of an Honored Student. The award is supported by donations in honor of Manuchehr (Manny) Eijadi, a distinguished and active member of AOCS.

The Peter and Clare Kalustian Award also recognizes the outstanding merit and performance of an Honored Student. The award is supported by the Kalustian estate.

Honored Student and Peter and Clare Kalustian awards to Chelsey L. Castrodale, University of Arkansas, USA, for the poster presentation “Oxidative Stability of Conjugated-Linoleic-Acid—Rich Soy Oil,” in the Lipid Oxidation and Quality Poster Session on Tuesday, May 3, Expo Hall A.

Honored Student award to Gamage Anoma P. Chandrasekara, Memorial University of Newfoundland, Canada, for the paper presentation “Millet Phoenolics as Natural Antioxidants in Food and Biological Systems,” in the General Nutrition II Session on Wednesday, May 4, Room 204.

Honored Student award to Bingcan Chen, University of Massachusetts, USA, for the paper presentation “Role of Reverse Micelles on Lipid Oxidation: Impact of Phospholipids on Antioxidant Activity of α-tocopherol and Trolox in Stripped Soybean Oil,” in the Lipid Oxidation Challenges and Potential Solutions in Food Systems II Session on Monday, May 2, Room 201.

Honored Student award to Michael S. Greer, University of Alberta, Canada, for the paper presentation “Putative Regulation of Brassica napus Diacylglycerol Acanthyltransferase 1 (DGAT1) Mediated by its N-terminal Domain,” in the Plant Lipid Biotechnology Session on Wednesday, May 4, Room 211.
Award Winners

Honored Student and Manuchehr Eijadi awards to **Sumit K. Kiran**, University of Toronto, Canada, for the paper presentation “Development of Thermodynamic Correlations to Predict the Stability of Emulsified Formulations,” in the Film, Emulsions, and Foams Session on Tuesday, May 3, Room 205.

Honored Student award to **Jenna C. Sullivan**, Dalhousie University, Canada, for the paper presentation “Modeling the Kinetics of Fish Oil Oxidation,” in the Omega-3 Challenges: Stability, Processing, and Human Nutrition Session on Wednesday, May 4, Room 201.

Honored Student award to **Justine M. Tishinsky**, University of Guelph, Canada, for the paper presentation “Fish Oil Prevents High Fat Diet-Induced Impairments in Adiponectine and Insulin Response in Rodent Skeletal Muscle,” in the General Nutrition I Session on Wednesday, May 3, Room 204.

Honored Student award to **Tanushree Tokle**, University of Massachusetts, USA, for the paper presentation “Physicochemical Properties of Lactoferrin-Stabilized Oil/Water Emulsions: Effect of pH, Salt, and Heating,” in the Film, Emulsions, and Foams Session on Tuesday, May 3, Room 205.

Honored Student award to **Huaixia Yin**, Louisiana State University, USA, for the paper presentation “Evaluating a Combined Adsorption Process for Purifying Salmon (Oncorhynchus nerka) Oil,” in the General Oxidation Session on Wednesday, May 4, Room 201.

Honored Student award to **Swapnil Rohidas Jadhav**, The City College of The City University of New York USA—Ralph H. Potts Memorial Fellowship Award Winner

The **Ralph H. Potts Memorial Fellowship Award**, sponsored by AkzoNobel, commemorates the career of Ralph H. Potts, a pioneer in the development of industrial fatty acids and their derivatives.

Swapnil Jadhav will present “Multifunctional Green Surfactants from Crops,” in Biobased Materials: Surfactants, Polymers, and Enzymes in the Green Cleaning Session on Wednesday, May 4, Room 205.
Technical Program

Search for Abstracts
Visit one of the computer kiosks located in the AOCS Pavilion in the Expo Hall to search for and print abstracts for any of the technical presentations.

Copies of Papers—Many of the papers presented during the meeting will appear in AOCS Press publications or other journals in the future. However, it is impossible to know whether or when a specific paper will be published. If you want a copy of an individual presentation, please contact the author directly.

Presentation Ownership—Presentations at the meeting were prepared by and are the sole property of each presenter. Speakers have been given the AOCS guidelines for developing effective presentations and it is their responsibility to follow these guidelines.

Publication of Papers—AOCS reserves the first publication rights to all papers presented by speakers at this meeting. Speakers who wish to publish elsewhere must contact Jack Wolowiec, Area Manager, Publications (jackw@aocs.org), at AOCS headquarters for permission. The AOCS encourages, but does not require, speakers to submit their papers to AOCS for publication in inform, JAOCS, Lipids, or the Journal of Surfactants and Detergents (JSD). Speakers who wish to publish in JAOCS, Lipids, or JSD should visit the AOCS Press website at www.aocs.org/press/journals for more details. To submit a paper to inform, contact Kathy Heine, Managing Editor, at kheine@aocs.org.

Speaker Information
Speaker Ready Room
Room 209

Laptop computers and an audio-visual technician will be available to speakers during the following hours:
Sunday, May 1 .................................................. 12:00–6:00 pm
Monday, May 2 .................................................. 7:00 am–6:00 pm
Tuesday, May 3 .................................................. 8:00 am–5:00 pm
Wednesday, May 4 ............................................ 7:00 am–2:00 pm

- Laptop computers (PC) will be provided for all technical sessions, and speakers are expected to utilize PowerPoint for their presentations.
- Bring your file on CD or memory stick directly to the session room approximately 30 minutes prior to the start of the session.
- Audio-visual technicians and the session chair will be available to assist you.
- We recommend you delete the file from the computer after you give your presentation.

Customize Your Annual Meeting Experience

Build Your Schedule by Interest Area
The Annual Meeting program is divided into 12 interest areas. Within those interest areas, each session addresses a specific topic. See the insert for the list of topics within each area.

What’s Your Fats & Oils Focus?
If you prefer to attend sessions with a certain professional focus, the chart on the pages 30–32 will help you design your schedule.

- Analysis
- Enzyme & Chemical Reactions
- Formulation
- Health
- Nonfood Uses
- Nutrition
- Process & Manufacturing
- Safety
- Structure/Function
- Sustainability
<p>| AM 1: Agricultural Microscopy I |
| ANA 1 / BIO 1: Lipidomics and Metabolic Analysis |
| ANA 1.1 / S&amp;D 1.2: Advances in Analytical Methods for Surfactants and Detergents |
| BIO 1.1: Biocatalysis I |
| EAT 1: Lipid Structures–Fundamentals |
| FS&amp;FF 1: Food-Body Interactions |
| H&amp;N 1: Mark Bieber Memorial Symposium: Childhood Obesity—Understanding and Implications of a National Epidemic |
| IOP 1: Alternative Fuels |
| LOQ 1: A Re-examination of the Antioxidant “Polar Paradox” Paradigm |
| LOQ 1.1: Lipid Oxidation Challenges and Potential Solutions in Food Systems I |
| PHO 1: Phospholipids in Pharma and Cosmetic Applications |
| PRO 1: Safety, Operational Cost Reductions at Plant Level |
| PRO 1.1: Algal Oil Processing |
| PCP 1: Co-Product Utilization from Biofuels |
| S&amp;D 1: Emerging Technologies in Industrial Applications of Surfactants |
| S&amp;D 1.1: Emerging Surfactant Applications |
| S&amp;D 1.3: General Surfactants and Detergents I |
| AM 2 / PRO 2.1: Food and Feed Safety |
| ANA 2: Advances in Spectroscopic Techniques |
| BIO 2: Oil-based Biofuels |
| EAT 2: Lipid Structures–Applications |
| FS&amp;FF 2: Phase Transitions: Engineering and Stability |
| H&amp;N 2: Lipids and Inflammation |
| IOP 2: Biobased Lubricants, Plasticizers, and Value-Added Products |
| LOQ 2: Lipid Oxidation Challenges and Potential Solutions in Food Systems II |
| PHO 2: Structured Lipids and Phospholipids |
| PRO 2: New Technologies/Hot Topics in Processing |
| PCP 2: Alternative Plant Food Proteins and Co-Products |
| S&amp;D 2: Surfactants and Performance Enhancers for Fabric Care: Polymers to Chelating Agents |
| S&amp;D 2.1: General Surfactants and Detergents II |
| POSTER VIEWING AND EXHIBIT RECEPTION |</p>
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New Products on Display at the AOCS Press Bookstore

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*Edible Oleogels: Structure and Health Implications*  
Alejandro Marangoni and Nissim Garti, Editors

*Food Safety Management Systems* CD-ROM

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*Temas Selectos en Aceites y Grasas, Volumen 3 Aplicaciones*  
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Oral Presentations

Abstracts are published in the Abstract Book which is included in your meeting portfolio. The speaker is the first author listed or otherwise indicated with an asterisk (*)

Monday Morning

AM 1: Agricultural Microscopy I

Chairs: P. Ramsey, California Dept. of Food and Agriculture (Retired), USA; and G. Kobata, California Dept. of Food and Agriculture, USA

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7:55 Introduction.

8:00 Ethical Lapses and Ignorance in the Formulation, Labeling, and Marketing of Technical Nutritional Products. L.D. Bunting, ADM Alliance Nutrition, USA.

8:40 Case Studies in Forensic Entomology. N.H. Haskell, Saint Joseph's College, USA.

9:20 Science in Murder: A Look at the Multiple Scientific Disciplines used When Conducting a Routine Forensic Entomology Analysis using the Life Cycles of Calliphorids. N.H. Haskell, Saint Joseph's College, USA.

10:00 Forensic Microscopy: The Science of Trace Evidence. S. Paleink, Microtrace LLC, USA.

10:40 A Microscopy Staining Procedure to Assess Bran Removal Patterns. D.F. Wood, T.J. Siebenmorgen, T.G. Williams, W.J. Orts, and G.M. Glenn, USDA, ARS, WRRC, USA, University of Arkansas, Dept. of Food Science, USA.

ANA 1/BIO 1: Lipidomics and Metabolic Analysis

This session sponsored in part by Alberta Innovates PhytoLab Centre

Chairs: W.C. Byrdwell, USDA, ARS, USA; and R. Weselake, University of Alberta, Canada

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7:55 Introduction.

8:00 Plant Lipidomics to Identify the Roles of Lipids in Plant Stress Responses. R. Welti1, H.S. Vu1, M. Roth1, P. Tamura2, S. Shiva3, S. Sarowar3, V. Nalam4, G. Klossner5, K. Lorenc Kukula6, M. Li4, G. Gadbury6, J. Shah6, and X. Wang7, Kansas State University, USA, University of North Texas, USA, University of Missouri at St. Louis, USA, Danforth Plant Science Center, USA.

8:40 Acylated Monogalactosyldiacylglycerols: Their Detection and Possible Biological Roles in Plant Stress Responses. H.S. Vu1 (Analytical Division Student Award Winner) R. Welti1, M. Roth1, P. Tamura2, S. Shiva3, S. Sarowar3, V. Nalam4, M. Li4, G. Gadbury6, J. Shah6, and X. Wang7, Kansas State University, USA, University of North Texas, USA, University of Missouri at St. Louis, USA, Danforth Plant Science Center, USA.

9:00 Carbon Flux Analysis in Oil Crops. I.A. Guschina1, M. Tang1, U.S. Ramli2, J.J. Salas3, P.A. Quant4, R.I. Weselake5, and J.L. Harwood6, Cardiff University, UK, Malaysian Palm Oil Board, Malaysia, CSIC, Spain, Oxford University, UK, University of Alberta, Canada.

9:40 Core Aldehydes of PtdCho as Possible Activators of Hydrolysis of Plasma Lipoproteins by Group IIA sPLA2. A. Kuikis, A. Ravandi, and W. Pruzanski, University of Toronto, Canada.

10:00 Rapid Characterization of Lipids by MALDI MS. J.O. Lay, Jr., J. Gidden, and R Liyange, University of Arkansas, USA.

10:20 Triple Parallel Mass Spectrometry (LC/MS3) Method for Lipidomic Analysis of Vitamin D and Plant Triacylglycerols in Dietary Supplement Capsules. W.C. Byrdwell, USDA, ARS, BNHRC, FCMDL, USA.

10:40 LC-MS/MS as a Tool for Probing Industrial Oil Biosynthesis in Seeds. J.M. Dyer1, T.R. Larson2, L. Whitehead3, A. Gilday4, C.R. Dietrich5, P. Yang6, J.M. Shockey7, C. Lu8, E.B. Cahoon9, and J.A. Graham9, USDA, ARS, US Arid-Land Agricultural Research Center, USA, Center for Novel Agricultural Products, University of York, UK, Donald Danforth Plant Science Center, USA, USDA, ARS, SRRC, USA, Dept. of Plant Sciences and Plant Pathology, Montana State University, USA, Center for Plant Science Innovation, University of Nebraska-Lincoln, USA.

11:00 Applying Genomics and Biotechnology to Design Soybeans for 21st Century Markets. R.F. Wilson, United Soybean Board, USA.

11:20 Sterol Glycosides in Various Plant Materials Reflect Unique Sterol Patterns. L. Nyström1, A. Schär2, and A.-M. Lampi3, ETH Zurich, Switzerland, University of Helsinki, Finland.

11:40 Biotechnological Approaches to Remove Cholesterol Components in Plant Oils. R. Mikkelsen1, J. Brunstedt1, B. Wittsiebren2, H. Pedersen3, L.B. Moller4, C. Poulsen5, M. Zargahi6, S. Madrid7, and K. Carlson8, Danisco, Denmark, Danisco USA, USA.

ANA 1.1/S&D 1.2: Advances in Analytical Methods for Surfactants and Detergents

Chairs: D. Scheuing, The Clorox Company, USA; and K. Ma, Cognis Corp., USA

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7:55 Introduction.

8:00 Quantifying Adsorption of Surfactants and Polyelectrolyte Complexes at the Solid-Liquid Interface by Quartz Crystal Microgravimetry with Dissipation. M.M. Knock, D.R. Scheuing, and M.I. Kinsinger, Clorox Technical Center, USA.


8:40 Applications of Fourier Transform Infrared Spectroscopy to Studies of Surfactant Behavior. D.R. Scheuing, Clorox Services Company, USA.

9:00 Application of LC-MS to Surfactant Analysis. D. Dabney, Stepan Company, USA.

9:20 Emerging Ambient Ionization Methods and Their Use to Characterize Substrate Modifications. I. Cotte-Rodriguez, The Procter & Gamble Co., USA.

9:40 Analytical Toolbox to Unveil Complex Mixtures of Surfactant-based Systems. M. Mangels1, J.A. Rojo2, B. Strife3, and K. Garber4, The Procter & Gamble Co., USA, Mason Business Center, Analytical GCO, USA.

BIO 1/ANA 1: Lipidomics and Metabolic Analysis

This session sponsored in part by Alberta Innovates PhytoLab Centre

Chairs: W.C. Byrdwell, USDA, ARS, USA; and R. Weselake, University of Alberta, Canada

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BIO 1.1: Biocatalysis I
Chairs: C.T. Hou, USDA, ARS, NCAUR, USA; and S.H. Yoon, KFRI, Korea

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8:15 Introduction.
8:20 Enzymatic Synthesis of Chiral Intermediates for Development of Drugs. R.N. Patel1,2 and S.J. Parekh1, SLRP Associates, LLC, USA, 3Unimar Remedies, Ltd., India.
8:40 Protein Engineering of Lipases to Alter Fatty Acid Selectivity. U. Bornscheuer, H. Brundiek, A. Evitt, and R. Kourist, Institute of Biochemistry, ETH Zurich, Switzerland.
9:20 Potential Metabolisms of Lactic Acid Bacteria for Functional Food Production and Probiotics. J. Ogawa1, S. Kishino1, A. Ando2, K. Yokozeki2, and S. Shimizu3, 4Division of Applied Life Sciences, Graduate School of Agriculture, Kyoto University, Japan, 5Research Division of Microbial Sciences, Kyoto University, Japan, 6Faculty of Bio-environmental Science, Kyoto Gakuen University, Japan.
9:40 Physiological Activities of Hydroxyl Fatty Acids. C.T. Hou1, S. Paul1, and S.C. Kang2, 3Renewable Product Technology Research Unit, NCAUR, ARS, USDA, USA, 4Dept of Biotechnology, Daegu University, Korea.
10:00 Production and Modification of Functional Phospholipids Using Enzyme Reaction System. S.H. Yoon, Korea Food Research Institute, Korea.
10:20 Development of Biomaterials and Biofuel from Oilseeds. T. McKeon, USDA, ARS, WRRIC, USA.
11:00 Bioconversion of Marine Carotenoids and their Health Functions. M. Hosokawa1, C.T. Hou2, K. Miyashita3, and M.-J. Yim4, 5Hokkaido University, Japan, 6NCAUR, ARS, USDA, USA.

FS&FF 1: Food-Body Interactions
Chairs: I. Applequist, CSIRO, Food and Nutritional Sciences, Australia; and M. Paques, Royal FrieslandCampina, The Netherlands

231
7:55 Introduction.
8:00 Chewing Simulator for Food Texture Studies. R. DeLong, L. Lin, Y. Heo, A. Fok, and W. Douglas, University of Minnesota School of Dentistry, USA.
8:20 Gelatin-based Emulsion Gels for Drug Release. G. Thakur2, M.A. Naqui1, and D. Rousseau4, 5Ryerson University, Canada, 6Indian Institute of Technology, India.
8:40 Salt Taste Intensity in Water-in-oil Emulsions Systems. M. Rietberg1, D. Rousseau2, M. Marom1, and L. Duizer1, University of Guelph, Canada, 3Ryerson University, Canada.

EAT 1: Lipid Structures—Fundamentals
Chairs: S. Narine, Trent University, Canada; and N. Garti, Hebrew University of Jerusalem, Israel

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7:55 Introduction.
8:00 Phospholipids-Embedded Fully Dilutable Liquid Nanostructures—Structure Reactivity Relationship. N. Garti, Casali Institute for Applied Chemistry, Hebrew University of Jerusalem, Israel.
8:20 TAG Isomers of Stearic and Oleic Acid: Symmetry-Induced Differences in Crystallization and Polymorphism. S. Narine1, L. Bouzidi4, and N. Garti2, 3Trent Biomaterials Research Program, Trent University, Canada, 4Hebrew University of Jerusalem, Israel.
8:40 The Propensity of Individual TAG Species to Bind Oil: Influence of Symmetry and Chain Length Mismatch. S. Narine1, L. Bouzidi4, and N. Garti2, 3Trent Biomaterials Research Program, Trent University, Canada, 4Hebrew University of Jerusalem, Israel.
9:00 Self-assembly of Lyotropic Liquid Crystals: from Fundamentals to Applications. R. Mezzenga (Young Scientist Research Award Winner), ETH Zurich, Food & Soft Materials Science, Institute of Food Nutrition & Health, Switzerland.
9:40 Effects of Stereoscopic Isomerism and Racemization of Asymmetric Oleic-palmitic Mixed-acid Triacylglycerols (PPO and OPP). K. Sato1, T. Tanaka1, K. Sunakawa1, S. Ueno1, H. Mizobe1, T. Naga1, N. Hatakeyama1, K. Kojima1, K. Ichikawa1, and K. Tsurumi1, Hiroshima University, Japan, 1Tsukishima Foods Industry Co., Ltd., Japan.
10:00 Mechanical Properties of Ethylcellulose Organogels as Affected by Oil Composition, Surfactant Type and Concentration, and Polymer Molecular Weight. A. Zetzl, A.G. Marangoni, and S. Barbut, University of Guelph, Canada.
10:20 Scanning Microbeam Small-angle X-ray Diffraction Study of Gelator Crystals in Rice Bran Wax-vegetable Oil Organogels. L. Dassanayake1, D. Kodali1, S. Ueno1, and K. Sato1, Hiroshima University, Japan, 1Global Agritech, Inc., USA, 1University of Minnesota, USA.
H&N 1: Mark Bieber Memorial Symposium: Childhood Obesity—Understanding and Implications of a National Epidemic
This session sponsored in part by Martek Biosciences Corp.

Chairs: E. Bailey-Hall, Martek Biosciences Corp., USA; and M. Craig-Schmidt, Auburn University, USA

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7:55 Introduction.
8:00 The Epidemiology of Childhood Obesity in the US. C.L. Ogden, National Center for Health Statistics, CDC, USA.
8:40 Genetic and Environmental Factors Contributing to Childhood Obesity in the Hispanic Population. N.F. Butte, USDA, ARS, Children's Nutrition Research Center, Dept. of Pediatrics, Baylor College of Medicine, USA.
9:00 How Obesity Went to Our Heads: CNS Regulation of Food Intake and Body Weight. R.J. Seeley, Cincinnati Diabetes and Obesity Center Metabolic Diseases Institute, USA.
9:40 Neighborhood Greenness and Child Obesity. G.C. Liu, Indiana University School of Medicine, USA.
10:00 The 2010 Dietary Guidelines: Evidence-Based Recommendations for an Obese environment. R.C. Post, USDA, CNPP, USA.
10:20 The Food Industry and Its Response to Public Health Issues. R. Black, Kraft Foods, USA.
11:00 Eliminating Childhood Obesity One Step at Time. R. Lindstrom, America On the Move, USA.
11:20 Elevated Palmitoleic Acid Levels Improve Insulin Sensitivity. S.J.K.A. Ubhayasekera1, J. Staaf1, J. Bergquist1, A. Forslund1, and P. Bergsten2, 1Dept. of Physical and Analytical Chemistry, Uppsala University, Sweden, 2Dept. of Medical Cell Biology, Uppsala University, Sweden, 3Dept. of Women's and Children's Health, Uppsala University, Sweden.
11:40 Panel Discussion.

IOP 1: Alternative Fuels

Chairs: R. Dunn, USDA, ARS, NCAUR, USA; and R.W. Heiden, R.W. Heiden Associates LLC, USA

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7:55 Introduction.
8:00 Will Biodiesel Fuels Derived from Algae Perform? G. Knothe, USDA, ARS, NCAUR, USA.
8:40 Conversion of Algal Oil to Biodiesel via Heterogeneous Transesterification. D. Sams, Catilin, Inc., USA.
9:00 Characterization of Activated Sludge Oil Lipidic Components. P.J. Pham, R. Hernandez, E. Revelame, W.T. French, A.H. Mondala, R. Callahan, and J.D. Cain, Dave C. Swalm School of Chemical Engineering, Mississippi State University, USA.
9:20 The Use of Free Fatty Acids as Additives for Improving the Efficiency of the Supercritical Ethanol Transesterification of Vegetable Oils. I. Vieitez, B. Irigaray, P. Casullo, M.A. Grompone, and I. Jachmanián, Laboratorio de Grasas y Aceites, Departamento de Ciencia y Tecnología de los Alimentos, Facultad de Química, Universidad de la República, Uruguay.
9:40 Break.
10:00 Biodiesel Production by Direct Transesterification of Activated Sludge using Supercritical Methanol. A. Coker1, R. Hernandez2, T. French1, A. Iretski2, M. White1, E. Revelame1, and W. Holmes1, 1Mississippi State University, USA, 2Lake Superior State University, USA.
10:20 ZnO-based Heterogeneous Catalysts for the Second Generation of Biodiesel. S. Yan1, C. DiMaggio2, S. Mohan2, M. Kim3, H. Wang4, L. Yang3, 1KU, 2Multilab, 3University of Massachusetts, 4Wayne State University, USA.

LOQ 1: A Re-examination of the Antioxidant “Polar Paradox” Paradigm

Chairs: A. Richards, CSIRO, Food and Nutritional Sciences, Australia; E. Decker, University of Massachusetts, USA; and P. Villeneuve, CIRAD, France

201

7:55 Introduction.
8:00 The Many Facets of How Antioxidants can Impact Lipid Oxidation Reactions in Foods. E.A. Decker, University of Massachusetts, USA.
8:40 Evaluation of the Polar Paradox Based on Antioxidant Functionality in Various Food Systems. R. Nahas, Kalsec USA, USA.
9:00 Phenolics and Lipophilized Phenolics as Antioxidants in Fish Oil Enriched Emulsions. A.-D.M. Sørensen, N.S. Nielsen, and C. Jacobsen, Technical University of Denmark, National Food Institute (DTU Food), Denmark.
9:20 Hydroxytyrosol Fatty Acid Esters as Relevant Surfactants: a Potential Explanation for the Nonlinear Antioxidant Activity found in Oil-in-Water Emulsions. R. Lucas1, F. Comelles2, S. Lois3, D. Alcántara1, O. Maldonado4, M. Curcuzo1, J.L. Parra1, I. Medina1, and J.C. Morales*, 1Instituto de Investigaciones Químicas, CSIC – Universidad de Sevilla, Spain, 2Institut de Quimica Avançada de Cataluny, CSIC, Spain, 3Institut de Investigaciones Marinas, CSIC, Spain.
9:40 Cut Off Effect of Phenolipids in Emulsified, Cellular or Microbiological Systems. C. Bayrasy1, M. Laguerre2, C. Wnutniak-Cabello1, J. Lecomte1, J. Weiss2, S. Suriyarak3, B. Chabi2, G. Cabello2, E.A. Decker4, and P. Villeneuve*, 1CIRAD, Montpellier, France, 2INRA, University of Avignon, UMR408 Safety and Quality of Fishery, France, 3University of Hokenheim, Germany, 4University of Massachusetts, Food Science Dept., USA.

LOQ 1.1: Lipid Oxidation Challenges and Potential Solutions in Food Systems I

Chairs: X. Pan, Solae LLC, USA; and U. Nienaber, Kraft Foods Inc., USA

201

10:15 Introduction.
10:20 Model Emulsions as a Tool for Studying Antioxidant or Prooxidant Activities of Foods and Food Ingredients. C. Genot1, A. Meynier1, C. Dufour2, M Viau3, L. Riboult1, and O. Dangles2, 1INRA UR1268 Biopolymers Interactions Assemblies, France, 2INRA, University of Avignon, UMR408 Safety and Quality of Plant Products, France.
10:40 Effect of Plant-derived Extracts on Oxidative Stability of Food Emulsions. S.P.J.N. Senanayake, J. Erdmann, and C. Dorko, Danisco USA Inc., USA.
11:00 Antioxidant Activity of Fish Protein Hydrolysates in vitro Assays and in Oil-in-Water Emulsions. K.H.S. Farvin, L.L. Andersen, C. Jacobsen, H.H. Nielsen, and F. Jesen, Section for Seafood Research, National Food Institute (DTU Food), Technical University of Denmark, Denmark.

11:40 Influence of Cultivar on Antioxidant Profile and Content in Olive Leaves. M. Sypsa1,2, V. Van Hoed3, C. Van Poucke3, S. De Saeger4, A. Kirtsakis5, and R. Verhe6,7, 1Ghent University, Faculty of Bioscience Engineering, Dept. of Sustainable Organic Chemistry and Technology, Belgium, 2Ghent University, Faculty of Pharmaceutical Sciences, Belgium, 3Technological Educational Institution of Thessaloniki, Greece.

PHO 1: Phospholipids in Pharma and Cosmetic Applications
Chairs: M. Ahmad, Jina Pharmaceuticals, Inc., USA; and W. van Nieuwenhuyzen, Lecipro Consulting, The Netherlands

202
7:55 Introduction.
8:00 Cosmetic Applications of Lecithin-linker Microemulsions. E.J. Acosta, University of Toronto, Canada.
8:40 Synthesis of Well-Defined Amphiphilic Diblock Copolymers Having Biocompatible Phospholipid Polymer Sequences. S.-I. Yusa1, K. Fukuda1, K. Ishihara2, and Y. Morishima3, 1Dept. of Materials Science and Chemistry, Graduate School of Engineering, University of Hyogo, Japan, 2Dept. of Materials Engineering, School of Engineering, The University of Tokyo, Japan, 3Faculty of Engineering, Fukui University of Technology, Japan.
9:00 Rheological Characterization of Oil-Wax Gels for Cosmetics. Y. Miyazaki1, K. Yoshida1, and A. Marangoni2, 1Kao Corporation, Japan, 2Dept. of Food Science, University of Guelph, Canada.
9:20 Phospholipid Nanopharmaceuticals in Advanced Drug Delivery. H. Mansour, University of Kentucky College of Pharmacy, USA.

The Phospholipid Division Roundtable will take place at the conclusion of this session. All are welcome to attend and discuss plans for the Division’s 2012 Annual Meeting technical program.

PRO 1: Safety, Operational Cost Reductions at Plant Level
Chairs: J. Willits, Desmet Ballestra North America Inc., USA; and M. Snow, Bunge North America Inc., USA
260-261
7:55 Introduction.
8:00 Reducing Operational Costs by Improving Thermal Efficiency of the Refinery. J. Piazza and R. Jones, Alfa Laval Inc., USA.
8:40 Total Asset Reliability. D. Brooks, MRG Inc., USA.
9:20 Improving Operational Efficiency with Phospholipase C Enzymatic Degumming. T. Hitchman, Verenium Corporation, USA.
10:00 Don’t Pay the Price of Falls from Heights. E.C. Hamill, Bunge Canada, Canada.
10:40 Values Consequences in Animal Nutrition of Adjusting the Protein Dispersibility Index of Oilseed Meals. V. Perez, D. Hill, and L. Pordesimo, ADM Alliance Nutrition, USA.

PRO 1.1: Algal Oil Processing
Chairs: N. Dunford, Oklahoma State University, USA; and B. Yeh, Science Applications International Corporation, USA
262
7:55 Introduction.
8:00 The Rich Diversity of Lipid Distributions in Microalgae. J.K. Volkman, CSIRO Marine and Atmospheric Research, Australia.
8:40 Designer Triglyceride Oils and Renewable Chemicals. W. Rakitsky, Solazyme, USA.
9:00 Opportunities of Microalgal Oil in Foods. R.B. Draaisma1 and R.H. Wijffels2, 1Unilever Research & Development Vlaardingen, The Netherlands, 2Wageningen University, The Netherlands.
9:40 Commercial Application of Microalgae. B. Toyonaga1, D. Brune2, J.M. Carlb erg3, J.C. Levin4, M.J. Massingill5, G. Schwartz1, and J.C. Van Olst1, 1Kent BioEnergy Corporation, USA, 2University of Missouri, USA.
10:00 Next Generation Algae Extraction and Fractionation Technology. B. Goodall, SRS Energy, USA.
10:20 Supercritical Methanol Extraction of Algae. M. Tegen, Inventure Chemical, USA.

PCP 1: Co-Product Utilization from Biofuels
This session sponsored in part by Solae LLC
Chairs: J. Wanasundara, Agriculture and Agri-Food Canada, Canada; K. Liu, USDA, ARS, PWA, USA; and H. Wang, Iowa State University, USA
203
7:55 Introduction.
8:00 The Feed Opportunities from the Biofuels Industries: A Canadian Research Network. C.R. Christensen1, J. McKinnon1, T. McAllister2, R. Ziljstra1, A. Van Kessel1, D. Anweiller1, T. Fonstad2, J. Hobbs3, and S. Smyth4, 1University of Saskatchewan, Canada, 2Agriculture and Agri-Food Canada, Canada, 3University of Alberta, Canada, 4Saskatchewan Research Council, Canada.
8:20 Use of Enzymes to Improve Germ and Fiber Quality from Corn Dry Grind Fractionation Processes. V. Singh, E. Khullar, B.C. Vidal, K.D. Rausch, and M.E. Tumbleson, University of Illinois at Urbana-Champaign, USA.
8:40 Variation in Distillers Grains Quality and Investigation into Its Underlying Causes. K. Liu, USDA, ARS, USA.
9:00 Oxidative Stability of Distillers Grain Oils. J.K. Winkler-Moser, USDA, ARS, NCAUR, USA.
9:20 Ground Corn Processing to Food and Ethanol. T. Yunusov1, R. Barton1, and J. Hall2, 1Nutr-e Food Innovation Iowa, USA, 2Bio-NRG, USA.
9:40 Novel Co-products from Renewable Diesel Technologies. D.C. Bressler, University of Alberta, Canada.
10:00 In situ Esterification Studies for Biodiesel Production from Various Feedstocks. S. Yücel, Yildiz Technical University, Faculty of Chemical and Metallurgical Engineering, Dept. of Bioengineering, Turkey.
10:20 Cellulose Conversion Technologies for Utilization of Fiber-rich Corn Milling Co-products. Y.M. Kim1,2, R. Hendrickson1,2, E. Ximenes1,2, N.S. Mosier1,2, and M.R. Ladisch1, 1Dept. of Agricultural and Biological Engineering, Purdue University, USA, 2Laboratory of Renewable Resources Engineering, Purdue University, USA.
10:40 Integration of Ethanol and Value-added Co-products in a Lignocellulose Biorefinery. N.P. Nghiem, USDA ARS, ERRC, USA.
11:00 Triticale Distillers Grain Protein Extraction: A Possible Protein Source for Industrial Application. N. Bandara, L. Chen, and J. Wu, Dept. of Agricultural Food and Nutritional Science, University of Alberta, Canada.
### S&D 1: Emerging Technologies in Industrial Application of Surfactants

**Chairs:** M. Dahanayake, Rhodia, Inc., USA; and U. Weerasooriya, The University of Texas, USA

<table>
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<tr>
<th>Time</th>
<th>Session</th>
<th>Presenters</th>
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<tr>
<td>7:55</td>
<td>Introduction</td>
<td></td>
</tr>
<tr>
<td>8:00</td>
<td>Advanced Microemulsion Systems for Subsurface Remediation: Laboratory and Field Results</td>
<td>D.A. Sabatini, J.H. Harwell, B.J. Shiau, and R.C. Knox, University of Oklahoma, USA.</td>
</tr>
<tr>
<td>8:20</td>
<td>Surfactant Formulations for Chemical Flooding under High Salinity Reservoir Conditions</td>
<td>B.J. Shiau, P. Lohateeraparp, B.L. Roberts, and J.H. Harwell, School of Petroleum Engineering, University of Oklahoma, USA.</td>
</tr>
<tr>
<td>8:40</td>
<td>New and Novel Viscosifying Surfactants for Chemical Enhanced Oil Recovery</td>
<td>G. Degré, M. Morvan, M. Dahanayake, D. Pakenham, J. Bouillot, and A. Zaitoun, Rhodia, Laboratory of the Future, France, Rhodia, Bristol Research &amp; Technology Center, USA, Poweltec, France.</td>
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<tr>
<td>9:00</td>
<td>Non-alkaline Surfactant Formulations in Chemical EOR</td>
<td>U.P. Weerasooriya and G.A. Pope, The University of Texas, USA.</td>
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### S&D 1.1: Emerging Surfactant Applications

**Chairs:** R. Masters, Stepan Co., USA; and E. Acosta, University of Toronto, Canada

<table>
<thead>
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<th>Time</th>
<th>Session</th>
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<tr>
<td>10:00</td>
<td>Nanoporous Materials Formed via Microemulsion Polymerization</td>
<td>H.M. Cheung, University of Akron, USA.</td>
</tr>
<tr>
<td>10:40</td>
<td>Development of Functional Soft Materials from Surfactant/Biopolymer Mixtures</td>
<td>Y. Lapitsky, University of Toledo, USA.</td>
</tr>
<tr>
<td>11:00</td>
<td>Delivery of Surfactant-stabilized Zero-valent Iron Nanoparticle (nZVI) Suspension for Soil Remediation</td>
<td>Z. Wang and E. Acosta, University of Toronto, Canada.</td>
</tr>
<tr>
<td>11:20</td>
<td>Admicelle Formation and Adsolubilization using Ethoxy Carboxylate Extended Surfactants</td>
<td>N. Arpornpong, J. Levlomphaisan, A. Chareensanga, D.A. Sabatini, and S. Khoolzah, National Center of Excellence for Environmental and Hazardous Waste Management, Chulalongkorn University, Thailand, Team Consulting Engineering and Management Co., Ltd., Thailand, Schools of Civil Engineering and Environmental Science, University of Oklahoma, USA, Dept. of Environmental Engineering, Chulalongkorn University, Thailand.</td>
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S&D 1.2/ANA 1.1: Advances in Analytical Methods for Surfactants and Detergents

Chairs: D. Scheuing, The Clorox Company, USA; and K. Ma, Cognis Corp., USA

200

1:00 Introduction.

2:00 Salomonella Risk Assessment in Pet Food and Animal Feed Manufacturing—Factors to Consider. D.A. Hill1, L.A. Carrasquillo2, and F.T. Jones3, 1ADM Alliance Nutrition, Inc., USA, 2American Dehydrated Foods, Inc., USA, 3Performance Poultry Consulting, LLC, USA.

2:40 Melamine in the Feed and Food Chain. C.W. Cruywagen and T. Calitz, Stellenbosch University, South Africa.

3:20 FDA, Center for Veterinary Medicine Update. T. Schell, FDA, Center for Veterinary Medicine, USA.

ANA 2: Advances in Spectroscopic Techniques

Chair: T. Mason-West, Bunge, USA

200

1:55 Introduction.

2:00 E-Nose and TD GCMS on Oxidized Canola Oils. M.D. Evenson, J.A. Flook, T.G. Patterson, A. Syed, C.J. Kahl, and D.H. Meyer, Dow AgroSciences, USA.


2:40 Using Fourier Transform Near Infrared (FTNIR) in Evaluation of Monocacylglycerides and Propylene glycol monostearate in Edible Fats and Oils. G. Sekosan and T. West, Bunge North America, USA.

3:40 Analysis of Epoxidized Soybean Oil using Fourier Transform Near Infrared Spectroscopy (FT-NIR). H. Li1, M. Ochs2, and M. Gulden3, 1Bruker Optics, Inc., USA, 2CHS, Inc., USA.
3:40 Evaluation of FT-IR and FT-NIR Spectroscopies and Multivariate Calibration Models to Monitor Transesterification Reactions Progress. G. Güzel and X. Xu, Molecular Biology Institute & Aarhus School of Engineering, Aarhus University, Denmark.

EAT 2: Lipid Structures—Applications
Chairs: D. Nakhasi, Bunge Oils Inc., USA; and F. Orthoefer, FTO Food Research, USA

233
1:55 Introduction.
2:00 Evaluation of Low Saturate High Oleic Soybean Oil in Snack and Cracker Applications. R. Wilkes and L. Jurado, Monsanto Company, USA.
2:40 Formulation of Zero trans, Low Saturated and Nutritious Balance of Omega 9, 6, 3 Semi-solid Fat for Production of Digestive Cookies. F. Madadhnoee1, F.R. Modalal1,2, F. Karami1,2, H.R. Ghadri1, and H. Ebrahimi1, Agri-Industry & Veg. Oil of Mahidasht, Iran, 1Kesh Va Sanat Shamal, Iran, 2Minoo Cookies and Confectionary Company, Iran.
3:00 Enzymatic Interestereification for Functional Bakery Shortenings. B. Johnson, A. Bedford, and K. Hays, Bunge North America Inc., USA.
3:20 Practical Applications of Soymega™ (SDA Soybean Oil) into Food Products. J. Whittinghill, J. White, B. Lambach, D. Welsby, S. Lee, C. Lucak, and X. Pan, Solae, LLC, USA.
3:40 Practical Texture Measurement for the Food Industry. J.D. Guy and H. Shuman, Bunge North America, USA.

FS&FF 2: Phase Transitions: Engineering and Stability
Chairs: S. Martini, Utah State University, USA; and D. Rousseau, Ryerson University, Canada

231
1:55 Introduction.
2:00 Studies on Interaction of Milk Casein and Ovalbumin in the Presence of Fatty Acid Salts. N. Yuno-Ohta, M. Sawaki, and M. Endo, Junior College at Mishima of Nihon University, Japan.
2:20 The Structure of Solid Nanoplatelets in Molecular Fluids: Theoretical Models and Computer Simulation. D.A. Pink1, B.E. Quinn1, F. Peyronel2, N. Acevedo1, and A. Marangoni1, 1St. Francis Xavier University, Canada, 2University of Guelph, Canada.
2:40 Microstructure and Rheology of Butter: Effects of Cream Temperature Treatment. S. Rønholt, T.B. Pedersen, K. Mortensen, and J.C. Knudsen, University of Copenhagen, Faculty of Life Sciences, Denmark.

H&N 2: Lipids and Inflammation
This session sponsored in part by CNIEL and the National Dairy Council
Chairs: P.J. Huth, PJH Nutritional Sciences, USA; and M.-C. Michalski, INRA, France

204
1:55 Introduction.
2:00 JNK Activation, A Matter of Fat. A. Jaeschke, University of Cincinnati, USA.
2:20 The Role of Dietary Fatty Acids in Inflammation. P.M. Kris-Etherton and M. Flock, Dept. of Nutritional Sciences, Penn State University, USA.
2:40 Anti-inflammatory Effects of the Omega-3 Fatty Acids. J.W. Alexander, University of Cincinnati, USA.
3:00 Dietary Carbohydrate Restriction: Impact on Insulin Resistance, Fatty Acid Composition and Inflammation. J. Volek, University of Connecticut, USA.
3:20 Conjugated Linoleic Acid’s Anti-inflammatory Action in an Animal Model of Rheumatoid Arthritis. M.E. Cook1,2 and S.M. Huebner1, 1Dept. of
Inflammation Induced by Excessive Fat Intake: Role of Endogenous Endotoxin Absorption and Metabolism. M.C. Michalski1,2, E. Laugerette3, B. Benoit1, M. Alligier1, A. Gelenen1, S. Lambert-Porcheron1, R. Burello1, M. Laville1, and H. Vidal1, 3:40 INRA UMR223, France, INSA-Lyon, France, INSERM U870, France, Universite de Lyon, France, CRNH Rhone-Alpes, France, 42MR, France.

PHO 2: Structured Lipids and Phospholipids
This session sponsored in part by Spectral Service AG
Chairs: X. Xu, University of Aarhus, Denmark; and S. Ali, Jina Pharmaceuticls, Inc., USA

202

1:35 Introduction.


2:20 Chemo-Enzymatic Synthesis of Polymerizable Structured Lipids. V. Mannam and D.G. Hayes*, University of Tennessee, USA.

2:40 Enzymatic Production of Commercial Structured Lipids. T.K. Yang, Wilmar Global R & D Center, China.

3:00 Biocatalytic Route to Surface Active Lipid. L.-Z. Cheon and X. Xu, Dept. of Molecular Biology, Aarhus University, Denmark.

3:20 Production of Structured Lipids from Different Plant Oils Containing Conjugated Linolenic Acid Originated Bitter Gourd and Pomegranate Seed Oils. H.A. Aksoy, G. Ustun, and M. Tutur, Istanbul Technical University Chemical Engineering Department, Turkey.

3:40 Nutraceutical Effects of Structured Lipids. M. Ghosh and A. Sengupta, University of Calcutta, India.

PRO 2: New Technologies/Hot Topics in Processing
Chairs: R. Narayanan, Ag Processing Inc., USA; and G. Hatfield, Bunge Canada, Canada

260-261

1:55 Introduction.

2:00 Development of a Soy-Based, High Oleic Oil for Food. S. Knowlton, DuPont Company, USA.


2:40 New Approaches for Chlorophyll Removal in Oil Processing. K. Carlson1, R. Mikkelsen2, and J. Borch Soe2, 1Danisco USA, USA, 2Danisco A/S, Denmark.

3:00 Use of Nano Reactors in Edible Oil Processing. W. De Greyster1, M. Kellens1, T. Kemper1,2, and J. Wiltz1,2, Desmet Ballestra Group, Belgium, Desmet Ballestra North America, USA.

3:20 Development and Launch of a Fully Biodegradable Margarine Container from Renewable Resources: Case Study. S. Rumsey, Bunge Brasil, Brazil.

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PRO 2.1/AM 2: Food and Feed Safety
Chairs: G. Ideus, Archer Daniels Midland Co., USA; and G. Graul, Bunge Oils Inc., USA

262
1:55 Introduction.
2:00 Salmonella Risk Assessment in Pet Food and Animal Feed Manufacturing—Factors to Consider. D.A. Hill1, L.A. Carrasquillo2, and F.T. Jones1, 1ADM Alliance Nutrition, Inc., USA, 2American Dehydrated Foods, Inc., USA, 3Performance Poultry Consulting, LLC, USA.

2:40 Melamine in the Feed and Food Chain. C.W Cruywagen and T. Calitz, Stellenbosch University, South Africa.

3:20 FDA, Center for Veterinary Medicine Update. T. Schell, FDA, Center for Veterinary Medicine, USA.

PCP 2: Alternative Plant Food Proteins and Co-Products
This session sponsored in part by Solae LLC
Chairs: R. Aluko, University of Manitoba, Canada; and T. Yunusov, NFI Iowa, USA

203
1:55 Introduction.
2:00 Proteins of Chickpea and Lentils for Meat Industry Applications. J. Wanasundara1, T. Sanjeewa1, K. Argyre2, and P. Shand1, 1Agriculture and Agri-Food Canada, Canada, 2University of Saskatchewan, Canada.


2:40 Potential Utilization of Quinoa Seed Proteins and Hydrolysates as Functional Food Ingredients. R. Aluko, University of Manitoba, Canada.

3:00 Relationship between Chain Conformation and Electrospinnability of Prolamin Proteins. Y. Wang and L. Chen, Dept. of Agricultural, Food and Nutritional Science, University of Alberta, Canada.

3:20 Are Gluten “Free” Grains Such as Soy, Rice, Millet, etc. Actually Gluten Free from Rye, Barley or Wheat Cultivars? T. Grace, Bia Diagnostics, USA.

S&D 2: Surfactants and Performance Enhancers for Fabric Care: Polymers to Chelating Agents
Chairs: S. Adamy, Church & Dwight Co Inc., USA; and R. Panandiker, The Procter & Gamble Co., USA

206
1:55 Introduction.
2:00 Advances in More Sustainable Polymers. A. Carrier, K. Rodrigues, M. Hazlewood, and M. Vanderhoof, Akzo Nobel Surface Chemistry, USA.

2:20 New Performance Additives for Fabric Care. G.S. Miracle1, R.R. Dykstra1, B.J. Loughnane1, A. Chieffi2, and A.T. Broker2, 1The Procter & Gamble Company, USA, 2The Procter & Gamble Company, UK.

2:40 Silicone Foam Control Technology Enables Sustainable Cleaning in High-Efficiency (HE) Machines. S. Creutz2, K. Everaere1, B. Hénault1, J. Roïd1, and M. Severance4, 1Dow Corning Corporation, USA, 2Dow Corning S.A., Belgium, 3Dow Corning GmbH, Germany.

3:00 Specialty Additives for Superior Performance and Sustainability. M. Busby and I. Tomlinson, Dow Chemical, USA.


3:40 Properties of EDTA Based Novel Carboxylate Anionic Gemini Surfactants. R. Tyagi, Jaypee University of Engineering and Technology, India.

S&D 2.1: General Surfactants and Detergents II
Chairs: B. Lin, Dial Corp./Henkel, USA; and M. Tsumadori, Kao Corp., Japan

205
1:55 Introduction.
2:00 The Relationship between Mechanism of Hydrophilic and Hydrophobic Particle Removal in Laundry Detergency. S. Rojvoranun1, S. Chavadej1, J.F. Scamehorn2, and D.A. Sabatini2, 1The Petroleum and Petrochemical College, Chulalongkorn University, Thailand, 2The University of Oklahoma, USA.


3:00 Understanding Cleaning Formulations Based on Microemulsion Phase Behavior. M. Dreja1, A. Klemmer2, and R. Strey2, 1Henkel AG & Co. KGaA, Germany, 2University of Cologne, Germany.

3:20 Carboxymethyl Inulin: A Vegetable-based Ingredient for Liquid Laundry Detergents. J. Kolpa1, S. Verrett*1, and G. Bonnechère2, 1Thermphos USA, USA, 2Thermphos International, Belgium.

3:40 Mixtures of Anionic Surfactants with Nonionic Surfactants from Renewable Resources. L. Jackson, I. Plesant, and B. Grady, University of Oklahoma, USA.

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9:00 am–12:00 pm • Room 205

Fragrance Innovation in Today’s Consumer Products.
Organizer: Carolina Rojas, Scientist, AMCOL International Corporation, USA.

9:00 Scents of Style—Fragrance Trends—Past, Present, and Future. Debbie Nencheck, Vice President of Marketing, Fragrances, Takasago International Corporation USA, USA.


10:20 Break


9:00 am–12:00 pm • Room 201

Interdependency of AOCS Disciplines: Sustainable Technologies for Consumer and Industrial Use.
Organizers: Steve Balkan, Director of Research, Church & Dwight, USA; and Jeffrey J. Scheibel, The Procter & Gamble Company, USA.

9:00 Introduction. Steve Balkan, Director of Research, Church & Dwight, USA; and Jeff Scheibel, The Procter & Gamble Company, USA.

9:10 Glucaric Acid—A Platform Chemical Whose Time has Come. Jim Stoppert, CEO, Rivertop Renewables™, USA.

9:45 Innovative Products for Biobased Solutions. Shireen S. Baseeth, ADM Company, USA.

10:20 Break


11:10 Next Generation Oleochemical Products. Wei Huang VP, Process Development and Engineering LS9, Inc., USA.

11:45 Discussion and Summary.

Also on Tuesday Morning

9:00 am

EXH 1: Exhibitor Showcase • Room 202
Chair: J. Dau, TMC Industries, USA

9:00 New Advances in the Use of Fourier Transform Spectroscopy for the Analysis of Oils, Fuels, and Nutraceuticals. B. Stefl, Cognis Corporation, now a part of BASF, USA.

9:15 Dequest PB, A Natural Based Polymer for Laundry Applications. J. Kolpa, Thermophos USA, USA.


10:15 Pilot Scale Extraction of Microalgae Oil at POS Bio-Sciences. R.C. Green, POS Bio Sciences, Canada.

10:30 New Highly Reactive Biobased Polyols for Polyurethane Applications. R. Heggs and M. Dürchholz, Battelle, USA, Emery OleoChemicals LLC, USA.

10:45 Nature’s Solution for Effective Cleaning with L (+) Lactic Acid. R. Wietting, Purac, USA.

11:00 RevealX™ Technology Improves Purification of Lipid Compounds by Flash Chromatography. K. Lawrence, K. Chodavarapu, B. Winckley, and R. Rose, Grace, USA.

11:15 A New Category of Enzymes to Improve Stain Removal in Detergents. S. Friis-Jensen, Novozymes, Denmark.

11:30 Chemical Analysis of Commercial Detergent and Home Care Products. F. Pala, Battelle, USA.

11:45 Preparation Plant Equipment. R. Barton, N. Hunt Moore/CPM Roskamp Champion, USA.
Tuesday Morning • Hot Topic Symposia

102nd AOCS Annual Meeting & Expo

9:00 am–12:00 pm • Room 206

Organizer: Pat Kearney, President and CEO, PMK Associates, Inc., USA.
Session Chairs: Patricia Kearney, President and CEO, PMK Associates, Inc., USA; and Mary LaGuardia, Omega-9 Oils Market Manager, Dow AgroSciences, USA.

9:00 Welcome and Introduction. Patricia Kearney, President and CEO, PMK Associates, Inc.; and Mary LaGuardia, Omega-9 Oils Market Manager, Dow AgroSciences, USA.

9:05 Global Dietary Recommendations on Fats: Where are we Headed? Peter Jones, Director of the Richardson Centre for Functional Foods and Nutraceuticals, Canada Research Chair in Functional Foods and Nutrition, University of Manitoba, Canada.

9:40 U.S Dietary Guidelines: Focus on Fatty Acids. Eric Rimm, Associate Professor in the Departments of Epidemiology and Nutrition, Harvard University, USA.


10:35 Innovation and Opportunities for Oil: What’s in the Pipeline for Function and Health? David Dzisiak, Commercial Leader Oils, Dow AgroSciences, Canada.

10:55 Insights from Manufacturing and Food Service. Darryl Mickler, Senior Director of Culinary Innovation, Brinker International, USA.


11:35 Panel Discussion/Mini Roundtable. All Speakers

9:00 am–12:00 pm • Room 204

Tough Topics to Teach.
Organizers: Andrew Proctor, Professor, University of Arkansas, USA; and Randall Weselake, Professor, University of Alberta, Canada.

9:00 Everything You Wanted to Know about Lipid Polymorphism, but Were Afraid to Ask. Alejandro Marangoni, Professor, University of Guelph, Canada.

9:30 Emulsions—Sometimes a Difficult Phase to Go Through. John Coupland, Associate Professor, Pennsylvania State University, USA.

10:00 Leveraging Research and Manufacturers’ Resources for Teaching Mass Spectrometry. Craig Byrdwell, Research Chemist, US Department of Agriculture, Agricultural Research Service, USA.

10:30 Lipid Oxidation Issues. Charlotte Jacobsen, Senior Scientist, Technical University of Denmark, Denmark.

11:00 Overcoming Difficulties Teaching the Lipid Chemistry/Lipid Nutrition Interface. Eric Murphy, Associate Professor, University of North Dakota, USA.

9:00 am–12:00 pm • Room 200

Vitamin D: New Dietary Intake Recommendations and Emerging Health Effects.
Organizer: Peter Huth, PJH Nutritional Sciences, USA.

8:55 Introduction.

9:00 The 2011 Dietary Reference Intakes (DRI) for Calcium and Vitamin D: Overview, Interpretation, and Applications. Patsy M. Brannon, Professor, Division of Nutritional Sciences, Cornell University, USA.

9:40 Vitamin D, Calcium, and Bone Health: Strength of the Evidence Towards the New DRIs. Connie M. Weaver, Professor and Head, Department of Foods and Nutrition, Purdue University, USA.

10:20 Vitamin D, Calcium, and Cancer: The Evidence and Research Opportunities. Steven K. Clinton, Professor, Division of Medical Oncology Program Leader, Molecular Carcinogenesis and Chemoprevention, OSE Comprehensive Cancer Center, USA, and Director, Prostate and Genitourinary Oncology, The James Cancer Hospital and Research Institute, USA.

11:00 Vitamin D and Cardiovascular Disease: What You Need to Know. Gregory A. Plotnikoff, Allina Center for Health Care Innovation, Abbott Northwestern Hospital, USA.

11:40 Panel Q & A.

Special thanks to the National Dairy Council for its financial support of this Hot Topic Symposium.

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Tuesday Afternoon

The Supelco/Nicholas Pelick Research Award Lecture

Chairs: L.M. Sidisky, Supelco, USA; and N. Pelick, Retired, USA

1:30

Fascinating Lipids: From Brain to Plants and Soil and Back to Brain. J.L. Harwood, School of Biosciences, Cardiff University, UK.

AM 3: Agricultural Microscopy II

Chairs: J. Makowski, Messiah College, USA; and K. Koch, Northern Crops Institute, North Dakota State University, USA

235

1:55 Introduction.
2:00 Microscopic Identification and Application of Common Macro and Micro Minerals in the Animal Feed Industry. E. Jacobsen, Prince Agri Products, Inc., USA.
2:40 Using Microscopy to Identify Adulterated Protein Feedstuffs. C.W. Cruywagen and T. Calitz, Stellenbosch University, South Africa.
3:20 Defining and Characterizing Limits of Detection for Qualitative Results: A Realistic Challenge? Study Case in Feed Microscopy for PAPs Detection. P. Veys1,2, C. Belinchón Crespo1,2, and B. Baeten1,2, 1European Reference Laboratory for Animal Proteins in Feedingstuff s, Belgium, 2Walloon Agricultural Research Centre, Belgium.

ANA 3: Emerging Analytical Issues in Process Contaminants—The Search for Truth

Chairs: J.D. Pinkston, The Procter & Gamble Company, USA; and M.W. Collison, Archer Daniels Midland Co., USA

200

1:55 Introduction.
2:20 Advances in LC-MS Analysis of Glycidyl Esters. M. Blumhorst and M. Collison, Archer Daniels Midland Company, USA.
2:40 Quantitation of 3-MCPD Esters and Glycidyl Esters via Stable Isotope Dilution Analysis. M. Granvogl1 and P. Schieberle1,2, 1Technical University of Munich, Chair for Food Chemistry, Germany, 2German Research Center for Food Chemistry, Germany.
4:00 Indirect Determination of Bound Glycidol and MCPP in Refined Oils. J. Kuhlmann, SGS Germany GmbH, Germany.

ANA 3.1/LOQ 3: Antioxidants and Oxidation Control: Analytical Methodologies and Efficacies

Chairs: D. Luthria, USDA, ARS, USA; and F. Shahidi, Memorial University of Newfoundland, Canada

201

1:55 Introduction.
2:00 Efficacy and Measurement of Antioxidants. F. Shahidi, Dept. of Biochemistry, Memorial University of Newfoundland, Canada.
2:20 Comparison of Extraction Solvents on Assay of Phenolics Form Foods. D. Luthria, USDA, ARS, ERRC, USA.
2:40 Extraction and Analysis of Soluble and Bound Fruit Polyphenols. L. Howard and B. White, University of Arkansas, Dept. Food Science, USA.
3:00 Challenges with Antioxidant Analysis: Strengths and Weaknesses. W. Ellefson and D. Sullivan, Covance Laboratories, USA.
3:20 Can Antioxidant Activity Assays be Redirected to Guide Stabilization of Foods with Natural Compounds? K.M. Schaich, Rutgers University, USA.
4:00 Methods for Assaying Antioxidants in Lipids and Emulsion Systems. D. Huang, Dept. of Chemistry, National University of Singapore, Singapore.

BIO 3/H&N 3.1: Functional Lipids—Bioactive Properties

This session sponsored in part by Danisco USA Inc.

Chairs: R. Moreau, USDA, ARS, ERRC, USA; and R.J. Ostlund, Washington University in St. Louis, USA

212

1:55 Introduction.
2:00 An Overview of Functional Lipids. R.A. Moreau, USDA, ARS, ERRC, USA.
2:20 Lutein and Zeaxanthin: Dietary Sources, Bioavailability and Bioactivity. M.G. Ferruzzi, Purdue University, USA.
2:40 Phytosterols. R.J. Ostlund, Washington University in St. Louis, USA.
3:00 Enzymatic Production of Betapol™ and Other Structured Lipids. C.C. Akoh, University of Georgia, USA.
3:20 Break.
3:40 Nutritional Characteristics of Diacylglycerol Oil. T. Yanagita, Saga University, Japan.
4:00 EPA and DHA-rich Oils. N. Salem, Martek Biosciences, USA.
4:20 α-Tocotrienol: The Natural Vitamin E Against Stroke. C.K. Sen, Ohio State University, USA.
4:40 Medium Chain Triglycerides. P.J.H. Jones, Richardson Centre for Functional Foods and Nutraceuticals, University of Manitoba, Canada.

BIO 3.1: Biocatalysis II

Chairs: C.T. Hou, USDA, ARS, NCAUR, USA; and K. Miyashita, Hokkaido University, Japan

211

1:55 Introduction.
2:00 Separation of Nutraceutical Glycolipids. M. Suzuki1, T. Takahashi1, S. Watanabe1, L. Tanaka1, Y. Haruta1, M. Shiota1, M. Hosokawa1, and K. Miyashita**, 1Faculty of Fisheries Sciences, Hokkaido University, Japan, 2Megmilk Snow Brand Co., Ltd., Japan.
2:40 Plant PAHs Complement the pah1 Mutation in Saccharomyces cerevisiae. E. Mietkiewska1, R.M.P. Siloto1, J. Dewald2, S. Shah1, D.N. Brindley2, and R.J. Weselake**, 1Dept. of Agricultural, Food and Nutritional Science;
University of Alberta, Canada, 1Dept. of Biochemistry; University of Alberta, Canada, 2Plant Biotechnology, Alberta Innovates-Technology Futures, Canada.

3:00 Enzymatic Analysis of Linoleic Acid Transformation to Conjugated Linoleic Acid in Lactobacillus plantarum. S. Kishino1,2, K. Yokoike1, S. Shimizu1, and J. Ogawa1, 1Industrial Microbiology, Graduate School of Agriculture, Kyoto University, Japan, 2Applied Microbiology, Division of Applied Life Sciences, Graduate School of Agriculture, Kyoto University, Japan.


3:40 Enzymatic Synthesis and Characterization of trans-free Structured Margarine Fat Analog Using Stearidonic Acid-enriched Soybean Oil and High Stearate Soybean Oil. G. Pande and C.C. Akoh, The University of Georgia.

4:00 Development and Application of Oleaginous Filamentous Fungus Mortierella alpina. A. Ando1, Y. Tanaka1, H. Kikukawa1, T. Okuda1, E. Sakuradani1, J. Shima1, J. Ogawa1, and S. Shimizu1,2, 1Kyoto University, Japan, 2Kyoto Gakuen University, Japan.

**EAT 3/S&D 3: Film, Emulsions, and Foams**

Chairs: A. Wright, University of Guelph, Canada; D. Kim, Kraft Foods Inc., USA; and C. Rojas, AMCOL, USA

1:55 Introduction.

2:00 The PIT Emulsification Process: Reality Versus Intuition. S.E. Friberg, Clarkson University, USA.

2:40 Design and Application of Functional Food-Grade Nanoemulsions. D.J. McClements, Dept. of Food Science, University of Massachusetts, USA.


3:40 Development of Thermodynamic Correlations to Predict the Stability of Emulsified Formulations. S.K. Kiran (Honored Student Award Winner and Manuechir (Manny) Ejadi Award Winner) and E.J. Acosta, University of Toronto, Canada.

4:00 Physicochemical Properties of Lactoferin-stabilized Oil/Water Emulsions: Effects of pH, Salt, and Heating. T. Tokle (Honored Student Award Winner) and D.J. McClements, University of Massachusetts Amherst, USA.

4:20 A Study of Polyaphon (Biliqueous Fluid) Systems. S.T. Adamy, Church & Dwight Co., Inc., USA.

4:40 Partial Coalescence Revisited. R. Ergun1, R.W. Hartel1, P. Spicer1, and P. Amor1, Food Science Department, University of Wisconsin-Madison, USA; 2The Procter & Gamble Co., USA.

**FS&FF 3: New Concepts for Food Structuring**

Chair: G. Yang, Kellogg North America Co., USA

1:55 Introduction.

2:00 Effect of Symmetric/Asymmetric Triacylglycerol Ratio on the Crystallization Behaviour and Storage Stability of Fat Blends. V. De Graef1, J. Vereecken1, K. Smith1, and K. Devésettinc1, Ghent University, Belgium, 2Fat Science Consulting, UK.

2:20 Triacylglyceride Fluids in Confined Spaces: Fluid Structures and Interactions on the Nanoscale. D.A. Pink1, F. Peyronel1, C. MacDougall1, A. Marangoni2, C. B. Hanna1, and S. Razul1, 1St. Francis Xavier University, Canada, 2University of Guelph, Canada, 3Boise State University, USA.

2:40 Crystallization Behavior of Anhydrous Milk Fat and Sunflower Oil Wax Blends. R. Kerr1, X. Tombokan1, S. Ghosh2, and S. Martini1, 1Dept. of Nutrition, Dietetics, and Food Sciences, Utah State University, USA, 2Brunner Optics Inc., USA.

3:00 Using High Intensity Ultrasound as a Tool to Change the Functional Properties of Interesterified Soybean Oil. Y. Ye, A. Wagh, and S. Martini, Utah State University, USA.

3:20 Influence of Shear and Cooling Rates on the Nano- and Micro-crystalline Morphology of Binary Mixtures of Fully Hydrogenated Soybean Oil and Soybean Oil. N. Acevedo, J. Block1, and A.G. Marangoni, University of Guelph, Canada.

3:40 The Crystallization and Solidification of an Edible Oil Organogel Under the Influence of Shear and Thermal Gradients. E.D. Co and A.G. Marangoni, University of Guelph, Canada.

4:00 The Role of Diffusive Path Tortuosity on Oil Migration through Cocoa Butter. F. Maleky and A.G. Marangoni, University of Guelph, Canada.

4:20 OSCAR: An Innovative Device to Measure Static Permittivities for the Quantification of Lipid Interactions. F. Peyronel1,4, I. Neeson2, D. Pink3,4, and A. Marangoni1,2, 1University of Guelph, Canada, 2VN Instruments, Canada, 3St. Francis Xavier University, Canada, 4Advanced Foods and Materials Network of Centres of Excellence, Canada.

**H&N 3: Lipid Modulators and Messengers**

This session sponsored in part by Avanti Polar Lipids, Inc. and Mead Johnson Nutrition

Chairs: H. Durham, Louisiana State University, USA; and E. Berdyshev, University of Illinois at Chicago, USA

1:55 Introduction.

2:00 Peroxisome Proliferator-activated Alpha Nuclear Receptors (PPAR-alpha) Provide a New Molecular Target for Treatment of Cognitive Impairment and Nicotine Dependence. S.R. Goldberg1 and S. Yasar2, 1NIDA, IRP, NIH, USA, 2Johns Hopkins University School of Medicine, USA.

2:40 Endocannabinoids and Cannabinoid Receptors: The Chicken and Egg Caveats in Nomenclature. A.C. Howlett, Wake Forest University Health Sciences, USA.

3:00 Endocannabinoid Signaling: A Promising Strategy for Pain Modulation. V. Seybold, University of Minnesota, USA.

3:20 Plasma Endocannabinoids and Inflammatory Markers During Pregnancy: Is There a Connection? H.A. Durham1, J.T. Wood2, N. Lam1, A. Tipler1, A. Makriyannis1, and C.J. Lammi-Keefe1, 1AgCenter, Louisiana State University, USA, 2Center for Drug Discovery, Northeastern University, USA.

3:40 Sphingolipid Signaling System in Deciding Survival: Rescue of Sphingosine Kinase-1 Knockout Phenotype in Cardiac Arrest through the Inhibition of Sphingosine-1-phosphate Lyase. E. Berdyshev, University of Illinois at Chicago, USA.

4:00 Short-term and Long-term Consequences of Inhibiting Endocannabinoid Catabolic Enzymes to Reduce Pain. A. Lichtman, Virginia Commonwealth University, USA.

4:20 Opposing Effects of Cannabinoid-1 and 2-receptors on Inflammation and Oxidative Stress: Implications for Tissue Injury. P. Pacher, National Institutes of Health, NIAAA, USA.

4:40 Putting Together the Pieces. D. Diener-Schade (Ralph Holman Lifetime Achievement Award Winner), Mead Johnson Nutrition, USA.
H&N 3.1/BIO 3: Functional Lipids - Bioactive Properties
This session sponsored in part by Danisco USA Inc.
Chairs: R. Moreau, USDA, ARS, ERRC, USA, and R.J. Ostlund, Washington University in St. Louis, USA

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1:55 Introduction.
2:00 An Overview of Functional Lipids. R.A. Moreau, USDA, ARS, ERRC, USA.
2:20 Lutein and Zeaxanthin: Dietary Sources, Bioavailability and Bioactivity. M.G. Ferruzzi, Purdue University, USA.
2:40 Phytosterols. R.J. Ostlund, Washington University in St. Louis, USA.
3:00 Enzymatic Production of Betapol™ and Other Structured Lipids. C.C. Akoh, University of Georgia, USA.
3:20 Break.
3:40 Nutritional Characteristics of Diacylglycerol Oil. T. Yanagita, Saga University, Japan.
4:00 EPA and DHA-rich Oils. N. Salem, Martek Biosciences, USA.
4:20 α-Tocotrienol: The Natural Vitamin E Against Stroke. C.K. Sen, Ohio State University, USA.
4:40 Medium Chain Triglycerides. P.J.H. Jones, Richardson Centre for Functional Foods and Nutraceuticals, University of Manitoba, Canada.

H&N 3.2/PHO 3: Applications of Phospholipids with n-3 Fatty Acids
This session sponsored in part by Spectral Service AG
Chairs: T. Wang, Iowa State University, USA; G. Wang, Cargill, USA; and J. Whittinghill, Solae, LLC, USA

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1:55 Introduction.
2:00 Nutritional Properties of Phospholipids with n-3 Fatty Acids. T. Wang, Iowa State University, USA.
2:40 Delivery of Bioactive Compounds through Milk Phospholipids Nanoliposomes. B. Farhang, Y. Kakuda, and M. Corredig, University of Guelph, Canada.
3:00 The Antioxidant Effect of Phosphatidylserine in Refined Fish Oil. A.J. Reid, S.M. Budge, and M. St Onge, Dalhousie University, Canada.
3:20 Extraction of Phospholipids from Egg Yolk: Effect of Solvent and Drying Treatment. H. Wang, L. Yao, and T. Wang, Center for Crops Utilization Research, Iowa State University, USA.
3:40 Role of Phospholipids Reverse Micelles on Lipid Oxidation: Impact of Minor Components on Physicochemical Properties of Stripped Soybean Oil. B.C. Chen, D.J. McClements, and E.A. Decker, Dept. of Food Science and Human Nutrition, Iowa State University, USA.
4:00 Efficient Enzymatic Synthesis of Phenolic Ester by Increasing Solubility of Phenolic Acids in Ionic Liquids. Z. Yang, Z. Guo, and X. Xu, Dept. of Molecular Biology, Aarhus University, Denmark.
4:20 Lipid Vesicles with High Entrapment Efficiency Prepared by Using Emulsions. S. Ichikawa, University of Tsukuba, Japan.

IOP 3: New Glycerol Uses
Chairs: T. Benson, Lamar University, USA; and D. Brown, HBI USA, USA

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1:55 Introduction.
2:00 Efficient Acrolein Production from Crude Glycerol Using Sub-/Supercritical Water Technology. X.P. Ye and L. Cheng, The University of Tennessee, USA.
3:00 Considerations on the Mechanism of Self-Condensation of Glycerol to Polyglycerol in Presence of Alkaline Catalysts. M. Ionescu, X. Wan, and Z. Petrovic, Pittsburg State University, Kansas Polymer Research Center, USA.
LOQ 3/ANA 3.1: Antioxidants and Oxidation Control:
Analytical Methodologies and Efficacies
Chairs: D. Luthria, USDA, ARS, USA; and F. Shahidi, Memorial University of
Newfoundland, Canada

PHO 3/H&N 3.2: Applications of Phospholipids with n-3
Fatty Acids
This session sponsored in part by Spectral Service AG
Chairs: T. Wang, Iowa State University, USA; G. Wang, Cargill, USA; and J. Whittinghill,
Sola, LLC, USA

PHO 3:1 Symposium on NMR in Lipids
Chairs: B. Diehl, Spectral Service AG, Germany; and G. Knothe, USDA, ARS, NCAUR, USA

PRO 3: Sustainability - Waste Utilization and Reduction
Chairs: M. Boyer, Agribusiness & Water Tech Inc., USA; B. Gursky, Oil-Dri Corporation,
USA; and L. Polak, Bunge North America, Inc., USA

PRO 3.1/EXH 2: Processing Exhibitor Presentations
Chairs: T. Neuman, GEA Westfalia Separator Inc., USA; and J. Piazza, Alfa Laval Inc.,
USA
PCP 3: Health Aspects of Food Proteins and Peptides
This session sponsored in part by Solae LLC
Chairs: H. Kumagai, Nihon University, Japan; and H. Ibrahim, Kagoshima University, Japan
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1:55    Introduction.
2:00    Casein Hydrolysates: Potential Bioactive Effects in Cultured Human Cells. N. O’Brien1, M. Phelan1, A. Aherne2, D. O’Sullivan2, and R. Fitzgerald3,1  University College Cork, Ireland; 2University of Limerick, Ireland.
2:20    Adding Value to Whey-How to Create Novel Bio-Functions in Whey Proteins and Peptides. A. Brodkorb, Teagasc Food Research Centre, Ireland.
2:40    Ovotransferrin and its Peptides Confer in vivo Resistance to Oxidative Stress. H. Ibrahim, Kagoshima University, Faculty of Agriculture, Japan.
3:00    Anti-fatigue Effect of Egg White Hydrolysate in Human Volunteers Mountain Climbing Test. H. Hatta1, N. Sugai2, M. Kim2, and S. Nakai1, Kyoto Women’s University, Japan; 3Pharmafoods International, Japan.
3:20    Cancer Anti-proliferative Activities of a Pentapeptide Derived from Rice Bran. A. Kannan and N. Hettiarachchy, University of Arkansas, USA.
3:40    Suppression of Postprandial Hyperglycemia by Cereal Protein. H. Kumagai, Nihon University, Japan.
4:00    In vitro Bile Acid Binding Properties of Lentil Proteins and Hydrolysates. J. Boye and C. Barbara, Agriculture and Agri-Food Canada, Canada.
4:20    Influence of Amino Acid Supplementation on Dietary β-conglycinin-dependent Reduction of Food Consumption and Modulation of Lipid Metabolism in Rats. K. Koba1, D. Oikawa2, S. Tamaru1, K. Tanaka1, and M. Sugano1, University of Nagasaki, Japan; 2Nagasaki University, Japan; 3Professor Emeritus, Kyushu University, Japan.
4:40    Impact of Extracellular Matrix Protein Hydrolysates on Human Health. K. Sato, Kyoto Prefectural University, Japan.

S&D 3/EAT 3: Film, Emulsions, and Foams
Chairs: A. Wright, University of Guelph, Canada; D. Kim, Kraft Foods Inc., USA; and C. Rojas, AMCOL, USA
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1:55    Introduction.
2:00    The PIT Emulsification Process: Reality Versus Intuition. S.E. Friberg, Clarkson University, USA.
2:40    Design and Application of Functional Food-Grade Nanoemulsions. D.J. Mc Clements, Dept. of Food Science, University of Massachusetts, USA.
3:40    Development of Thermodynamic Correlations to Predict the Stability of Emulsified Formulations. S.K. Kiran (Honored Student Award Winner and Manuchehr (Manny) Eijadi Award Winner) and E.J. Acosta, University of Toronto, Canada.
4:00    Physicochemical Properties of Lactoferrin-stabilized Oil/Water Emulsions: Effects of pH, Salt, and Heating. T. Tokle (Honored Student Award Winner) and D.J. Mc Clements, University of Massachusetts Amherst, USA.
4:20    A Study of Polyaphron (Biliquid Foam) Systems. S.T. Adamy, Church & Dwight Co., Inc., USA.
4:40    Partial Coalescence Revisited. R. Ergun1, R.W. Hartel1, P. Spicer2, and P. Amar1, Food Science Department, University of Wisconsin-Madison, USA; 3The Procter & Gamble Co., USA.

S&D 3.1: Fundamental Principles and Applications of Surfactants Science: Special Session in Honor of Prof. Milton Rosen
Chairs: J. Scamehorn, University of Oklahoma, USA; and C. Choy, Seventh Generation, USA
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1:35    Introduction.
1:40    Everything that You Always Wanted to Know about the Biodegradation of Surfactants: The What, the Why, and the How. T. Federle (Samuel Rosen Memorial Award Winner). The Procter & Gamble Company, USA.
2:20    Transforming Surfactant Art to Surfactant Science. M.J. Rosen, Brooklyn College, USA.
3:00    New and Novel Gemini Surfactants as “Sustainable” Amphiphiles for the 20’s: Chemical Structure/ Fundamental Property/Performance Relationships. M. Dahianake1, D. Tracey2, R. Reiersson1, and M. Rosentr1, 2Rhodia, Inc., USA; 3Tracy Consulting, USA; 4Rhodia, Inc., USA; 5Surfactant Research Institute, USA.
3:20    Anionic and Cationic Surfactant Mixtures: Admixture Modified Surfaces and Microemulsion Formation. D.A. Sabatini, J.F. Scamehorn1, and S. Khodhair2, University of Oklahoma, USA; 3Chulalongkorn University, Thailand.
3:40    Thirty Years of Experience and Challenges with Emulsifiers’ Preparation and Applications - Full Spectrum Thinking and Performance. N. Garti, Casali Institute for Applied Chemistry, Hebrew University, Israel.
4:00    Biobased Surfactants from Renewable Resources. M.R. Infante, IQAC-CSIC, Spain.
4:20    An Experimental Study of Wetting Behavior and Surfactant EOR in Carbonates with Model Compounds. Y. Wu, Missouri University of Science & Technology, USA.

EXH 2/PRO 3.1: Processing Exhibitor Presentations
Chairs: T. Neuman, GEA Westfalia Separator Inc., USA; and J. Piazza, Alfa Laval Inc., USA
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1:55    Introduction.
2:00    Winterisation – Comparison of the Classical method and HF’s Combined Process. H.C. Boeck, Harburg-Freudenberger Maschinenbau GmbH, Germany.
2:20    New Drives for Separators and Decanters. T. Neuman, GEA Westfalia Separator, USA.
2:40    The New Sieve Tray Oil Stripper, Efficiency and Reliability. A. Subieta, Desmet Ballestra, USA.
3:40    Precise Control of Suspended Solids, Dissolved Solids, Clarity, and Color in Process Water and Oil using Specific Light Wave Technology. T. Schwalbach, Optek Inc., USA.
4:00    The Technology of Soybean Dehulling. C. Brockmeyer, Buhler Inc., USA.
4:20    Purification of Glycerin from Biodiesel Plants. P. Alasti, Artisan Industries Inc., USA.
4:40    The Next Generation of High Speed Separators - The Alfa Laval eDrive Author. J. Piazza, North America Vegetable Oil Technology, Alfa Laval Inc., USA.
Wednesday Morning

AM 4: Agricultural Microscopy III
Chairs: M. McCutcheon, West Virginia Dept. of Agriculture, USA; and C. Rogers-Kelly, Arkansas State University, USA

7:55 Introduction.
8:00 Zoo Nutrition and Its Complexities. B. Henry, Cincinnati Zoo and Botanical Garden, USA.

Following the session, a behind-the-scenes tour at the world famous Cincinnati Zoo is offered to complement the morning’s presentation. Check with the AOCS Registration Desk for more information.

ANA 4: General Analytical I
Chairs: V. Jain, Mars Chocolate North America, USA; and A. Proctor, University of Arkansas, USA

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7:55 Introduction.
8:00 Faster Techniques for Total Fat Determination in Various Food Products. P. Kopecka, F. Dabo, E. Gouveez, S. Marsemat Rodas, and P.-A. Golay, Nestle Research Center, Switzerland.
8:20 Purification of Stearidonic Acid (SDA) from Modified Soybean Oil by Argentation Silica Gel Open Column Chromatography. L. Kleiner-Shuhab, L. Vazquez, and C. Akoh, The University of Georgia, USA.
8:40 Determination of the Heptadecyl Fatty Acids of Thespesia populnea Seed Oil. M.K. Dowd, USDA, ARS, SRRC, USA.
9:20 A Simple, One-step, Quantitative Analytical Method for the Analysis of Triglycerides in Edible Oils and Other Natural Products. R. Freeman, T. Yuzawa, and C. Watanabe, Frontier Laboratories, USA, Frontier Laboratories, Japan.
9:40 Gas Chromatographic Quantification of Acetic Acid and Furfural in Lignocellulolyse Hydrolyzate Fermentations for Microbial Lipid Production. A. Mondala, R. Hernandez, T. French, D. Sparks, W. Holmes, M. Hauge, P. Pham, and W. Sweet, Dave C. Swalm School of Chemical Engineering, Mississippi State University, USA, Dept. of Biochemistry and Molecular Biology, Mississippi State University, USA, General Atomics, USA.
10:40 Effect of Different Silicates Clay Minerals on Decreasing the Mycotoxins in Food and Animal Feeds. S.M. Cham, I. Golmen, F. Bozoji, and O. Tokusoglu, Middle East Technical University, Turkey, University of The Gambia, The Gambia.
11:00 Impact of Processing on Oil Quality Evaluated by GCxGC-ToF-MS. A. Dusterloh, K. Volz, and N. MacFarlane, DSM Nutritional Products, Switzerland.

BIO 4/S&D 4: Biobased Materials: Surfactants, Polymers, and Enzymes in Green Cleaning
Chairs: D. Solaiman, USDA, ARS, ERRC, USA; D.G. Hayes, University of Tennessee, USA; and G. Smith, Huntsman Performance Products, USA

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7:55 Introduction.
8:00 Enhanced Stabilization of Cloudy O/W Emulsions with a Blend of Gum Arabic/Whey Protein Isolate. N. Garti, M. Klein, A. Aserin, and I. Svitov, Casali Institute for Applied Chemistry, Hebrew University, Israel.
8:20 Multifunctional Green Surfactants from Crops. S.R. Jadhav (Ralph Potts Memorial Fellowship Award Winner) and G. John, The City College of The City University of New York, USA.
8:40 Clickable Sophorolipid Surfactants. J.A. Zerkowski and D.K.Y. Solaiman, USDA, ARS, ERRC, USA.
9:20 Rhamnolipid Production and Purification. M. Sodagan (Surfactants and Detergents Division Student Travel Award Winner), Y. Chen, J. L. Lili, M. Pinzon, and L.-K. Ju, The University of Akron, USA.
10:00 Improved Bioreactor Design and a Mathematical Model for Solvent—Free Lipase—Catalyzed Synthesis of Saccharide—Fatty Acid Ester in Suspension Media. R. Ye and D.G. Hayes, Dept. of Biosystems Engineering and Soil Science, The University of Tennessee, USA.
10:40 Synthesis and Properties of Esterequats Derived from Rice Bran Fatty Acids and Triethanolamine. V.K. Tyagi and M. Gunjan, Harcourt Butler Technological Institute, India.
11:00 Surface-active and Performance Properties of Alkyl Polyglycoside (APG) Surfactants Derived from Fatty Alcohols. V.K. Tyagi and N. Sharma, Harcourt Butler Technological Institute, India.
11:20 Recent Developments in Cleaning with Cellulase Enzymes. N.J. Lant, A. Calvimontes, V. Dutschke, and S.G. Patterson, Procter & Gamble Technical Centres Ltd., UK, Leibniz Institute for Polymer Research, Germany, University of Twente, The Netherlands.

BIO 4.1: Plant Lipid Biotechnology
Chairs: D. Hildebrand, University of Kentucky, USA; and J. Shockey, ARS, USDA, NCAUR, USA

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7:55 Introduction.
8:00 New Omega-3 and Monounsaturated Fatty Acid Resources. D. Ildebrand, R. Li, Y. Wu, W. Jamboonsri, and T. Phillips, University of Kentucky, USA.
8:20 Oilseed Metabolic Engineering: Gene Discovery and Analysis of Factors that Affect Triacylglycerol Synthesis and Accumulation in Transgenic Plants. J. Shockey, X. Li, H. Cao, A. Ullah, K. Sethumadhavan, S. Boone, T. Klasson, J. Dyer, and E. Cahoon, USDA, ARS, SRRC, USA, ‘Center for Plant Science Innovation, Dept. of Biochemistry, University of Nebraska, USA, USDA, ARS, USDA, ARS Agricultural Research Center, USA.
8:40 Modifying the Oil Content of Soybean Seeds. A. Kinney and K. Meyer, DuPont, USA.

May 1–4, 2011 • Cincinnati, Ohio, USA
EAT 4/FS&FF 4: Cocoa Butter and Chocolate Structuring

Chairs: N. Widlak, ADM Cocoa, USA; and K. Dewettinck, Ghent University, Belgium

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7:55 Introduction.
8:00 Ultrasonic Characterization of Dispersions of Sugar in Vegetable Oil. U. Yucel and J.N. Coupland, The Pennsylvania State University, USA.
9:00 Chocolate Microstructure Influences Oil Migration Rates. D. Rousseau and M. Arduini, Ryerson University, Canada.
10:00 Determination by Synchrotron X-ray Microbeam of Local Compositions in a Spherulite Made by Two Triglycerides. G. Mazzanti, E. Ikeda, S. Ueno, and K. Sato, ‘Dalhousie University, Canada, ‘Hiroshima University, Japan.
10:40 Novel Utilization of Mahua (Madhuca longifolia) Seed Fat as Cocoa Butter Replacer from the Central India Region. B.P. Vibhute and A.S. Nagur University, India.
H&N 4: General Nutrition I

This session sponsored in part by Danisco USA Inc.

Chairs: R. Ward, Utah State University, USA; and A. Zhou, Utah State University, USA

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7:55 - 8:00 Introduction.

8:00 - 10:40 Effects of Dietary Milk Fat Globule Membrane on Tissue Lipid Metabolism and Related Gene Expression in Fischer-344 Rats. A.L. Zhou, R. Ward, and K. Hintze, Utah State University, USA.

10:40 - 11:00 Regulation of Hepatic Fatty Acids and Cholesterol Synthesis by Fucoidan. F. Beppu, T. Tsukui, M. Hosokawa, and K. Miyashita, Hokkaido University, Japan.

11:00 - 11:20 Effects of Dietary Plant Epidermal Wax on Insulin Resistance in KKAy Mice. N. Watanabe, Y. Takeo, M. Fujimoto, K. Fujimoto, Y. Takamura, and M. Takumi, Showa Women's University, Japan; Koriyama Women's University, Japan; Okinawa Sugar Canes Research Corporation, Japan; and Koyo Sangyo Co., Ltd., Japan.

9:00 - 9:20 Fish Oil Prevents High Fat Diet-induced Adaptations in Adiponectin and Insulin Resistance in Rodent Skeletal Muscle. J.M. Tishinsky (Honored Student Award Winner and the Health and Nutrition Division Student Excellence Award Winner), A.L. Zhou, K.L. Mullen, D.J. Dyck, and L.E. Robinson, University of Guelph, Canada.

9:20 - 9:40 Pattern Recognition for Discrimination of Dyslipidemic States. G. Dumanca's, L. Reilly, N. Purdie, and M. Kimani, Oklahoma State University, USA; Bethany College, USA.


10:20 - 10:40 Effect of Modulating both the Ratio and Concentration of Dietary PUFA on Inflammatory Cytokines in Mice Treated with Lipopolysaccharide. R.E. Ward, K. Hintze, J. Tawzer, and M. Lefevre, Utah State University, USA.

10:40 - 11:00 Omega-3 Dietary Supplementation in Rodent Alzheimer's Disease. C. Basco-Columbo, K. Hall, R. Nair-Roberts, J. Garcia, S. Plummer, and C. Hughes, M. Good, and J. Harwood, Cardiff University, UK; Obsidian Research Ltd., UK.

11:00 - 11:20 Effects of Dietary Milk Fat Globule Membrane on Brain Lipid Metabolism and Gene Expression. A.L. Zhou and R. Ward, Utah State University, USA.

11:20 - 11:40 Discussion.

H&N 4.1/LOQ 4: Omega-3 Challenges: Stability, Processing, and Human Nutrition

Chairs: S. Roatta, USDA, ARS, NPA, USA; S.-J. Yoo, Martek Biosciences Corp., USA; and S.-C. Liang, DuPont, USA

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7:55 - 8:00 Introduction.

8:00 - 8:20 Everything You Wanted to Know About DHA. N. Salem, Martek Biosciences Corp., USA.

8:20 - 8:40 Linoleic Acid-specific and Mixed Polyunsaturate Dietary Interventions have Different Effects on CHD Risk: A Meta-analysis of Randomised Controlled Trials. C. Ramsden, J. Hibble, S. Majchrzak, and J. Davis, National Institute on Alcohol Abuse and Alcoholism, National Institutes of Health, USA; University of Illinois at Chicago, USA.

8:40 - 8:45 Current Omega-3 Oil Enrichment Technologies. P. Lembke, Bioseutica USA, Inc., USA.

8:45 - 8:50 Use of n-3 Oil Seed Meals in Livestock Rations as a Source of n-3 Enriched Fats. E. Murphy, University of North Dakota, USA.


9:00 - 9:20 Break.

9:20 - 9:40 Correlation of PUFA Profiles and Cognitive Impairment in Participants in the Cache County Study on Memory Health and Aging. R.E. Ward, H. Wengreen, L. Ward, and D. Pearce, Utah State University, USA.

9:40 - 10:00 Processing and Stability of Omega-3 Oil from Microbial Sources. R.D. Orlandi, K.W. Hutchenson, M. Avogousti, J.M. Odom, and S.-C. Liang, DuPont Applied Biosciences, USA.

10:00 - 10:20 Modeling the Kinetics of Fish Oil Oxidation. J.C. Sullivan (Honored Student Award Winner) and J.M. Tishinsky (Honored Student Award Winner and the Health and Nutrition Division Student Excellence Award Winner), S.M. Budge, and M. St-Onge, Dalhousie University, Canada; Ascenta Health, Canada.

10:20 - 10:40 Emulsification Technique Affects Oxidative Stability of Fish Oil-in-Water Emulsions. A.F. Horn, L.H.S. Jensen, N.S. Nielsen, A. Horweide, and C. Jacobsen, National Food Institute, Technical University of Denmark, Denmark; Center for Electron Nanoscopy, Technical University of Denmark, Denmark; Dept. of Mechanical Engineering, Technical University of Denmark, Denmark.

11:20 - 11:40 Quality and Technical Challenges Facing the Omega-3 Industry as a Result of Sustained Rapid Market Growth. A. Ismail, Global Organization for EPA and DHA Omega-3s, USA.
11:00 Synthesis and Properties of UV-curable Soy-based Branched Oligomers. R. Liu1,2, J. Yan1, S. Ariyasivam1, X. Liu1, and Z. Chen1,1Center for Nanoscale Science and Engineering, North Dakota State University, USA, 2School of Chemical and Material Engineering, Jiangnan University, P.R. China.


11:40 An Update on the USDA BioPreferred Program. G. Norton, Iowa State University, USA.

LOQ 4/H&N 4.1: Omega-3 Challenges: Stability, Processing, and Human Nutrition
Chair: S. Raatz, USDA, ARS, NPA, USA; S.-J. Yoo, Martek Biosciences Corp., USA; and S.-C. Liang, DuPont, USA

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7:55 Introduction.
8:00 Everything You Wanted to Know About DHA. N. Salem, Martek Biosciences Corp., USA.
8:20 Linoleic Acid-specific and Mixed Polynsaturated Dietary Interventions have Different Effects on CHD Risk: A Meta-analysis of Randomised Controlled Trials. C. Ramsden1, J. Hibel1n, S. Majchrzak1, and J. Davis2,1National Institute on Alcohol Abuse and Alcoholism, National Institutes of Health, USA, 2University of Illinois at Chicago, USA.
8:40 Current Omega-3 Oil Enrichment Technologies. P. Lembke, Biosutica USA, USA.
9:00 Use of n-3 Oil Seed Meals in Livestock Rations as a Source of n-3 Enriched Foods. E. Murphy, University of North Dakota, USA.
9:40 Break.
10:00 Correlation of PUFA Profiles and Cognitive Impairment in Participants in the Cache County Study on Memory Health and Aging. R.E. Ward, H. Wengreen, L. Ward, and D. Pearce, Utah State University, USA.
10:40 Modeling the Kinetics of Fish Oil Oxidation. J.C. Sullivan (Honored Student Award Winner) S.M. Budge1, and M. St-Onge2, 1Dalhousie University, Canada, 2Ascenta Health, Canada.
11:00 Emulsification Technique Affects Oxidative Stability of Fish Oil-in-Water Emulsions. A.F. Horn1, L.H.S. Jensen12, N.S. Nielsen1, A. Horsewell13, and C. Jacobsen1,1National Food Institute, Technical University of Denmark, Denmark, 2Center for Electron Nano-scopy, Technical University of Denmark, Denmark, 3Dept. of Mechanical Engineering, Technical University of Denmark, Denmark.
11:20 Quality and Technical Challenges Facing the Omega-3 Industry as a Result of Sustained Rapid Market Growth. A. Ismail, Global Organization for EPA and DHA Omega-3s, USA.

PHO 4: Phospholipids in Food and Nutraceutical Applications
Chair: B. Sebree, Archer Daniels Midland Co., USA

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7:55 Introduction.
8:00 A Review of the Multifunctional Properties of Lecithin in Food Systems. L. Golbert, Archer Daniels Midland, USA.
8:20 Emulsifying Properties of Different Modified Sunflower Lecithins. D.M. Cabezas1, R. Madoery2, B.W.K. Diehl1, and M.C. Tomás1,1Centro de Investigación y Desarrollo en Criotecnología de Alimentos (CIDCA), Facultad de Ciencias Exactas (UNLP-CONICET), Argentina, 2Cátedra de Química Orgánica, FCA UNC, Argentina, 3Spectral Service, Germany.
8:40 Evaluation of Deoiled Lecithin in the Production of Flour Tortillas. B. Sebree, ADM Research, USA.
9:00 Phospholipids in Functional Beverages. D. Bukowski, American Lecithin Company Inc., USA.

PRO 4: General Processing
Chair: J. Mulholland, N. Hunt Moore & Assoc Inc., USA; and T. Gum, Agribusiness & Water Tech Inc., USA

260-261
7:55 Introduction.
8:00 New Opportunities in the Enzymatic Refining and Modification of Fish Oils. W.D. Cowan1, H.S. Yee1, M.L. Damstrup1, and H.C. Holm1,1Novozymes UK, UK, 2Novozymes MY, Malaysia, 3Novozymes A/S, Denmark.
8:40 Microreactors—An Innovative Tool for Development of Transesterification Reaction Continuous Processes. R. Richard12, S. Thiebaud-Roux1,2, and L. Prat1,1Université de Toulouse; INPT; LCA (Laboratoire de Chimie Agro-Industrielle); ENSIACET, France, 2INRA; LCA (Laboratoire de Chimie Agro-Industrielle), France, 3Université de Toulouse; INPT; CNRS; Laboratoire de Génie Chimique; UMR 5503, France.
9:00 Proof-of-concept of Two-stage Countercurrent Enzyme-assisted Aqueous Extraction Processing of Soybeans. J.M.L.N. de Moura, D. Maurer, S. Jung, and L.A. Johnson, Iowa State University, USA.
9:20 Biodiesel and Value-added Glycerol Carbonate from Supercritical Dimethyl Carbonate. Z. Ilham (Processing Division Student Excellence Award Winner) and S. Saka, Dept. of Socio-environmental Energy Science, Graduate School of Energy Science, Kyoto University, Japan.
9:40 High Efficiency Bio-refining with Fiber Processors. J.L. Massingilli1, P.N. Patel1, T.C. Sorensen2, and G.B. Sutton2,1Advanced Materials and Processes, USA, 2Texas State University, USA.
10:00 Destabilization of the Emulsion Produced during Aqueous Extraction of Dehulled Yellow Mustard Flour using Organic Solvents. S. Tabtbae and L.L. Diosady, University of Toronto, Canada.
10:40 Optimized Oil Refining Process for Low 3-MCPD Palm Oil Production. Y.R. Jiang1, W. Luo1, Y.T. Liu1, H. Yang1, and X.B. Xu1,1Wilmar Biotechnology Research & Development Center (Shanghai) Co., Ltd., China PR., 2Wilmar Edible Oil GmbH, Germany, 3PGEO Edible Oils Sdn, Malaysia.
11:00 Unique Fractionation Technologies—Its Application and Advances. R. Sakharya, Mecpro Heavy Engineering Ltd., India.
11:20 Extraction and Deacidification of Oils Using Supercritical Carbon Dioxide. D. Yucesen and N. Akgun, Yildiz Technical University, Turkey.
11:40 Importance of Soap Adsorbent in Edible Oil Refining. S.K. Sharma, Sheel Chand Agroils Pvt. Ltd., India.
12:00 Improving Quality and Performance in Chemical Interesterification of Fats and Oils by Modifying Dry Catalyst Deactivation Process. M. Jozzi and M. Hatami, R&D Department, Jahan Vegetable Oil Co, Iran.
PCP 4: Functional Properties of Proteins and Co-Products

This session sponsored in part by Solae LLC

Chairs: S. Jung, Iowa State University, USA; and P. Kerr, Solae Co., USA

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7:55 Introduction.

8:00 Physiological Activities of Amaranth Proteins. M.C. Arón, CIDCA, UNLP – CONICET, CCT La Plata, Argentina.

8:40 Effects of Seed Preparation and Oil Pressing on Milkweed (Asclepias spp.) Protein Functional Properties. M.P. Hojilla-Evangelista and R.L. Evangelista, USDA, ARS, NCRAU, USA.


9:20 Improving the Meat Functionality of Soy Protein Concentrate Through Fiber and Protein Modification. D.-C. Hwang, B. Monagle, T. Mertle, T. Wong, and P. Kerr, Solae, LLC, USA.


10:00 A New Method to Determine the Carbohydrate Profile in Soy Fiber and Oil Seeds. T. Tran, B. Pierce, and W. Perez, Solae LLC, USA.

10:20 Bioactive Peptide in Soybean induces Apoptosis in Human Metastatic Colon Cancer Cells. E. Gonzalez de Mejia and V. Dia, University of Illinois, USA.


11:00 Extraction and Fractionation of Protein Derived Bioactive Peptides by using Various Chromatography Techniques. M. Naghsheb’eh, H.M. Ghazali, H. Mirhosseini, and S. Tabassi, Dept. of Food Science, Faculty of Food Science and Technology, Universiti Putra Malaysia (UPM), Malaysia, Dept. of Food Technology, Faculty of Food Science and Technology, Universiti Putra Malaysia (UPM), Malaysia, Graduate School of Management, Universiti Putra Malaysia (UPM), Malaysia.

10:00 Improved Bioreactor Design and a Mathematical Model for Solvent–Free Lipase–Catalyzed Synthesis of Saccharide–Fatty Acid Ester in Suspension Media. R. Ye (Biotechnology Division Student Award Winner) and D.G. Hayes, Dept. of Biosystems Engineering and Soil Science, The University of Tennessee, USA.


10:40 Synthesis and Properties of Esterquats Derived from Rice Bran Fatty Acids and Triethanolamine. V.K. Tyagi and M. Gunjan, Harcourt Butler Technological Institute, India.

11:00 Surface-active and Performance Properties of Alkyl Polyglycoside (APG) Surfactants Derived from Fatty Alcohols. V.K. Tyagi and N. Sharma, Harcourt Butler Technological Institute, India.

11:20 Recent Developments in Cleaning with Cellulase Enzymes. N.J. Lant, C. Calvimontes, V. Dutschke, and S.G. Patterson, Procter & Gamble Technical Centres Ltd., UK, Leibniz Institute for Polymer Research, Germany, University of Twente, The Netherlands.


S&D 4/B10: Biobased Materials: Surfactants, Polymers, and Enzymes in Green Cleaning

Chairs: D. Solaiman, USDA, ARS, ERRC, USA; D.G. Hayes, University of Tennessee, USA; and G. Smith, Huntsman Performance Products, USA

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7:55 Introduction.

8:00 Enhanced Stabilization of Cloudy O/W Emulsions with a Blend of Gum Arabic/Whey Protein Isolate. N. Garti, M. Klein, A. Aserin, and I. Svitov, Casali Institute for Applied Chemistry, Hebrew University, Israel.

8:20 Multifunctional Green Surfactants from Crops. S.R. Jadhav (Ralph Potts Memorial Fellowship Award Winner) and G. John, The City College of The City University of New York, USA.

8:40 Clickable Sophorolipid Surfactants. J.A. Zerkowski and D.K.Y. Solaiman, USDA, ARS, ERRC, USA.


9:20 Rhamnolipid Production and Purification. M. Sodagari (Surfactants and Detergents Division Student Travel Award Winner), Y. Chen, J. L. Lilly, N. M. Pinzon, and L. –K. Ju, The University of Akron, USA.


S&D 4.1: Surface Cleaning, Disinfection, Antimicrobials, and Odor Control

Chairs: E. Skakere, The Clorox Company, USA; and A. Taneja, BASF, USA

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7:55 Introduction.


8:40 Readily Biodegradable Chelating Agent for Improved Detergent Efficiency. P. Kincaid and W. Parry, Akzo Nobel Functional Chemicals LLC, USA.


9:20 Quick and Spotless Drying. S. Gross, A. Uner, and T. Albers, Cognis Corporation, USA, Cognis Kimya A.Ş., Turkey, Cognis GmbH, Germany.


S&D 4.2: Alternate Cleaning Methods: Solvents and Low Water Systems

Chairs: J. Scheibel, The Procter & Gamble Co., USA; and S. Seelig, Waterless Cleaning LLC, USA

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10:00 Keynote Presentation: Sustainable Solutions in Laundry: Mass Efficient Formulation Approaches to Cleaning. K. Fish, The Procter & Gamble Co., USA.
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102nd AOCS Annual Meeting & Expo
May 1–4, 2011
BIO 5: General Biotechnology
Chairs: D. Solaiman, USDA, ARS, NCAUR; and L.-K. Ju, University of Akron, USA
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1:55
Introduction.
2:00
Lipase-catalyzed Hydrolysis of Salmon Oil to Concentrate Omega-3 PUFA: Modeling and Optimization of the Process. D. Kahveci and X. Xu, Dept. of Molecular Biology, Aarhus University, Denmark.
2:20
Encapsulation of Omega-3 Oils. A. Sundararajan, Martek Biosciences Corporation, USA.
2:40
A Biodiesel Feedstock of Triacylglycerides from Acid Hydrolysat of Switchgrass and Woodchips. G. Zhang, T. French, R. Hernandez, and W. Holmes, Mississippi State University, USA.
3:00
Continuous Production of Biodiesel from Corn Oil in a Supercritical Carbon Dioxide Bioreactor. O.N. Ciftci and F. Temelli, Dept. of Agricultural, Food and Nutritional Science, University of Alberta, Canada.
3:20
Lipid Characterization of Certain Microalgae with Biofuel Application. G. Wang and T. Wang*, Iowa State University, USA.
3:40
Use of Algae to Modify Waste Oil for Biodiesel Production. M. Hosseini and L.-K. Ju, The University of Akron, USA.
4:00
Quantitative Synthesis of Tyrosyl Oleate Catalyzed by Two Immobilized Candida antarctica Lipases in Solvent-free Medium. C.F. Torres1, D. Martin1, D. Telnilla1, O. Fernandez2, I. Moran1, R.M. Blanco2, and G. Reglero*, Instituto de Investigación en Ciencias de la Alimentación (CIAL), Consejo Superior de Investigaciones Científicas, Universidad Autónoma de Madrid, Spain. ‘Critical Enzymes SL, Fundación Parque Científico de Madrid, Spain, ‘Instituto de Catalis y Petroquímica, Consejo Superior de Investigaciones Científicas, Spain.

EAT 5: General Edible Applications
Chairs: B. Farhang, University of Guelph, Canada; and G. List, USDA Consultant (Retired), USA
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1:55
Introduction.
2:00
Physical and Chemical Properties and Oxidative Stability of Whey Protein Encapsulated Fish Oil as Affected by Encapsulation Method. N.T. Dunford (Timothy L. Mounts Award Winner), Oklahoma State University, Dept. of Biosystems and Agricultural Engineering and Robert M. Kerr Food and Agricultural Products Center, USA.
2:20
Study on Stability of Blends with High Percentage of Liquids Oils. S. Kanagaratnam1, M.M. Sahri1, M.E. Hoque2, and A. Sporrogge, Malaysian Palm Oil Board, Malaysia. ‘The University of Nottingham Malaysia Campus, Malaysia.
2:40
Lipase-Catalyzed Interesterification of Beef Tallow with High Oleic Sunflower Oil and Rice Bran Oil. N. Segura, M.J. Pardo, and I. Jachmanián*, Laboratorio de Grasas y Aceites. Facultad de Química, Universidad de la República, Uruguay.
3:00
Developing Unique Fatty Acid Combinations through Traditional Sunflower Breeding Methods. B. Vick1 and L. Kleingartner2, USDA, ARS, Sunflower Research Unit, USA. ‘National Sunflower Association, USA.
3:20
The Role of Mixing Temperature on Microstructure and Rheological Properties of Butter Blends. P. Buldo and L. Wiking, Aarhus University, Denmark.
3:40
Effect of Processing Conditions and Stabilizer Components on Physicochemical and Stability Properties of Astaxanthin Nanodispersions. N. Anarjan Kouchebagg1 (Edible Applications Technology Division Student Award of Excellence Winner) C.P. Tan*, H. Mirhosseini1, B. Sham Bahrani, and H. Jafariadadeh Mahirii2, ‘Dept. of Food Technology, Faculty of Food Science and Technology, Universiti Putra Malaysia, Malaysia. ‘Dept. of Food Science, Faculty of Food Science and Technology, Universiti Putra Malaysia, Malaysia.
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4:00 Novel Formulation of Zero-trans, Low Saturated Iranian Vanaspati Using Palm Free Interesterified Oil Base Stocks and Blending Techniques. M. Jaziz, M. Aghighi Ravan, and P. Rashchi, R&D Department, Jahan Vegetable Oil Co., Iran.

FS&FF 5: Successfully Performing Interfaces
Chair: Y. Wang, Kraft Foods Inc., USA

1:55 Introduction.
2:00 Stabilization of Oil-in-Water Emulsions Via Interactions between Soy Protein Isolates and Polysaccharides. T. Tran and D. Rousseau, Ryerson University, Canada.
2:20 Surfactant-triglyceride Interactions Significantly Influence Water-in-Oil Emulsion Stability. S. Ghosh and D. Rousseau, Ryerson University, Canada.
2:40 Role of Salt on Water-in-Oil Emulsion Stability. S. Ghosh, M.F. Robert, and D. Rousseau, Ryerson University, Canada.
3:00 Partial Coalescence of Emulsions as a Result of Partially and Totally Wetted Solid Particles. A.B. Pawar, P.T. Spicer, R. Ergun, and R. Hartel, Dept. of Food Science, University of Wisconsin Madison, USA.

H&N 5: General Nutrition II
Chairs: A. Zhou, Utah State University, USA; and R. Ward, Utah State University, USA

1:55 Introduction.
2:00 Novel Approach to Develop Functional Fermented Fish Meat Paste by Japanese Koji Fermentation Technique. A. Giri and T. Ohshima, College of Light Industry and Food Science, South China University of Technology, China.
2:20 Millet Phenolics as Natural Antioxidants in Food and Biological Systems. G.A. Chandrasekara (Honored Student Award Winner) and F. Shahidi, Memorial University of Newfoundland, Canada.
2:40 Prune (Prunus domestica L.) Fruits as a Source of Polyphenolic Nutraceuticals. L. Banelli, S. Miele, E. Bangiacchi, A. Romani, and P. Pinelli, Dept. of Pharmaceutical Sciences, University of Firenze, Italy.
3:20 In vitro Anti-microbial and Brine Shrimp Lethality Potential of the Seed Kernels’ Oil of Nahar (Mesua ferrea) Plant. I.A. Ahmed, M.S. Elwathig, S.M. Aremu, J.I. Daoud, and M.A. Mikail, International Islamic University Malaysia, Malaysia.
3:40 Mowrah Butter: Nature’s Novel Fat. M.F. Ramadan, Zagazig University, Faculty of Agriculture, Egypt.

IOP 5: General Industrial Oil Products
Chairs: D. Sparks, Mississippi State University, USA; and P. Pham, Mississippi State University, USA

1:55 Introduction.
2:00 Purification of Pollock Fish Oil using Synthetic Magnesium Silicate. G. Hicks and B. Cooke, Dallas Group of America, Inc., USA.
2:20 The Development of Rigid Polyurethane Foam Insulating Panels for the Construction Industry using Low Cost Polyls Derived from Canola Oil. X. Kong, G. Liu, Z. Zhang, T. Tekle, and J.M. Curtis, Lipid Chemistry Group, Dept. of Agricultural, Food and Nutritional Sciences, University of Alberta, Canada.
2:40 Optimization of Production of Conjugated Linoleic Acid (CLA) from Corn Oil by Response Surface Methodology and Enrichment by Urea Fractionation Method. S. Karasan, M. Tuter, and G. Ustun, Istanbul Technical University, Chemical Engineering Department, Turkey.
3:00 Development of Pellet Type of Supported ZrO Catalyst for Renewable Diesel Production from Lower Grade Oils. M. Kim, S. Yan, C. Dirmaggio, S. Salley, and K.Y.S. Ng, Wayne State University, USA.
3:20 Separation of Omega-3/6 fish Oil from Fish Waste using Pressure Swing Technique of Supercritical Carbon Dioxide. M.Z.I. Sarker, S. Ferdosh, and J. Selamat, Universiti Putra Malaysia, Malaysia.
3:40 Production of Biodiesel Using Dimethyl Carbonate as the Methyllating Agent: A Glycerol-free Biofuel. M. Miguez and T. Benson, Lamar University, USA.
4:00 Next Generation Feed Stocks for Bio-based Lubricant and Polymer Manufacture. J. Grushcow, Linnaeus Plant Sciences Inc., Canada.
4:20 Enhanced Lipid Accumulation for Biofuels Production by Sewage Anaerobic Sludge Microorganisms via Cultivation in Gluten-free Aerobic Bioreactors. A. Mondala, R. Hernandez, P. Pham, T. French, and L. McFarland, Dave C. Swaim School of Chemical Engineering, Mississippi State University, USA.

LOQ 5: General Oxidation
Chairs: M. Peitz, Archer Daniels Midland Co., USA; and S. Zhou, Kellogg, USA

1:55 Introduction.
2:00 Thermal Desorption Studies of Corn Oil Degradation at High Temperatures. X. Qin and K.M. Schaich, Rutgers University, USA.
2:20 Incorporation of Soyomega™ (Stearidonic Acid Enriched Soybean Oil) into a Variety of Processed Meat Applications. S. Lee, M. Orcutt, and D. Welsby, Solae LLC, USA.
3:00 A Spectroscopic Approach for Controlling Chemical Changes in Frying Oils. D.L. Garcia Gonzalez, N. Tena, and R. Aparicio, Instituto de la Grasa (CSIC), Spain.
3:20 Protein-stabilized Interfaces Do Not Protect Emulsified Lipids Against Oxidation in Comparison with Surfactant-Stabilized Interfaces. C. Berton, M.H. Ropers, and C. Genot, Technological Research Assemblages, INRA, France.
3:40 Evaluating a Combined Adsorption Process for Purifying Salmon (Oncorhynchus keta) Oil. H. Yin (Honored Student Award Winner) and S. Sathivel, Louisiana State University, USA.
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Your Global Fats and Oils Connection
4:00 Choline and Ethanolamine Decompose Lipid Hydroperoxides into Hydroxyl Lipids. X. Pan, A. Irwin, M. Leonard, and D. Welsby, Solae, LLC, USA.


**PHO 5: General Phospholipids**
*Chair: L. Colbert, Archer Daniels Midland Co., USA*

**202**

1:55 Introduction.

2:00 Greener Agricultural Adjuvants Using Phospholipids—A Growing Market Trend. S. Baseeth and B. Sebree, Archer Daniels Midland, USA.

2:20 Enrichment of Phospholipids from Biological Matrices with Zirconia-modified Silica Sorbents Followed by LC-MS/MS Analysis. X. Lu, C. Aurand, M. Ye, and M. Monko, Supelco/Sigma Aldrich, USA.

2:40 Optimisation of Enzymatic Degumming by Applying a New Understanding of Reaction Kinetics. W.D. Cowan, H.S. Yee, and H.C. Holm, Novozymes UK, UK; Novozymes Malaysia, Malaysia; Novozymes A/S, Denmark.

3:00 Pressure Perturbation and Differential Scanning Calorimetric Studies on Phospholipid-Peptides Mixtures. L.N. Okoro, American University of Nigeria, Nigeria.

**PCP 5: General Protein and Co-Products**
*Chairs: N. Deak, Solae Co., USA; and P. Qi, USDA, ARS, ERRC, USA*

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1:55 Introduction.

2:00 The Effects of Proteins in Simple Starch Matrices. C. Onwulata, USDA, ARS, USA.

2:20 Application of Enzyme-assisted Aqueous Oil Extraction to Peanut. Y. Wang, A. Li, X. Luan, C. Du, and R. Ma, Academy of State Administration of Grain, China.

2:40 Development of Microalgae Food Ingredients. M. Golembieski, Solazyme, USA.

3:00 Hydrolyzable Tannins from Different Plant Species: Their Potential Uses in Agriculture and Biomedical Sciences. A. Romani, S. Miele, E. Bargiacchi*, M. Campo, and P. Buzzini, Dept. of Pharmaceutical Sciences, University of Florence, Italy; Dept. of Agronomy and Agroecosystem Management, University of Pisa, Italy; Consortium INSTM, Italy; Dept. of Applied Biology - Microbiology, University of Perugia, Italy.


3:40 Identification and Characterization of Sphingosine Binding Protein. Z. Hossain, T. Masuda, T. Tsuduki, T. Sugawara, and T. Hirata, Kyoto University, Japan; Bangladesh Agricultural University, Bangladesh; Osaka University, Japan; Institute for Protein Research, Osaka University, Japan; Tohoku University, Japan.

4:00 Characterization of Bovine Blood Proteins with Flocculation Activity. G.J. Piazza, A. Nuñez, and R.A. Garcia, USDA, ARS, ERRC, USA.

4:20 Properties of Whey Protein Based Biocomposite. S. Mukhopadhyay and C. Onwulata, USDA, ARS, ERRC, USA.
Abstracts are published in the Abstract Book which is included in your meeting portfolio. The presenter is the first author listed or otherwise indicated with an asterisk (*).

**ANA-P: Analytical Posters**

**Chair: F.J. Eller, USDA, ARS, NCAUR, USA**

**Hall A • Authors present during Monday reception**

1. Identification of Fatty Acid Composition and Triglycerides Profile of Papaya Seed Oil from Different Varieties by Using LC-MS and GC-MS. S. Samaran, H. Mirhosseini, C.R. Pan, P. Kavousi, and Y.C. Man, University Putra Malaysia, Malaysia.


8. Validation of FT-NIR Models for the Rapid Determination of Fatty Acid Composition. M.M. Mossoba1, H. Azizian2, and J.K.G. Kramer3, 1Food and Drug Administration, USA, 2NIR Technologies Inc., Canada, 3Guelph Food Research Center, Agriculture and Agri-Food Canada, Canada.


16. High-resolution NMR Spectroscopy: An Alternative Fast Tool for Qualitative and Quantitative Analysis of Diacylglycerol (DAG) Oil. E. Hatzakis1, A. Agiomyrgianakis2, S. Kostidis3, and P. Dais1, 1University of North Carolina Wilmington, USA, 2University of Crete, Greece, 3National and Kapodistrian University of Athens, Greece.


19. Comparison of AOAC Official Method 922.06 (Fat in Flour) to AOC Official Method Ce 1k-09 (Determination of Total Fat by Gas Chromatography). K. Reihel and T. West, Bunge North America, USA.


25. Measurement of Conjugated Linoleic Acid in CLA-Rich Potato Chips by ATR-FTIR. J. Kadame, C. Castrodale, and A. Proctor, University of Arkansas, USA.

26. Effect of Extraction Conditions on Fatty Acid Composition and Triacylglycerol Profile of Jackfruit Seed Oil. B.T. Amid, H. Mitrosceeni, P. Kavouzi, F. Farivar, and T.C. Ping, Universiti Putra Malaysia (UPM), Malaysia, "Business Training Center, Iran.


30. Rapid Analysis of EPA, DHA, and Other Critical Parameters for Fish Oil. K. Ma, K. Kramer, C.-H. Tseng, and B. Stefl, Cognis, USA.


32. High-throughput Time Domain NMR Technology for Fats/Oils Analysis. X. Tombokan and S. Ghosh, Bruker Corporation, USA.

33. Supercritical Fluid Extraction for the Removal of Lipid and Interfering Compounds Prior to Radiocarbon Dating of Archeological Artifacts. J. King, J. Phomokay, K. Steelman, and M. Rowe, "University of Arkansas, USA, "University of Central Arkansas, USA, "Texas A&M University-Qatar, USA.

34. Trans-trans CLA Fatty Acid Isomer Separation from CLA-rich Oil by Ag+ HPLC. U. Shah, J. Lay, and A. Proctor, University of Arkansas, USA.

35. Identification and Quantitation of Biodiesel and other Reaction Intermediates in Lipase-catalyzed Transesterified Oils and an Oil-fat blend by HPLC. A.N.A. Aryee and B.K. Simpson, Dept. of Food Science and Agricultural Chemistry, Faculty of Agricultural and Environmental Sciences, McGill University, Canada.

36. A Simple, Modified GCMS Method to Quantify Oxidation Products in Edible Oils. V. Jain, Oil-Dri Corporation of America, USA.

**BIO-P: Biotechnology Posters**

**Chair:** R. Ashby, ARS, USDA, NCAUR, USA

**Hall A - Authors present during Monday reception**

The Biotechnology Division is enabling up to 8 poster presenters to give a brief talk on their research results in the Expo poster area on Monday, May 2, at 4:00 pm. Check the Program Addendum for presentation details.

1. Enrichment of High Stearidonic Acid (SDA) Soybean Oil with Palmitic Acid at the sn-2 Position by Enzymatic Interesterification for Use as Human Milk Fat Analog. S. Teichert and C. Akoh, University of Georgia, USA.

2. Enzymatic Modification of Freshwater Catfish Oil for Human Milk Fat Substitutes. J. Wan, P. Hu*, C. Jia, W. Li, and J. Yu, Wilmar (Shanghai) Biotechnology Research & Development Center Co., Ltd., China.

3. Influence of Seed Storage Protein Gene Composition on Structural Features of Major Crucifer Proteins: Protein Secondary Structure Study of Arabidopsis thaliana. W.G. Thushan Sanjeewa, D.D. Hegedus, P. Yu, X. Qiu, T.C. McIntosh, T. May, and J.P.D. Wanasundara, "Agriculture and Agri-Food Canada, Canada, "Dept. of Food and Bioproduct Sciences, University of Saskatchewan, Canada, "Dept. of Animal and Poultry Science, University of Saskatchewan, Canada, "Canadian Light Source, University of Saskatchewan, Canada.

4. Reduction of Free Fatty Acids in Crude Palm Oil via Trifluoromethanesulfonic Acid. A. Hayyan, M. Mohd Ali Hashim, F.S. MJali, M. Hayyan, and J.M. AlNashfi, "Dept. of Chemical Engineering, University of Malaya, Malaysia, "Petroleum & Chemical Engineering Department, Sultan Qaboos University, Oman, "Chemical Engineering Department, King Saud University, Saudi Arabia.

5. Purification of Palm Oil-Based Fatty Acid Methyl Ester using Deep Eutectic Solvents. M. Hayyan, F.S. MJali, M.A. Hashim, A. Hayyan, and J.M. AlNashfi, "University of Malaya Center for Ionic Liquids (UMCL), University of Malaya, Malaysia, "Petroleum and Chemical Engineering Department, Sultan Qaboos University, Oman, "Chemical Engineering Department, King Saud University, Saudi Arabia.


7. Cyclopropane Fatty Acid Accumulation in Plant Oil. H. Fukushima, A. Lewis, T. Tavenport, and D. Hildebrand, "University of Kentucky, USA, "University of Florida, USA.

8. Purification of Catfish Oil Biodiesel using an Adsorption Process. K. Mis Solvah and S. Sathivel, Louisiana State University Agricultural Center, USA.


12. Tochroromanois and γ–oryzanol –Associated Components of Rice Bran and Rice Bran Oil Bodies. N. Nantiyakul, "Biotechnology Division Student Award Winner", G. Tucker, and D. Gray, University of Nottingham, UK.


17. Manufacture of Biodiesel via Transesterification Reaction from Capparis Spinosa Oil Seed with Methanol and Basic Catalyst. K. Tahvildari, Azad University, Iran.


L. Hayes1, H. Rahman1, M. Deyholos1, F. Georges2, R. Datla1, A. Hannoufa1, B. Slominski1, G. Li1, C. Sensen1, P. Phillips1, G. Haughn1, G. Rakow1, S. Shah1, G. Selvaraj1, R.J. Weselake1, 1University of Alberta, Canada, 2National Research Council Plant Biotechnology Institute, Canada, 3Agriculture and Agri-Food Canada, Canada, 4University of Manitoba, Canada, 5University of Calgary, Canada, 6University of Saskatchewan, Canada, 7University of British Columbia, Canada, 8Agriculture and Agri-Food Canada, Canada, 9Alberta Innovates and Technology Futures, Canada.

20. Lipase-Catalyzed Modification of Canola Oil with Caprylic Acid. Y. Wang1, X. Luan1, X. Xu1, and C. Wei1, 1Academy of State Administration of Grain, China, 2University of Aarhus, Denmark.

21. TAG Biosynthetic Enzymes and Palmitoleic Acid (16:1 9) Accumulation in Seed Oils of Macadamia and Cat's Claw. R. Li and D. Hildebrand, University of Kentucky, USA.

22. Synthesis of Symmetrical Triacylglycerol Containing Pinolenic Acid at sn-2 Position in Packed Bed Reactor by Lipase–catalyzed Acidolysis. J.H. Choi, T.T. Zhao, N. Ma, and I.H. Kim, 1Dept. of Food Nutrition, College of Health Science, Korea University, South Korea. 2Research Institute of Health Science, Korea University, South Korea.

23. Synthesis of Triacylglycerol Containing CLA by Lipase–catalyzed Esterification under Vacuum. S.I. Hong1, J.H. Choi1, and I.H. Kim1, 1Dept. of Food Nutrition, College of Health Science, Korea University, South Korea, 2Research Institute of Health Science, Korea University, South Korea.

24. Production of Monoacylglycerol Containing Pinolenic Acid Using Lipase–mediated Reaction. Y.G. Pyo1, S.I. Hong1,2, J.H. Choi1, and I.H. Kim1, 1Dept. of Food Nutrition, College of Health Science, Korea University, South Korea, 2Research Institute of Health Science, Korea University, South Korea.

EAT-P: Edible Applications Technology Posters
Chair: B. Kickle, ADM Food Oils Research, USA
Hall A - Authors present during Tuesday reception


2. Thermo-mechanical Properties of Amide Derivatives of Hydroxystearic Acid and Candelilla Wax Organogels. J.F. Toro-Vazquez1, J. Morales-Rueda1, V. Ajay Mallia1, and R.G. Weiss1, 1Universidad Autonoma de San Luis Potosi, Facultad de Ciencias Quimicas-CIEP, Mexico, 2Georgetown University, Departments of Chemistry and Physics, USA.


5. Microviscosity of Fat Globules in O/W-emulsions Studied by EPR. M.B. Munk1 and M.L. Andersen1, 1Palsgaard A/S, Denmark, 2University of Copenhagen, Dept. of Food Science, Denmark.

6. Oil-water Emulsions of β-lactoglobulin Glycated with Glucose, Lactose, and Dextrane. A. Medrano1, C. Abirached1, I. Viteitez1, L. Panizziolo1, P. Moyna1, and M. Anión1, 1Facultad de Quimica, Universidad de la República, Uruguay, 2CIDCA, Universidad Nacional de La Plata, Argentina.

7. Crystallization Behaviour of a Model Shortening with Low Saturated and Zero-trans Fatty Acids Studied by Rheo-XRD. I. Ahmed1, M. Li2, F. Peyronel2, N. Acevedo1, and G. Mazzanti1, 1Dalhousie University, Canada, 2University of Guelph, Canada.

8. Regio-selective Enzymatic Interesterification Combined with Dry Fractionation to Produce CBE. S. Danthine1, S. VanDen Bossche1, C. Blecker1, J. Maes1, and V. Gibson1, 1University of Liege, GaB, Belgium, 2DeSmet Ballestra Group, Belgium.


11. Concentration of Tocots from Rice Germ Oil by Supercritical Carbon Dioxide. S.-N. Ko1, T-Y. Ha2, S.I. Hong1, and I.-H. Kim1, 1Dept. of Food and Nutrition, Korea University, Republic of Korea, 2Korea Food Research Institute, Republic of Korea.

12. Mamey Sapote: Physical Characterisation and Applications after Fractionation. G. Avendal1, M.F. Peyronel2, H. Herman1, C.E. Martinez2, and A. Marangoni2, 1Instituto Tecnologico de Tuxtpec, Mexico, 2Food Science Department, Universidad de Guelph, Canada.


14. Formulation of Submicron Emulsions with DHA Located Either at the Interface or in the Bulk Oil. T.H. Kabir1, A. Meynier1, M. Linder2, and C. Genot2, INRA UR1268 Biopolymers Interactions Assemblies, France, 2INPL, LIBio, France.

15. Developing a Polysaccharide-lipid Based Edible Coating Formulation to Reduce Weight Loss and Delay Ripening Process of Berangan Banana (Musa sapientum cv. Berangan). H.J. Malmiri1, A. Osman1, C.P. Tan2, and R.A. Rahman1, 1Dept. of Food Science, Faculty of Food Science and Technology, Universiti Putra Malaysia, Malaysia, 2Dept. of Food Technology, Faculty of Food Science and Technology, Universiti Putra Malaysia, Malaysia.

16. Time, Temperature, and Shear History Effects on the Kinetics of Polymorphic Transformations within a Monoglyceride Stabilized Oil-in-Water Emulsion. A. Goldstein1, A. Marangoni1, and K. Seetharaman, University of Guelph, Canada.

17. Thermal and Optical Properties of Mixed Pectin-wax Films. E.R. Bauml1, A.A. Carelli1, and S. Martini1, 1Planta Piloto de Ingenieria Quimica (PLAPIQUI), Universidad Nacional del Sur-Consejo Nacional de Investigaciones Científicas y Técnicas, Argentina, 2Dept. of Nutrition, Dietetics, and Food Sciences, Utah State University, USA.

18. Physical Characteristics of Sunflower Wax-pectin Aqueous Solutions. E.R. Bauml1, R. Kerr1, A.A. Carelli1, and S. Martini1, 1Planta Piloto de Ingenieria Quimica (PLAPIQUI), Universidad Nacional del Sur-Consejo Nacional de Investigaciones Científicas y Técnicas, Argentina, 2Dept. of Nutrition, Dietetics, and Food Sciences, Utah State University, USA.


20. Degradation, Characterization and Evaluation of Aflatoxin-B1 Fragments. P. Kundavaram1, Y. Jiang1, M. Zhang1, S. Xia1, H. Yang1, and X. Xu1, 1Wilmar Biotechnology Research and Development Center co., Ltd., China, 2Aarhus University, Denmark.


FS&FF-P: Food Structure & Functionality Forum Posters
Chair: K. Dewettinck, Ghent University, Belgium
Hall A - Authors present during Monday reception

1. Ultrasonic Characterization of Mixing and Sedimentation in Unimodal and Bimodal Sucrose-in-Oil Dispersions. U. Yuce1, S. Calaman, and J.N. Coupland, The Pennsylvania State University, USA.

2. Effect of Aqueous Phase Composition on Stability of Sodium Caseinate Emulsions. C. Huck-Iriart1, R.J. Candal1, and M.L. Herrera1, 1Instituto

Poster Presentations
1. **Fish Oil Maintained Levels of Essential Fatty Acid in Rats Treated with Chemotherapy.** A. Pant1, M.C. Pawlowicz1, W. Xue3, Y. Baracos1, and V.C. Mazurak1, 1University of Alberta, Agricultural, Food and Nutritional Science, Canada, 2Dept. of Oncology, University of Alberta, Canada.

2. **Effect of Phospholipids Containing n-3 Polyunsaturated Fatty Acids on Rat Lipid Metabolism.** K. Fukunaga 1,2, M. Fukao 1,2, R. Hosomi 1,2, H. Arai 2, S. Kanda 1, T. Nishiyama1, and M. Yoshida1, 1Kansai University, Japan, 2Kansai Medical University, Japan.


4. **Model Reaction for Vegetable Oil-based Polyurethane by Nonisocyanate Method.** I. Javni, O. Bilic, D-P. Hong, and Z.S. Petrovic, Kansas Polymer Research Center, Pittsburg State University, USA.

5. **Absorption of Lipid Peroxidation-derived Products by a Human Intestinal Epithelium Caco-2/CTC7.** M. Awada1, M. Guichardant2, S. Lamy3, and M.-C. Michalski1, 2Lyon 2, 3Methodist Research Institute, USA, 4Dept. of Medicine, Indiana University School of Medicine, USA.

6. **Determination of Phytosterols in Parenteral Lipid Emulsions.** T. Pavina1, Z. Xu2, K. Harvey2, M. Hise2, Z. Tahir2, R. Siddiqui3, 4Baxter Healthcare Corporation, USA, 5Baxter SAS, France, 6Methodist Research Institute, USA, 7Dept. of Medicine, Indiana University School of Medicine, USA.

7. **Influence of Fat Emulsified State on the Kinetics of Postprandial Lipemia in Healthy Normal Weight and Obese Subjects.** C. Vors1, J. Drai2, G. Pineau1, S. Lambert-Porcheron1, M. Laval2, H. Vidal3, and M.-C. Michalski3, 1Inra Usc1235, France, 2CRNH Rhône-Alpes, France, 3Inra-lyon, IMBL, France, 4University of Lyon, France, 5Laboratoire de Biochimie, Hospices Civils de Lyon, France, 6Inserm U1060, France.

8. **Intestinal and Metabolic Impacts of Different Dairy Creams in Mice Fed a High Fat Diet.** B. Benoit1, F. Laugerette1, A. Gelson1, C. Debardi2, E. Loizon1, M. Estienne1, A. Paquet1, P. Plaisancie1, and M.-C. Michalski1, 2, 1Inra Usc1235, France, 3Inserm U1060, France, 4Insa-lyon, France, 5Imbl, France, 6Universite de Lyon, France.

9. **Monoacylglycerol Gel Structure does not Influence Postprandial Lipid and Glucose Responses but improves Lipid Profiles in High and Low Moisture Baked Products.** H. Tulk1, C. Pinto1, J. McCluskey1, A. Goldstein2, A. Marangoni1, K. Seetharaman2, and A. Wright3, 1Dept. of Human Health & Nutritional Sciences, University of Guelph, Canada, 2Dept. of Food Science, University of Guelph, Canada.

10. **Omega-3, CLA and trans Fatty Acids Content in Preterm and Term Breast Milk.** A.C. Berenhausen1, R.C. da Silva1, L.A. Gioielli2, and J.M. Block3, 1Santa Catarina Federal University, Brazil, 2University of Sao Paulo, Brazil.

11. **A High Canola/Flax Oil Blend Diet Improves Muscle Phospholipid Fatty Acid Composition but does Not Alter Insulin Resistance in Diet-Induced Obese (DIO) Rats.** D. Hanke1, S. Mohankumar1, L. Siemens1, P. Zahradka1, 1University of Manitoba, Canada, 2Ccarim, Canada.

**H&P-P: Health and Nutrition Posters**

**Hall A** • Authors present during Monday reception

1. **Influence of Fat Emulsified State on the Kinetics of Postprandial Lipemia in Healthy Normal Weight and Obese Subjects.** C. Vors1, J. Drai2, G. Pineau1, S. Lambert-Porcheron1, M. Laval2, H. Vidal3, and M.-C. Michalski3, 1Inra Usc1235, France, 2CRNH Rhône-Alpes, France, 3Inra-lyon, IMBL, France, 4University of Lyon, France, 5Laboratoire de Biochimie, Hospices Civils de Lyon, France, 6Inserm U1060, France.

2. **Low Fat Mayonnaise Formulations Prepared Using Microfluidized Nano Cellulose Fibers.** B. Mert1, 2Middle East Technical University, Turkey, 3Ankara University, Turkey.

3. **Effect of Fatty Acids on Macular Pigment Optical Density, Body Weight and Diet in College-aged Students.** N. Lam, L. Thibodaux, H. Durham, and C. Lammi-Keefe, Louisiana State University, USA.

4. **Eff ects of Five Fats Sources on the Physicochemical Quality of Baked Goods.** D. Hanke1, S. Mohankumar1, L. Siemens1, P. Zahradka1, 1University of Manitoba, Canada, 2Ccarim, Canada.

5. **A Comprehensive Toolbox to Evaluate the Functional Properties of Waxes.** L. Ahmadi and S.S. Nanine, Trent Biomaterial Research Program, Departments of Physics and Astronomy and Chemistry, Trent University, Canada.

**IOP-P: Industrial Oil Products Posters**

**Hall A** • Authors present during Tuesday reception

1. **Oil Production by Desmodesmus subspicatus in Tubular Photobioreactor using Alternative Nutrient.** P.D. Gressler1, T.R. Bjerk2, M.P. de Souza3, A.B. Zappe3, R. de Cassia de Souza Schneider4, V. Antonio Corbellini1, E.A. Lobo1, C.P. Bergman1, and T. Basegio2, 1Kansai University, Japan, 2Kitami Institute of Technology, Japan, 3Kansai Medical University, Japan.

2. **Hydroxylated Polyester Resin Synthesizing from Crambe Oil by Mass Polymerization.** E.R. Pinto1, Y. Messaddeq1, W.L. Polito1, and S.J.L. Ribeiro1, 1Instituto de Quimica - Unesp, Brazil, 2Instituto de Quimica - USP, Brazil.


4. **Corrosion Inhibition of Mild Steel in Mineral Oil and Acidic Media by Several Alkyl Succinate Derivatives.** Y.-W. Kim, K. Chung, M.-J. Choi, B.-T. Yun, S.-Y. Baik, and S.-H. Yoo, Korea Research Institute of Chemical Technology, South Korea.

5. **Oil Content Among the Diverse Castor Genetic Resources in the U.S. Collection.** J.B. Morris1, M.L. Wang1, D.L. Pinnow1, J. Davis2, P. Raymer2, and G.A. Pederson2, 1USDA, ARS, Plant Genetic Resources Conservation Unit, USA, 2University of Georgia, USA.

6. **Methods to Improve Oxidative Stability of Biodiesel.** B.R. Moser, USDA, ARS, NCAUR, USA.

7. **Fatty Acid Profile as a Basis for Screening Alternative Feedstocks for Biodiesel Production.** B.R. Moser and S.E. Vaughn, USDA, ARS, NCAUR, USA.

8. **The Effect of Nano and Micro Clay Fillers in Bio-based Thermoplastic Polyurethanes.** I. Javni, O. Bill, D.-P. Hong, and Z.S. Petrovic, Kansas Polymer Research Center, Pittsburg State University, USA.

9. **Model Reaction for Vegetable Oil-based Polyurethane by Nonisocyanate Route.** J. Hong, D.P. Hong, I. Javni1, and Z.S. Petrovic, Kansas Polymer Research Center, Pittsburg State University, USA.

10. **Biodiesel Production from Corn Oil in the Presence of Enzyme Catalyst.** C. Kesgin, D. Ozcinem1, and S. Yul, Yildiz Technical University, Turkey.

11. **Characteristics of Some Algal Oils Useful for Industrial Applications.** I. Javni, D.-P. Hong, Z.S. Petrovic, and A. Myers, Kansas Polymer Research Center, Pittsburg State University, USA.

12. **The Use of Municipal Wastewater as a Media for Cultivation and Induction of Lipid Synthesis in the Oleaginous Yeast Rhodotorula glutinis.** M. Hetrick1, J.I. Hall2, W.T. French3, R. Hernandez4, W. Holmes5, H. Ryu6, B. Iker7, J. Santo-Domingo1, and J. Donaldson2, 1Dave C. Swalm School of Chemical Engineering, USA, 2Dept. of Biological Sciences, USA, 3Mississippi State Chemical Lab, USA, 4EPA-Cincinnati, USA.

13. **A Comprehensive Toolbox to Evaluate the Functional Properties of Waxes.** L. Ahmadi and S.S. Nanine, Trent Biomaterial Research Program, Departments of Physics and Astronomy and Chemistry, Trent University, Canada.
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LOQ-P: Lipid Oxidation and Quality Posters

Chairs: J. Gerde, Iowa State University, USA; and U. Thiyam-Holandaar, University of Manitoba, Canada

Hall A - Authors present during Tuesday reception

1. **Cultivar Effect on the Phenolics of Olive Leaves and their Antioxidant Activity.** M. Syrvas1,2, V. Van Hoed1, C. Van Poucke1, S. De Saeger1, A. Kiirtisakis1,2, and R. Verhe1, 1Faculty of Bioscience Engineering, Ghent University, Belgium, 2Faculty of Pharmaceutical Sciences, Ghent University, Belgium, The Technological Educational Institution of Thessaloniki, Greece.

2. **Oxidation of Omega-3 Enriched Fish Oil for Animal Feeding Applications.** J.H. Lee1, B. Kouakou1, G. Kannan1, and B.J. Min2, 1Fort Valley State University, USA, 2Tuskegee University, USA.

3. **Oxidative Stability of Conjugated Linoleic Acid – Rich Soy Oil.** C. Castrodale (Honored Student Award Winner and the Peter and Clare Kastullian Award Winner), R.R. Yettella, A. Proctor, and B. Henbest, 1University of Arkansas, USA.

4. **Evaluation of Changes in Physicochemical Characteristics of Edible Vegetable Oils as a Function of Fatty Acid Composition and Frying Conditions.** M. Naghshehine and H. Mirhosseini, Universiti Putra Malaysia (UPM), Malaysia.

5. **Correlation Between Sensory and Chemical Markers in the Evaluation of Brazil Nut Oxidative Shelf-life.** C. Zajdenverg1, G. Branco1, J. Alamed1, E. Decker1, and I. Castro1, 1University of Sao Paulo, Brazil, 2University of Massachusetts, USA.

6. **Optimization of Oil Oxidation by Response Surface Methodology and the Application of this Model to Evaluate Antioxidants.** G.F. Branco and I.A. Castro*, University of Sao Paulo, Dept. of Food and Experimental Nutrition, Faculty of Pharmaceutical Sciences, Brazil.

7. **Characterization of Medium Chain Triacylglycerides (MCTs)-enriched Seed Oil from Cinnamomum camphora (Lauraceae) and Antioxidant Capacity.** J.-N. Hu and Z.-Y. Deng, State Key Lab of Food Science and Technology, Nanchang University, China.

8. **Alaskan Salmon Oil Composition Monitored for One Harvest Season.** J. Stine1, T. Wu1, A. Phillipps2, U. Taraga3, R. Lyons2, D. Chase*, and P. Bechtel1, 1USDA, ARS, USA, 2Texas Tech University, USA.


11. **Stability of DHA and EPA of a Blended Oil with Different Cooking Methods.** Y. Jiang, Y. Zhang, J. Liang, and F. Niu, Wilmar Biotechnology R & D Center (Shanghai) Co., Ltd., China.

12. **Phospholipid Autoxidation in Organic and Water Media.** E.A. Mengete*, D.A. Krugovoy, and O.T. Kasakina, Semenov Institute of Chemical Physics, Russia.

13. **Features of Oils and Lipids Oxidation.** D.A. Krugovoy1,2, O.V. Bugaichuk1, E.A. Mengete1, A.V. Alekseenko2, and O.T. Kasakina2, 1Semenov Institute of Biochemical Physics, Russia, 2Semenov Institute of Chemical Physics, Russia.

14. **Antioxidant Efficiency in Micro Heterogeneous Micellar Systems.** O.T. Kasakina, E.A. Mengete, and Z.S. Kartasheva, Institute of Chemical Physics, Russia.

15. **Antioxidant Determination in Juices and Wines.** N.P. Khrameva1, K.V. Shteen1, and O.T. Kasakina1, 1Plekhanov Russian Academy Economy, Russia, 2Semenov Institute of Chemical Physics, Russia.

16. **Phenolic Content of Crude and Refined Canola Oil Samples: Sinapic Acid Derivatives and Canolol.** A. Richards1, H. Dayandizdi1, and U. Thiyam-Holandaar1, 1CSIRO Food and Nutritional Sciences, Australia, 2The University of Manitoba, Dept. of Human Nutritional Sciences, Canada.


18. **Performance Evaluation of Refined Soybean, Cottonseed and Rice Bran Oils in Discontinuous Deep Frying of Potato Strips.** A. Dal-Bó1, R. Machado2, F. Emmert1, J. Bégamo1, A. Borchartt1, and V. Zanuto1, 1Bunge Brasil S.A., Brazil, 2Bunge Management Systems Inc., Brazil.


20. **Quantification of 4-hydroxy-2-hexenal and 4-hydroxy-2-nonenal in Vegetable and Marine Lipids.** M. Guichardant1, M. Vlau1, J. Jouain1, A. Meynier2, and C. Genot1, 1 Lyon University, INSA of Lyon, CarMen Laboratory, INSERM U1060, Univ Lyon-1, France, 2INRA UR1268 Biopolymers Interactions Assemblies, France, 3UMR133 Toxalim INRA/ENVT, France.

21. **Valorization of Low Quality Edible Oil by Carotenoids Formed by Bacillus indicus HU36.** M.G. Ozguren1, A. Karadag1, S. Ersan1, A. Karalari1, and B. Ozcelik1, 1Istanbul Technical University, Food Engineering Department, Turkey, 2Yeditepe University, Food Engineering Department, Turkey.

22. **Characterization of Volatile Compounds of Aegean Olive Oils.** H. Ilyasoglu1, B. Ozcelik2, V. Vano Hoed1, and R. Verhe1, 1Istanbul Technical University, Food Engineering Department, Turkey, 2Gumushane University, Food Engineering Department, Turkey, 3Ghent University, Belgium.

23. **Polyphenol Antioxidants from Potato Peels: Extraction Optimization and Feasibility Evaluation.** K. Chang and K. Schaich, Rutgers University, The State University of New Jersey, USA.

24. **Chemical Methods, Physical and “Quick” Tests to Verify the Quality of Oils and Fats used for Frying in Poland Restaurants.** A. Menganu Domech and K. Krygier, Warsaw University of Life Sciences, Poland.


26. **Activity of Seaweed Antioxidants in vivo.** A. Widiyaja-Adhi, M. Hosokawa, and K. Miyashita*, Faculty of Fisheries Sciences, Hokkaido University, Japan.
Inline Chlorophyll & Clay Monitoring

Bleaching Processor

Bleaching Filter

Nickel Catalyst
1 ppm - 15 ppm

Chlorophyll
0 - 500 ppb

AOCS Red
0 - 15

Control 4000

AOCS RED
4.5

CHLOROPHYLL
3.2

12/21/2007 RED + CHLORO 10:42:32

Clear

1 2 3

4 5 6

7 8 9

0 +/-
27. Alternate Pathways of Lipid Oxidation: Looking Beyond Hydrogen Abstraction. X. Qin, K.M. Schaiach, and B. Bogusz, Rutgers University, USA.


29. Investigation of Factors Affecting Oxidation of Frying Oils. X. Tian and K.M. Schaiach, Rutgers, The State University of New Jersey, USA.

30. Effect of Antioxidants on the Stability of Canola Oil during Deep Frying. R.E. Kenari1, R. Farhooshi1, and E.S. Saremi1, ‘Sari, Agricultural and Natural Resources University, Iran, 2Ferdowsi University of Mashhad, Iran, 3Azad University of Jooybar, Iran.

31. Carbon Dioxide Blanking Enhances the Frying Stability of Oils and Improves the Nutritional Quality of Fried Foods. F. Aladedunye1, B. Matthäus2, and R. Przybylski1, ‘University of Lethbridge, Canada, 2Max Rubner-Institute, Germany.

32. Physicochemical Characteristics and Oxidative Stability of Perilla Oils Prepared from Different Roasting Conditions. T.T. Zhao1, S.J. Hong1,2, N. Ma1, and I.H. Kim1, ‘Dept. of Food Nutrition, College of Health Science, Korea University, South Korea, 2Research Institute of Health Science, Korea University, South Korea.

PHO-P: Phospholipids Poster
Chair: R. Sebree, Archer Daniels Midland Co., USA
Hall A • Authors present during Tuesday reception

PRO-P: Processing Posters
Chair: V. Jain, Mars Chocolate North America, USA
Hall A • Authors present during Tuesday reception
1. Selective Enrichment of Symmetric Monounsaturated Triacylglycerols from Palm Stearin by Double Solvent Fractionation. K.K. Kang1, C. Lee1, J.-H. Kim4, and B.H. Kim1,2, ‘Dept. of Food Science and Technology, Chung-Ang University, Republic of Korea, 2Dept. of Food and Nutrition, Korea University, Republic of Korea.


4. Extraction, Isolation and Identification of Phenolic Compounds from the Pericarp of Camellia spp. H. Zhong and Q. Cao, Central South University of Forestry and Technology, China.

5. Juniperus Extraction: A Comparison of Species and Solvents. F. Eller and J. Teel, NCAUR, USDA, ARS, USA.

6. Characterization of the Physicochemical Properties of Two Species of Dragon Fruit Seed Oil (Hylocereus undatus and Hylocereus polyrhizus). W. Liao et al., 1N. De Clercq, V. Van Hoed, and K. Dewettinck, ‘Ghent University, Laboratory of Food Technology and Engineering, Belgium, 2Ghent University, Dept. of Sustainable Organic Chemistry and Technology, Belgium.

7. Solubility of Phosphatidylcholine in Supercritical Carbon Dioxide with Propane Co-solvent. D.L. Sparks1, S. Crymble1, J. McEwen2, R. Hernandez2, and T. French3, ‘Dept. of Biochemistry and Molecular Biology, Mississippi State University, USA, 2Dave C. Swalm School of Chemical Engineering, Mississippi State University, USA.

PCP-P: Protein and Co-Products Posters
Chair: J. Wu, University of Alberta, Canada
Hall A • Authors present during Monday reception
1. Qualitative Analysis of Milk Protein Hydrolyzing Enzymes from Various Sources. M. Naghshineh1, H.M. Ghazali2, H. Mirhosseini3, and S. Tabassi1, ‘Dept. of Food Science, Faculty of Food Science and Technology, Universiti Putra Malaysia, Malaysia, 2Dept. of Food Technology, Faculty of Food Science and Technology, Universiti Putra Malaysia, Malaysia, 3Graduate School of Management, Universiti Putra Malaysia, Malaysia.

2. Structural Changes of Brassica napus Storage Proteins during Commercial Oil Meal Processing. W.G. Thushan Sanjeewa1,2, T. McIntosh1, and J.P.D. Wanasundara1,2, ‘Agriculture and Agri-Food Canada, Canada, 3University of Saskatchewan, Canada.

3. Experimental Electron Density Distribution of 6,6’-dimethoxygossypol, a Gossypol Derivative Isolated from Cotton Plants. C.A. Zelaya1, E.D. Stevens1, and M.K. Dowd2,3, ‘Dept. of Chemistry, University of New Orleans, USA, 2USDA, ARS, SRRC, USA.


6. Emulsifying and Physicochemical Properties of Protein Isolates from Chickpea, Faba Bean, Lentil, Pea, and Soy. A.C. Karaca, A. Stone, N. Low, and M. Nickerson, Dept. of Food and Bioprocess Sciences, University of Saskatchewan, Canada.


8. Soy Protein isolate and Milk Whey Protein Isolate (MWPI) Interfacial and Foaming Properties Study. C. Abirached1, A. Medrano1, I. Veitez4, L. Panizzo1, P. Moyna1, and M. Ahón1, ‘Facultad de Quimica, Universidad de la Republica, Uruguay, 2CIDCA, Universidad Nacional de La Plata, Argentina.

9. Pretreatment of Soybean Fiber by Soaking in Aqueous Ammonia Prior to Saccharification. B. Karki1, D. Maurer2, T.H. Kim1,2, and S. Jung1,2, ‘Dept. of Food Science and Human Nutrition, Iowa State University, USA, 2Center for Crops Utilization Research, Iowa State University, USA, 3Dept. of Agricultural and Biosystems Engineering, Iowa State University, 4Dept. of Natural Resources, Ecology and Management, Iowa State University, USA.

10. Kinetics of Enzyme Inhibition and Antihyperglycemic Effects of Hemp Seed (Cannabis sativa L.) Protein Hydrolysates. A. Girigiri1, C. Udenigwe2, L. Huan1,2, A. Adebiyi1,2, and R. Aluko1,3, University of Manitoba, Canada, 2Richardson Center for Functional Foods and Nutraceuticals, Canada.


12. Properties of Pea Protein Isolate with Pressure Treatment and Thermal Treatment. D. Chao1, S. Jung1, and R. Aluko1,3, ‘University of Manitoba, Canada, 2Dept. of Food Science and Human Nutrition, Iowa State University, USA, 3Richardson Centre for Functional Foods and Nutraceuticals, Canada.

13. Rapeseeds: A Potent Feedstock for High-valued Biomolecules Production using Green Processes. L. Leitner1,2, R. Kapel1,2, L. Muniglia1,2, ‘LRGP, UPR CNRS 3349, France, 2LiBio, France.
S&D-P: Surfactants and Detergents Posters
Chair: M. Wint, Amway Corporation, USA

Hall A • Authors present during Tuesday reception

   O. Thiengchanya 1, S. Chavadej 2, J.F. Scamehorn 2, and V. Tantayakom 2, ‘Chulalongkorn University, Thailand, ‘The University of Oklahoma, USA, ‘PTT Chemical Company Ltd., Thailand.

2. Microemulsion Formation of Motor Oil by Using Alcohol Ethoxylate without Alcohol.

   S. Brijmohan and R. Christie, Momentive Performance Materials, USA.

4. Study of Interactions between Bentonite and Functionalized Polymers in a Simulated Wash Environment.
   C. Rojas, AMCOL International Corp., USA.

5. Automatic Dishwasher Detergents, Challenges in the Builder System.
   H. Kola, Battelle, USA.

6. Biosurfactant Production by Aureobasidium pullulans with Alternatives Inducers.

   H. Mirhosseini, B.T. Amid, and C.P. Tan, University Putra Malaysia, Malaysia.

8. Saponification of Peanut Oil and Its Cell Cytotoxicity.


10. Analysis of Brazilian Clays as Adsorbent for Surfactants.
    F.R. Valenzuela-Diaz 1, A. Almeida 2, E.A. Hildebrand 1, J.B.A. Salgado 2, S.G. Dantas 2, and M.G. Silva-Valenzuela 1, ‘Poytechnic School, University of São Paulo, Brazil, ‘Pegmatech-Especialidades Tecnológicas Ltda, Brazil.

    D. Bajpai, H.B.T.I., India.

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ADF Engineering

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Miamisburg, OH 45342, USA
www.adfengineering.com

ADF Engineering is a leading provider of process engineering solutions for the food, feed, biofuel, and bioscience industries. We offer process, structural, piping, electrical engineering, and project management services at four strategic US locations. ADF provides cost-effective engineering solutions for our clients, including many Fortune 500 companies. The ADF team of talented engineers uses cutting edge engineering tools for process modeling and design. We offer expertise in oilseeds processing, surfactants, fatty acids, and biodiesel.

**Product/Service Category:** Processing/Manufacturing; Equipment Supplies and Services; Consultants and Other Services

---

Agmet LLC

521
7800 Medusa Street
Oakwood Village, OH 44146, USA
www.agmet1.com

Agmet is a leader in recycling metal bearing materials which include nickel, cobalt, copper, and tin. As a processor, we have been available to recycle our customers' materials in every economic marketing condition with a continuing commitment to manage our customers' environmental liability responsibly every step of the way.

**Product/Service Category:** Processing/Manufacturing; Equipment Supplies and Services; Non-Edible Products Supplies and Services

---

Alfa Laval Inc.

217
955 Mearns Road
Warminster, PA 18974, USA
www.alfalaval.us/fatsandoils

Alfa Laval is a global supplier and an innovative partner to industries that handle all types of vegetable fats and oils. Our scope of supplies includes engineering services and equipment for complete processing lines such as degumming, neutralization, bleaching, deodorization, interesterification, fractionation, hydrogenation, and biofuels production. Our components include the standard-setting PX range of disk stack centrifuges, decanters, the market-leading range of heat exchange products including condensers and evaporators, the groundbreaking SoftColumn continuous deodorizer, and the new SoftFlex semi-continuous deodorizer.

**Product/Service Category:** Processing/Manufacturing; Equipment Supplies and Services

---

The American Emu Association (AEA) is dedicated to developing structural support for the emu industry in the U.S. and abroad. The AEA works to promote emu products, provide educational services to members, and support research and development. The AEA is committed to the growth and development of the emu industry and to providing a strong voice for emu producers.

**Product/Service Category:** Processing/Manufacturing; Equipment Supplies and Services
and visionary leadership for the emu industry. The AEA represents an alternative agricultural industry, dominated by the small farmer, who is committed to humane and environmentally positive practices that produce high-quality, beneficial products. Formed in 1989, the AEA is a national, member driven, non-profit agricultural association dedicated to the emu industry. AEA promotes public awareness of emu products, fosters research, and publishes a bi-monthly newsletter and several industry brochures.

**Product/Service Category:** Scientific or Trade Association

**Anderson International Corp.**

316

6200 Harvard Avenue

Cleveland, OH 44105, USA

www.andersonintl.net

Anderson, the original inventor of the Expeller® Press and Expander-Extruder-Cooker™ Oilseed Process Machinery, will display their latest energy-efficient, continuous mechanical cooking and extraction systems for both full-press and solvent extraction preparatory systems. Featured will be the Dox/Hivex™ for full press applications and Hivex™ Series Expanders as energy efficient replacement of expensive prepressing in solvent system preparatory systems.

**Product/Service Category:** Manufacturing: Equipment Supplies and Services

**ANKOM Technology**

117

2052 O’Neil Road

Macedon, NY 14502, USA

www.ankom.com

ANKOM Technology manufactures and markets analytical instrumentation for the food and feed industry. ANKOM is best known for the development of Filter Bag Technology (FBT) for determining Detergent and Crude Fiber, as well as Crude and Total Fat in feeds, foods, and other samples. Each instrument offers various degrees of automation and pricing to meet the needs of diverse laboratories. AOCs approved, the ANKOM extraction systems increase sample throughput, decrease solvent usage (up to 97%), eliminate technician variability, and provide precise and accurate results. ANKOM also has systems for measuring gas production during anaerobic digestion. Talk to us about developments in TDF automation.

**Product/Service Category:** Instrumentation and Analytical Technology

**Artisan Industries Inc.**

204

73 Pond Street

Waltham, MA 02451-4594, USA

www.artisanind.com

Artisan Industries has helped the world’s leading food processors improve and create products through our innovative separation solutions. Our 70 years of separations expertise with thin-film evaporation and stripping technologies can be applied to concentrating, drying, desolventizing, and deodorizing heat sensitive and viscous foods, nutraceuticals, and edible oils. Don’t forget to stop at our booth and learn about our experience in the biodiesel industry, specifically, our glycerin refining and fatty acid stripping processes.

**Product/Service Category:** Food Technology and Ingredients; Processing/Manufacturing: Equipment Supplies and Services

**BASF Corporation**

327

25 Middlesex-Essex Turnpike

Iselin, NJ 08830, USA

www.catalysts.basf.com

BASF’s Catalysts division is the world’s leading supplier of environmental and process catalysts offering exceptional expertise in the development of technologies that protect the air, produce the fuels that power our world, and ensure efficient production of a wide variety of chemicals, plastics, and other products. By leveraging our industry-leading R&D platforms, passion for innovation, and deep knowledge of precious and base metals, we develop unique, proprietary catalyst and adsorbent solutions that drive customer success.

**Product/Service Category:** Processing/ Manufacturing: Equipment Supplies and Services

**Bioactives World Forum and Smart Short Courses—Filtration and Membrane World**

619

309-C Manuel Drive

College Station, TX 77840, USA

www.bioactivesworld.com

Bioactives World Forum and Smart Short Courses are specialized to organize short courses, technical workshops, international conferences, and technical meetings in the nutraceuticals and functional foods area. Additional services provided include software development, electronic publishing/cataloging, and publication of newsletters. Filtration and Membrane World is dedicated to solving complex separation problems through innovative and cost-effective solutions. Please visit our websites for better understanding of our businesses: www.bioactivesworld.com, www.membraneworld.com, and www.smartshortcourses.com.

**Product/Service Category:** Food Technology and Ingredients; Processing/Manufacturing: Equipment Supplies and Services; Publishers; Consultants and Other Services

**Bruker Optics Inc.**

113

19 Fortune Drive

Billerica, MA 01821, USA

www.brukeroptics.com

Bruker offers dedicated FTIR, NIR, and bench-top NMR analyzers for trait, edible oil, and biodiesel quality control recommended by the AOCs standards.

**Product/Service Category:** Instrumentation and Analytical Technology
Buhler Inc.
320
P.O. Box 9497
Minneapolis, MN 55440-9497, USA
www.buhlergroup.com

Buhler provides a complete line of oilseed processing equipment, including ship unloading, precleaning, conveying, storage, oilseed preparation (low- and high-protein meal), large-capacity craking and flaking mills, extraction meal grinding, pelletizing, and meal-bagging. We provide solutions for you no matter your requirements: upgrading your existing plant, automation engineering and controls, engineering, or single machines. Buhler: the solution behind the solution.

Product/Service Category: Processing/
Manufacturing: Equipment Supplies and Services

Carlson Consulting Engineers, LLC
518
76 Vardon Way
Farmingdale, NJ 07727, USA

Carlson Consulting Engineers is truly your “one stop” for innovative, expert help in the production and processing of fats and oils. The Carlson professional team services clients throughout the United States and Canada as well as the European market. Engineering services offered include operations consulting, new facilities design/start-up, troubleshooting and process improvements such as deodorizers, interesterification, bleaching, and debottlenecking. Nationally recognized throughout the industry, Kenneth A. Carlson, President & Founder, has over 30 years of “hands on” manufacturing process design and operational experience in the foods and vegetable oils industries. Our client roster includes many of the top companies in food and vegetable oils, pharmaceutical, and chemical industries. We represent internationally recognized manufacturer, C.M. Bernardini, maker of affordable, high-quality European process equipment. Please visit with us at our booth to schedule an appointment for an on-site plant evaluation and quote.

Product/Service Category: Processing/
Manufacturing: Equipment Supplies and Services

The Chemithon Corporation
512
5430 W. Marginal Way SW
Seattle, WA 98106-1598, USA
www.chemithon.com

Chemithon developed the first continuous sulfonation process and today has “Green” MES systems that are the most productive and profitable worldwide. Chemithon holds hundreds of chemical process and equipment patents related to detergent, specialty chemical, EOR, and power industries. Core areas of expertise include sulfonation, powder production, liquid blending, offsites, fractionation, hydrogenation, ethoxylation, and technical services. Partners: Chemithon International Pte. Ltd., Singapore; Chemithon Engineers Pvt. Ltd., Mumbai; IIT Srl, Italy; Binacchi & Co., Italy; Mitsui Plant Systems, Tokyo.

Product/Service Category: Non-Edible Products’ Supplies and Services

Cognis Corporation—QTA, a BASF Company
325
4900 Este Ave.
Cincinnati, OH 45232, USA
www.qta.com

The QTA® (Quality Trait Analysis) System is a service providing rapid, on-site quality analysis. We combine highly advanced Infrared instrumentation with a quick and easy user interface, enabling anyone to perform many analyses on a single sample within two minutes, usually with no sample preparation. The QTA System method, AOCs Ck 2-09, has been fully validated through ASTM D6708 and ISO 5725 statistical protocols, in comparison to ASTM D6751 referee methods for biodiesel B100.

Product/Service Category: Instrumentation and Analytical Technology

Cosun Biobased Products
216
P.O. Box 3411
Breda, 4800MG, The Netherlands
www.cosunbiobased.com

Cosun Biobased Products is the world’s main manufacturer of Carboxy Methyl Inulin (brandname: Carboxyline® CMI), a green scale inhibitor used in various detergents and water treatment products. CMI offers a unique combination of sequestration and dispersing properties. It is a threshold scale inhibitor for CaCO3, CaSO4, BaSO4, and SrSO4 scaling with excellent calcium tolerance and high water solubility. The business scope of CBP is the development, manufacturing, and marketing of renewable products for non-food applications.

Product/Service Category: Non-Edible Products’ Supplies and Services

CPM Roskamp Champion/NHM
210
2975 Airline Circle
Waterloo, IA 50703, USA
www.cpmroskamp.com or www.nhmoore.com

CPM Roskamp Champion provides complete design and supply services for oilseed and vegetable oil processing worldwide. Specializing in corn fractionation, preparation, extraction, refining, biodiesel, and oleochemical technology, we have worked to develop advanced processing technology to improve your bottom line. Our engineered approach to reliable system design makes life easier for processing professionals who desire increased capacity, lower steam/utility usage, and improved finished product quality. For more information, visit us at Booth 411 or www.crowniron.com.

Product/Service Category: Processing/
Manufacturing: Equipment Supplies and Services

Crown Iron Works Company
411
P.O. Box 1364
Minneapolis, MN 55440, USA
www.crowniron.com

Crown Iron Works provides complete design and supply services for oilseed and vegetable oil processing worldwide. Specializing in corn fractionation, preparation, extraction, refining, biodiesel, and oleochemical technology, we have worked to develop advanced processing technology to improve your bottom line. Our engineered approach to reliable system design makes life easier for processing professionals who desire increased capacity, lower steam/utility usage, and improved finished product quality. For more information, visit us at Booth 411 or www.crowniron.com.

Product/Service Category: Processing/
Manufacturing: Equipment Supplies and Services

Danisco USA Inc.
419
Four New Century Parkway
New Century, KS 66031, USA
www.danisco.com/ingredients

Danisco will highlight trans-free technology, emulsifiers, and antioxidant products at the 102nd AOCS Annual Meeting and Expo. Danisco also offers an extensive range of lipid—“soluble” or water-dispersible antioxidant blends. Newer technologies, such as trans-free quality solutions
Desmet Ballestra North America
310
450 Franklin Road, Suite 170
Marietta, GA 30067, USA
www.desmetballestra.com

Desmet Ballestra is the global solution provider for the edible oils and fats, surfactants, detergents, oleochemicals, biodiesel, glycerin, and soap industries. In the oils and fats sector, it has a full range of process equipment and services, including seed preparation equipment, mechanical and solvent extraction, oil processing, and fat modification. Recent innovations are in screw pressing, desolventizing, deodorization, fractionation, interesterification, dry-ice condensing, MES, and biodiesel.

Product/Service Category: Food Technology and Ingredients

Dionex Corporation
516
P.O. Box 3603
Sunnyvale, CA 94088-3603, USA
www.dionex.com

Dionex Corporation provides sample extraction (ASE®) and liquid chromatography (IC and HPLC/UHPLC) instruments and solutions to separate, isolate, and identify components of chemical mixtures. In addition, our line of Corona® Charged Aerosol Detectors (Corona CAD® and Corona ultra™) provide the power to detect trace-level impurities with universal detection for the measurement of fats, oils, biofuels, surfactants, carbohydrates, and non- or semi-volatile molecules, including ions. Dionex solutions are used by producers, suppliers, and regulators to comply with ASTM and US EPA regulations.

Product/Service Category: Instrumentation and Analytical Technology

The Dupps Company
208
548 N. Cherry Street
Germantown, OH 45327, USA
www.duppps.com

Processors grow their oil extraction profits with the high-volume, advanced technology Dupps soybean press. The Dupps oilseed press, which is ideal for identity-preserved crop products, can process up to 100 tons per day and increase profit by producing as low as 5% residuals. Dupps screw presses are also used to produce high-bypass protein meal from soybeans. Dupps systems allow processors to provide a consistent 60% level of bypass protein, giving dairy farmers a predictable and efficient way to balance rations for their stock.

Product/Service Category: Processing/Manufacturing: Equipment, Supplies, and Services

Emery Oleochemicals
720
4900 Este Avenue
Cincinnati, OH 45232, USA
www.emeryoleo.com

Emery Oleochemicals is a global leader in the supply of fatty acids, glycerine, dibasic acids, and polyols from naturally-derived renewable sources. These oleochemical products are fundamental to virtually every type of manufacturing across a broad range of industries. The production of adhesives, cosmetics, detergents, foods, paints, coatings, papers, pharmaceuticals, fragrances, shampoos, plastics, lubricants, and agricultural chemicals all require either oleochemical basic building blocks like fatty acids and glycerine or our specialty dic acids and polyols.

Product/Service Category: Non-Edible Products’ Supplies and Services

Fenix Process Technologies Pvt. Ltd.
310
4900 Este Avenue
Pune, Maharashtra, 411004, India
www.fenix.in

We have more than thirty years of cumulative experience in designing complete systems for edible oil refining, oleochemicals production, biodiesel production, distillation, absorption, extraction, and oil and gas processing. Our state-of-the-art manufacturing unit possesses an integrated engineering capability to fabricate/manufacture most of the equipment needed for the above systems. Our aim is to provide customized solutions with enhanced performance efficiency at a low cost. We deliver superior products with performance guarantee.

Product/Service Category: Processing/Manufacturing: Equipment Supplies and Services

French Oil Mill Machinery Company
817
P.O. Box 920
Piqua, OH 45356-0920, USA
http://www.frenchoil.com/oilseed-equipment.shtml

The French Oil Mill Machinery Company manufactures industrial process machinery, including equipment for the extraction of vegetable oil from oil-bearing seeds and nuts, in either prepress or full-press applications. French offers cracking mills, flaking mills, conditioners, screw presses, oil settling tanks, and more. Prepress and full-press systems can be supplied, including purchased auxiliary equipment such as magnets, cleaners, cake coolers and grinders, oil filtration equipment, tanks, pumps, instrumentation, conveyors, and control systems.

Product/Service Category: Processing/Manufacturing: Equipment Supplies and Services
GEA Process Engineering

211
9165 Rumsey Road
Columbia, MD 21045, USA
www.nirolnc.com

GEA Process Engineering features the advanced Atlas Dry Condensing Systems for low-pressure vapor removal. Advantages include: low energy consumption where energy usage is only 10–20%, compared to steam ejectors; reduced pollution because the carried-over products are contained in the condensed water—enabling an easy separation; and very low water consumption.

Product/Service Category: Manufacturing: Equipment Supplies and Services

GEA Westfalia Separator

209
100 Fairway Court
Northvale, NJ 07647, USA
www.wsus.com

GEA Westfalia Separator designs and manufactures centrifuges for the fats and oils industry, including edible oil, biodiesel, oleochemical, and soap processing. Separators and decanters are used in edible oils for clarification, degumming, caustic refining, and winterization; in biodiesel for glycerine separation and water washing; in oleochemicals for glycerine, monoglyceride, sweet water, and other separation and clarification applications; and for soap production.

Product/Service Category: Manufacturing: Equipment Supplies and Services

Genencor®, A Danisco Division

421
P.O. Box 218
2300 AE Leiden, The Netherlands
www.genencor.com

Genencor®, a division of Danisco A/S, is a world leading enzyme supplier. The industries we serve range from biofuels and laundry detergents to animal nutrition and food. Genencor is part of the large Danisco A/S global group, with a sales and distribution network that spans more than 40 countries. The division employs about 1500 people worldwide.

Product/Service Category: Manufacturing: Equipment Supplies and Services; Non-Edible Products’ Supplies and Services

Glas-Col, LLC

219
711 Hulman Street
Terre Haute, IN 47802, USA
www.glascol.com

The new Microcentrifuge Tube Mixer replicates finger vortexing with green technology. We excel with concentrators and evaporators for quick, efficient removal of solvents. Glas-Col offers one of the largest selections of heating mantles and custom heating jackets in the world, plus a full line of temperature controls and monitors. Glas-Col, LLC offers a range of safety accessories, such as glovebags, safety shields, flow monitors, and lead stability products.

Product/Service Category: Instrumentation and Analytical Technology; Processing/Manufacturing: Equipment Supplies and Services

Grace Davison

212
7500 Grace Drive
Columbia, MD 21044, USA

Grace is a global supplier of specialty catalysts, adsorbents, and additives for the petrochemical, pharmaceutical, and renewable industries. Founded in 1854, Grace has operations in over 40 countries. Grace Davison offers Trisyl® silica for oil purification for edible oil and biodiesel applications, EnRich® catalysts for biodiesel and renewable diesel production, and the Reveleris® flash chromatography system with RevealX™ technology for purification of challenging compounds such as oils and lipids.

Product/Service Category: Instrumentation and Analytical Technology; Processing/Manufacturing: Equipment Supplies and Services

Graham Corporation

508
20 Florence Avenue
Batavia, NY 14020, USA
www.graham-mfg.com

Graham Corporation supplies steam ejectors, condensers, liquid-ring vacuum pumps, plate heat exchangers, and freeze condensation systems.

Product/Service Category: Processing/Manufacturing: Equipment Supplies and Services

Harburg-Freudenberger Maschinenbau GmbH

424
Seevestrasse 1
D-21079 Hamburg, Germany
www.h-f-group.com

Harburg-Freudenberger (HF) offers oilseed preparation equipment, screw presses, and pressing plants, as well as refinery plants. With more than 160 years experience, HF is the world leader for its press technology. By steady research and development HF continuously provides the most modern state-of-the-art technology for machines and presses. With its own manufacturing facilities, optimal quality control is ensured. After-sales service for high-quality spare and wear parts completes the program.

Product/Service Category: Processing/Manufacturing: Equipment Supplies and Services

IKA Works, Inc.

402
2635 Northchase Parkway SE
Wilmington, NC 83405-7419, USA
www.ikausa.com

IKA® WORKS, Inc. is a worldwide manufacturer of mixing and dispersing equipment. IKA® provides a complete line of batch and in-line mixing process equipment for a variety of applications in the chemical, food, beverage, pharmaceutical, coatings, personal care, and cosmetics industries. The comprehensive IKA program emphasizes scale-up from laboratory to processing plants, with applications for mixing, dispersing, homogenizing, grinding, emulsifying, size reduction, and kneading.

Product/Service Category: Instrumentation and Analytical Technology; Processing/Manufacturing: Equipment Supplies and Services

InCon Processing, LLC

405
970 Douglas Road
Batavia, IL 60510, USA
www.incontech.com

InCon Processing is the leading provider of high-vacuum distillation operating in our own toll processing plant. We have developed technology kernels around high-vacuum distillation, molecular distillation, Wiped-Film Evaporation, and Short-Path Evaporation. InCon has developed a proprietary process to concentrate Omega-3...
fish oil up to 70% and is the largest contract manufacturer of Omega-3 fish oil in the USA. InCon expanded capacity by 75% in the past year.

Product/Service Category: Processing/Manufacturing: Equipment Supplies and Services

**Jedson Engineering**

119
5300 DuPont Circle
Milford, OH 45150, USA
www.jedson.com

Kalsec® is the leader in natural oxidation management, provides a wide range of natural antioxidants including Herbalox® XT, a low-flavor, low-odour antioxidant ideal for oil and other flavor sensitive applications. This formulation provides you with flexibility to increase the amount of natural antioxidant you use, thus increasing your shelf life capabilities. Kalsec®. +1 800-323-9320 or www.kalsec.com.

Product/Service Category: Food Technology and Ingredients

**Körging Hannover AG**

417
Badenstedter Str. 56
30453 Hannover, Germany
www.koerting.de

Körging steam jet ejectors operate in virtually every process stage of edible oil production (deodorizing, physical refining, bleaching, drying, extraction, esterification, hydrogenation), as well as in the Biodiesel Industries, where they accomplish a decisive part in securing high-quality end products. Besides the conventional barometric vacuum systems, Körging supplies alternative systems with minimized water and air pollution and lowest energy consumption, such as ice condensation or systems operating in a closed alkaline circle (ACL).

Product/Service Category: Processing/Manufacturing: Equipment, Supplies, and Services

**LCI Corporation**

621
4433 Chesapeake Drive
Charlotte, NC 28216, USA
www.lcicorp.com

LCI Corporation pioneered thin-film evaporation’s application to lecithin drying (soy and sunflower seed) with many installations worldwide, including the growing South American market. TFE’s short residence time and turbulent film provide low moisture levels while preserving good color. LCI short-path evaporation allows distilling high-value products, such as specialty oils, Omega-3 fatty acids, tocopherols, and sterols at pressures down to .001 mbar. LCI technologies are also used in gycerin recovery and biodiesel applications.

Product/Service Category: Instrumentation and Analytical Technology

**LEEM Filtration**

220
25 Arrow Road
Ramsey, NJ 07446, USA
www.leemfiltration.com

Product/Service Category: Processing/Manufacturing: Equipment Supplies and Services

**Leica Microsystems**

401
1600 Leider Lane
Buffalo Grove, IL 60089, USA
www.leica-microsystems.com

Product/Service Category: Instrumentation and Analytical Technology

**Long Beach Convention & Visitors Bureau**

827
301 E. Ocean Boulevard, Suite 1900
Long Beach, CA 90802 USA
www.visitchongbeach.com

**Lovibond Tintometer/Orbeco-Hellige, Inc.**

524
6456 Parkland Drive
Sarasota, FL 34243-4036, USA
www.orbeco.com

Lovibond Tintometer/Orbeco-Hellige, Inc. supplies innovative color measurement systems for industries where accurate color measurement is important for the quality control of products. The instruments and certified reference materials comply with international test methods and standards such as AOCS, DIN, ASTM, and ISO. Our latest developments include the PFxi spectrophotometer for liquid color analysis with the ability for Remote Calibration and Maintenance Service via internet (RCMSi).

Product/Service Category: Instrumentation and Analytical Technology

**MAHLE Industrial Filtration USA, Inc.**

716
428 North Elm, P.O. Box 678
Nowata, OK 74048, USA
www.mahle-industrialfiltration.com

MAHLE Industrial Filtration is known internationally for its superior quality, high efficiency, and value. MAHLE products provide solutions for industrial liquid and gas filtration applications, including food, biofuels, chemicals, petrochemicals, and water. MAHLE Industrial Filtration, with Amafilter, Nowata, and ProGuard brand products, provides a wide range of expertise in highly engineered and custom-designed pressure filter vessels in a variety of materials, which gives us the edge in designing the filter system that meets your exacting demands.

Product/Service Category: Processing/Manufacturing: Equipment Supplies and Services

**Malaysian Palm Oil Board**

616
3516 International Court, NW
Washington, DC 20008, USA
www.mpob.gov.my

The Technical Advisory Services office of the Malaysian Palm Oil Board in Washington DC offers customer support and technical advisory services to users and potential users of Malaysian palm and palm kernel oil products in the United States, Canada, and Latin America. The office also acts as a one-stop information center for Malaysian palm and palm kernel oil products.

Product/Service Category: Consultants and Other Services; Scientific or Trade Association
The following group of elite professionals ultimately support the future of AOCS by growing its membership. The President’s Club embraces AOCS members who lead the Society in their membership recruitment efforts through the Member-Get-a-Member campaign. Since 1973, AOCS has annually recognized the outstanding recruitment abilities of its members.

Psst...

Recruit a new member during the meeting → get a President’s Club mug.*

*Includes coupons for free coffee each day of the meeting.
**Metrohm USA**

224  
6555 Pelican Creek Circle  
Riverview, FL 33578, USA  
www.metrohmusa.com

Metrohm USA meets all of your ASTM-testing requirements with time- and cost-saving titration and ion chromatography systems, customizable process analyzers, pH/ion meters and electrodes, instruments for voltammetry measurements, oxidative stability testing and liquid dosing/dispensing. Quickly and easily analyze acid number, water content, sulfate, chloride and more. Our extensive local sales and service teams as well as our fully functional applications labs provide you with the best application support and services.

**Product/Service Category:** Instrumentation and Analytical Technology; Food Technology and Ingredients; Non-Edible Products’ Supplies and Services

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**Mikrolab Aarhus A/S**

218  
Axel Kiers Vej 34  
Hojbjerg, DK-8270, Denmark  
www.mikrolab.dk

The ML Oxipres and Oxigraph compare the resistance to auto-oxidation for oil, fat, food, and flavor. The latest Version 3 of the Paralog software for collecting and handling data will also be introduced and updates will be given at the booth.

**Product/Service Category:** Instrumentation and Analytical Technology

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**Myers Vacuum Distillation Division**

618  
1155 Myers Lane  
Kittanning, PA 16201, USA  
www.myers-vacuum.com

Myers Vacuum is a supplier of centrifugal molecular short path stills for processing heat-sensitive, high-molecular-weight material. Examples are: emu oil, vitamins, wool grease, edible, and “essential fats and oils.” This is a unique process with the least amount of heat decomposition and takes less than one second on a heated surface.

**Product/Service Category:** Processing/Manufacturing; Equipment Supplies and Services

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**Nealanders International Inc.**

500  
6980 Creditview Road  
Mississauga, ON L5N 8E2, Canada  
www.nealanders.com

Nealanders International is a food ingredient manufacturer and distributor with leadership in wellness, specializing in release agents, antioxidants, custom liquid and dry blending and custom packaging. We are the largest distributor of specialty food ingredients in Canada by both size and breadth of product offering. Nealanders has extensive R&D capabilities for product development with full technical and regulatory support including FDA/CFIA (food claims) and NHP certification (Functional Nutraceuticals). In addition, we have a fully qualified and technical sales force. Nealanders has facilities located across the United States and Canada. Please contact us at +1 800-263-1939 and let us provide you with “ingredients for your success.”

**Product/Service Category:** Food Technology and Ingredients

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**Oil-Dri Corporation of America**

517  
410 N. Michigan Avenue, Suite 400  
Chicago, IL 60611, USA  
www.pure-flo.com

Oil-Dri Corporation of America offers a full spectrum of specialty adsorbents, including Pure-Flo®, Pure-Flo® Supreme, and Perform®; leaching clays for the purification of fats, oils, and oleochemicals. Oil-Dri’s Select® for biodiesel products filters out impurities in conjunction with or in place of water wash treatment. With a full line of innovative and highly effective bleaching products, Oil-Dri delivers product quality, cost effectiveness, and technical support to edible oil and biodiesel producers around the world.

**Product/Service Category:** Processing/Manufacturing; Equipment Supplies and Services; Non-Edible Products’ Supplies and Services

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**Novozymes**

203  
77 Perry Chapel Church Road  
Franklin, NC 27525, USA  
www.novozymes.com

Novozymes is the world leader in bio-innovation. Together with customers across a broad array of industries we create tomorrow’s industrial bio-solutions, improving our customers’ business and the use of our planet’s resources. Read more at www.novozymes.com.

**Product/Service Category:** Food Technology and Ingredients; Processing/Manufacturing; Equipment Supplies and Services; Non-Edible Products’ Supplies and Services

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**Oils & Fats International**

526  
Quartz Business Media, Westgate House, 120-130 Station Road  
Redhill, Surrey RH1 1ET, UK  
www.oilsandfatsinternational.com

The Oils & Fats International (OFI) portfolio comprises publications, exhibitions, and websites which together offer unparalleled communications, coverage, and connections. The portfolio is targeted for decision-makers, specifiers, buyers, and buying influencers in the highly diversified and globalized edible oils and fats marketplace. The OFI exhibitions—currently OFI Middle East and OFI Asia—offer face-to-face interaction, education, communication, and business opportunities. Oils & Fats International is the flagship publication, generally recognized as the only market-leading publication dedicated to edible oils and fats. It boasts news, biographies, trading and shipping information, storage and technology round-ups, as well as regular features. The circulation is constantly maintained to ensure high-quality circulation data. Other publications include specially themed issues such as biofuels and non-English-language issues. The OFI portfolio offers an unrivalled wealth of...
Are you rolling the dice with your lab’s integrity?

Stay accredited, preserve lab reputation and achieve excellence with AOCS Methods—your trusted analytical resource since 1909.

Order today at www.aocs.org/Methods and choose the format to meet your needs.

Book of Methods | Online Individual Methods | E-Access | Licensing
expertise and experience, breadth of coverage, and an international audience.

**Product/Service Category:** Consultants and Other Services, Publishers

**optek-Danulat, Inc.**

109 N118W18748 Bunsen Drive
Germantown, WI 53022, USA
www.optek.com

Optimize process performance while improving oil yields and quality by continuous in-line monitoring with optek photometric analyzers. Common applications include filtration control, chlorophyll concentration, AOCS color measurements, nickel catalyst monitoring, raw incoming oil, and more. Drastically reduce operating costs by reducing losses and rework. In-line, real-time measurements minimize QA/QC sampling and time-consuming lab analysis. Also, reduce utility usage, water usage, waste treatment costs, and municipal BOD levels. For more info, visit www.optek.com.

**Product/Service Category:** Instrumentation and Analytical Technology

**Oxford Instruments America**

111
300 Baker Avenue, Suite 150
Concord, MA 01742-2124, USA
www.oxford-instruments.com

Oxford Instruments Magnetic Resonance develops and manufactures cost-effective benchtop analyzers based on Nuclear Magnetic Resonance (NMR) for fast, easy, solvent-free measurement of oil, fat, and moisture. The MQC analyzers are used for determining the oil content of olives, oilseeds, snack foods, animal feed, and for measuring SFC in chocolate, margarine, and other foods. They are also used to measure spin-finish coatings on fibers, and for various petrochemical and polymer applications.

**Product/Service Category:** Instrumentation and Analytical Technology

**Pattyn Packing Lines nv**

625
Hoge Hul 4-6-8
Bruges, 8000 Belgium
www.pattyn.com

Pattyn Packing Lines has more than 30 years of extensive experience in polybag lining solutions. We guarantee the very best handling, weighfilling, and packing of your oils and fats into lined cases, tins, drums, or pails. Our subsidiary office, Pattyn North America, LLC in Wisconsin, offers you local support and services from the project design and project management to the installation and after-sales service.

**Product/Service Category:** Processing/Manufacturing: Equipment Supplies and Services

**Perten Instruments**

617
6444 S. 6th Street
Springfield, IL 62712, USA
www.perten.com

On-line and at-line NIR analysis of oilseeds, oils, and co-products for multiple parameters (moisture, oil, fatty acids, protein, and fiber). Use this info to make critical purchasing and processing decisions, tighten safety margins, and maximize profitability. Our instruments are based on state-of-the-art diode array technology and are fast, accurate, easy-to-use, and versatile. We help you implement and maintain your instruments and calibrations for optimal return of investment.

**Product/Service Category:** Instrumentation and Analytical Technology; Processing/Manufacturing: Equipment Supplies and Services; Non-Edible Products’ Supplies and Services

**Pittcon 2012**

213
300 Penn Center Blvd., Ste. 332
Pittsburgh, PA 15235, USA
www.pittcon.org

Pittcon 2012, the world’s largest annual conference and exposition for laboratory science, March 11–16, 2012, Orlando, Florida. Pittcon offers the latest innovations from nearly 1,000 exhibitors, unique networking opportunities with world-renowned scientists, and exceptional educational opportunities. See all that Pittcon 2012 has to offer at www.pittcon.org.

**Product/Service Category:** Instrumentation and Analytical Technology; Food Technology and Ingredients; Processing/Manufacturing: Equipment Supplies and Services; Consultants and Other Services

**Process Plus**

520
1340 Kemper Meadow Drive
Cincinnati, OH 45240, USA
www.processplus.com

Our tagline here at Process Plus is “Our process revolves around you.” We design each project around our client’s needs and expectations. Process Plus is a multi-disciplined engineering firm that provides process engineering, conceptual studies, definition engineering, detailed design, construction support, and start-up support to the chemical, food and beverage, pharmaceutical, and consumer products industries. The skill and technical competence of

**Product/Service Category:** Consultants and Other Services; Scientific or Trade Association

**Pope Scientific, Inc.**

825
351 N. Dekora Woods Boulevard
Saukville, WI 53080, USA
www.popeinc.com

Applied research organization with over three decades experience in process development, analytical services, and toll processing. Eleven laboratories and five large pilot plant processing areas for grams to tonnes extraction, fractionation, modification, and purification of bio-based materials including algae and yeast-based biomass. Regulatory compliance and quality assurance measures: ISO 9001:2000 certification, Health Canada NHP Site License, Health Canada CFIA Site License, cGMP, HACCP, and full traceability systems. We offer in-house scientific, engineering, technical, operations, materials management, and maintenance staff.

**Product/Service Category:** Instrumentation and Analytical Technology; Food Technology and Ingredients; Processing/Manufacturing: Equipment Supplies and Services; Consultants and Other Services

**POS Bio-Sciences**

409
118 Veterinary Road
Saskatoon, SK S7N 2R4
Canada
www.pos.ca

Applied research organization with over three decades experience in process development, analytical services, and toll processing. Eleven laboratories and five large pilot plant processing areas for grams to tonnes extraction, fractionation, modification, and purification of bio-based materials including algae and yeast-based biomass. Regulatory compliance and quality assurance measures: ISO 9001:2000 certification, Health Canada NHP Site License, Health Canada CFIA Site License, cGMP, HACCP, and full traceability systems. We offer in-house scientific, engineering, technical, operations, materials management, and maintenance staff.

**Product/Service Category:** Instrumentation and Analytical Technology; Food Technology and Ingredients; Processing/Manufacturing: Equipment Supplies and Services; Consultants and Other Services

**Process Plus**

520
1340 Kemper Meadow Drive
Cincinnati, OH 45240, USA
www.processplus.com

Our tagline here at Process Plus is “Our process revolves around you.” We design each project around our client’s needs and expectations. Process Plus is a multi-disciplined engineering firm that provides process engineering, conceptual studies, definition engineering, detailed design, construction support, and start-up support to the chemical, food and beverage, pharmaceutical, and consumer products industries. The skill and technical competence of

**Product/Service Category:** Consultants and Other Services; Scientific or Trade Association

**Pope Scientific, Inc.**

825
351 N. Dekora Woods Boulevard
Saukville, WI 53080, USA
www.popeinc.com

Applied research organization with over three decades experience in process development, analytical services, and toll processing. Eleven laboratories and five large pilot plant processing areas for grams to tonnes extraction, fractionation, modification, and purification of bio-based materials including algae and yeast-based biomass. Regulatory compliance and quality assurance measures: ISO 9001:2000 certification, Health Canada NHP Site License, Health Canada CFIA Site License, cGMP, HACCP, and full traceability systems. We offer in-house scientific, engineering, technical, operations, materials management, and maintenance staff.

**Product/Service Category:** Instrumentation and Analytical Technology; Food Technology and Ingredients; Processing/Manufacturing: Equipment Supplies and Services; Consultants and Other Services

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our team has earned Process Plus the respect of companies around the world.

Product/Service Category: Processing/Manufacturing: Equipment Supplies and Services; Non-Edible Products’ Supplies and Services; Consultants and Other Services

Purac America, Inc.
308
111 Barclay Boulevard
Lincolnshire, IL 60069, USA
www.purac.com

ROTEX Global
819
1230 Knowlton Street
Cincinnati, OH 45223, USA
www.rotex.com

For more than 100 years, ROTEX has been a pioneer and global leader in the development of screening equipment and technology for the process industries. ROTEX engineers and manufactures a full line of leading-edge screening equipment, feeders, conveyors, and automated analyzers serving a global market in such industries as chemical processing, food processing, mineral processing, plastic compounding, and agribusiness.

Product/Service Category: Processing/Manufacturing: Equipment Supplies and Services

Rudolph Research Analytical
125
55 Newburgh Road
Hackettstown, NJ 07840, USA
www.rudolphresearch.com

Rudolph Research Analytical manufactures two instruments relevant to the edible oil industry. The J Series Automatic Refractometer has been purchased by edible oil refiners and crushers to replace older manual (Abbe) instruments, because the J Series measures at the high temperatures required without a waterbath; is an automatic operation, no operator judgment needed; and can directly read in iodine value. The DDM 2911 Density Meter is designed to meet ASTM D4052, the main density standard used by both biodiesel and petrodiesel manufacturers. This instrument offers automatic measurement at the required temperature, VideoView™ system for bubble detection, and network data storage.

Product/Service Category: Instrumentation and Analytical Technology

Solex Thermal Science Inc.
305
100, 3595 114th Avenue SE
Calgary, AB T2Z 3X2, Canada
www.solexthermal.com

Solex technology for drying and conditioning bulk solids offers efficiencies of greater than 90%. It works by using indirect plate heating technology to keep bulk solid temperatures hot while introducing a small amount of cross-flow air to remove moisture from the product. The technology offers unprecedented efficiency and process control.

Product/Service Category: Food Technology and Ingredients; Processing/Manufacturing: Equipment Supplies and Services

Springer
301
233 Spring Street
New York City, NY 10013, USA
www.springer.com

Springer—along with publishing the three technical AOCs Journals—offers insightful, sought-after content from the world’s most prestigious scientists. Highlights of the portfolio include journals such as “Analytical and Bioanalytical Chemistry” and the “Journal of Materials Science,” as well as references, texts, and online book series, including the renowned “Advances in Polymer Science”

Product/Service Category: Publishers

SPX Flow Technology
202
611 Sugar Creek Road
Delavan, WI 53538, USA
www.spft.com

Gerstenberg Schröder (an SPX brand) designs, manufactures, and supplies scraped surface heat exchangers and emulsification equipment as well as complete processing lines for the margarine, edible fats, dairy, and related food industries. Our primary goal is to design, supply and support solutions that perfectly meet your needs.

Product/Service Category: Processing/Manufacturing: Equipment, Supplies, and Services

Surface Chemists of Florida, Inc.
504
P.O. Box 2304
Jupiter, FL 33468, USA
www.surfacechemists.com

SCF, Inc. is a research and development laboratory with over 40 years experience in product development and problem solving in technologies where surface and polymer chemistry are the basic sciences. In addition to its research and development activity, SCF sells specialty chemicals for a range of applications under the SURTECH trade name. Many of the products are developed or formulated in cooperation with its customers and address their needs specifically and effectively.

Product/Service Category: Non-Edible Products’ Supplies and Services; Consultants and Other Services

Thermo Scientific
627
5225 Verona Road
Madison, WI 53711, USA
www.thermoscientific.com

Thermo Scientific products provide solutions used by producers, suppliers, terminal operators and regulators to comply with ASTM and EPA regulations. Our FT-IR technology is used to provide fast and accurate analyses of biodiesels and biodiesel content in blends with petrodiesels. We also have solutions for the analysis of biodiesel components using NIR, GC, GC/MS, and ICP.

Product/Service Category: Non-Edible Products’ Supplies and Services

Thermphos USA
724
702 Clydesdale Ave.
Anniston, AL 36201, USA
www.thermphos.com

Thermphos is one of the world’s largest producers of phosphorus, phosphoric acid, phosphates, phosphonates, and phosphorus derivatives. Customers around the world rely on our high-quality products for applications in a variety of markets such as pharmaceuticals, hygiene, industrial and household cleaning, water treatment, and food. Thermphos also produces green polymers for applications such as laundry, autodish, hard surface, oilfield, pulp paper, and
other industries. Thermphos is the producer of Dequest products worldwide.

**Product/Service Category:** Non-Edible Products’ Supplies and Services

**TMC Industries, Inc.**

105
1423 Mill Lane
Waconia, MN 55387-1044, USA
www.tmcindustries.com

TMC Industries Inc. is an industry leader in contract manufacturing with more than 25 years experience. We can successfully process edible oils, waxes, and specialty chemicals utilizing thin film molecular distillation (MD) and multi-plate fractionation on a pilot and production scale.

**Product/Service Category:** Processing/Manufacturing: Equipment Supplies and Services; Non-Edible Products’ Supplies and Services

**Sponsor**

**United Soybean Board**

103
2715 Ashman Street
Midland, MI 48640, USA
www.soynewuses.org

The United Soybean Board (USB) is a farmer-funded organization working with industry, academia, and government to commercialize industrial soy-based products and technologies in the plastics, lubricants, coatings, adhesives, fibers, and solvents markets. The USB represents more than 600,000 US soybean farmers, with industry, academia, and government to commercialize industrial soy-based products and technologies in the plastics, lubricants, coatings, adhesives, and solvents markets. The USB represents over 600,000 US soybean farmers.

**Verenium**

404
4955 Directors Place
San Diego, CA 92121, USA
www.verenium.com

Verenium Corporation is a leader in the development and commercialization of cellulosic ethanol, an environmentally friendly and renewable transportation fuel, as well as high-performance specialty enzymes for applications within the biofuels, industrial, and health and nutrition markets. The company possesses integrated, end-to-end capabilities in pre-treatment, novel enzyme development, fermentation, engineering, and project development and is moving rapidly to commercialize its proprietary technology for the production of ethanol from a wide array of feedstocks, including sugarcane bagasse, dedicated energy crops, agricultural waste, and wood products. In addition to the vast potential for biofuels, a multitude of large-scale industrial opportunities exist for Verenium for products derived from the production of low-cost, biomass-derived sugars. Verenium’s specialty enzyme business harnesses the power of enzymes to create a broad range of specialty products to meet high-value commercial needs. Verenium’s world class R&D organization is renowned for its capabilities in the rapid screening, identification, and expression of enzymes-proteins that act as the catalysts of biochemical reactions.

**Product/Service Category:** Processing/Manufacturing: Equipment Supplies and Services; Non-Edible Products’ Supplies and Services

**Wacker Chemical Corporation**

121
3301 Sutton Road
Adrian, MI 49221, USA
www.wacker.com

Wacker is a technology leader in the chemical and semiconductor industries and a worldwide innovation partner to customers in many key global sectors, including defoaming additives for detergents, fabric care, softening and anti-wrinkling laundry additives, carpet care, hard surface care, food-grade defoamers and many other medical, industrial, and high-tech applications.

**Product/Service Category:** Food Technology and Ingredients; Processing/Manufacturing: Equipment Supplies and Services; Non-Edible Products’ Supplies and Services

**Waters Corporation**

400
34 Maple Street
Milford, MA 01757, USA
www.waters.com

For over 50 years, Waters Corporation has created business advantages for laboratory-dependent organizations. By delivering practical and sustainable scientific innovation, Waters enables significant advancements in such areas as healthcare delivery, environmental management, food safety and analysis, and water quality worldwide. Waters offers the most complete line of supercritical extraction and chromatography equipment on the market, with scales ranging from analytical and process/prep scale.

**Product/Service Category:** Instrumentation and Analytical Technology
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