

4th BIOBASED CHEMICALS COMMERCIALIZATION & PARTNERING

- NOVEL TECHNOLOGIES & PLATFORMS IN BIOBASED CHEMICAL PRODUCTION
- END USER APPLICATIONS & OPPORTUNITIES FOR BIOBASED CHEMICALS
- SECURING FUNDING & STRATEGIC PARTNERSHIPS
- PANEL DISCUSSION: FUNDING OPPORTUNITIES - WHAT'S HOT IN VENTURE CAPITAL?
- CONSUMER PRODUCTS & PACKAGING APPLICATIONS
- TRENDS & CHALLENGES IN COMMERCIAL SCALE UP
- ADVANTAGEOUS FEEDSTOCK FOR BIOCHEMICAL COMMERCIALIZATION

Keynote Speakers:

Todd Werpy
Vice President
ADM

John P. Ranieri
Vice President
DuPont Industrial Biosciences

Featured Speaker:

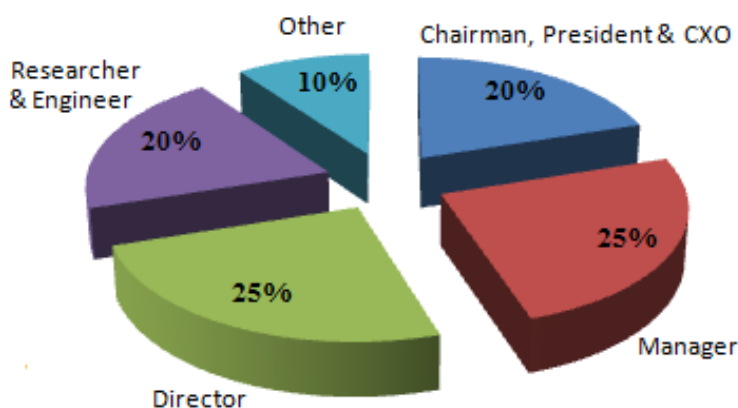
Kaj Johnson
Senior Director, Product Development
Method Products



About Biobased Chemicals: Commercialization & Partnering

GTC is proud to present its 4th Annual Biobased Chemicals Commercialization & Partnering Conference. With **90-110 anticipated attendees** this conference will examine new supply chain developments and business models being adopted for bringing biobased chemicals products to market. Topics covered include novel chemical production platforms, advantageous feedstock, end user applications, securing funding and strategic partnerships, and the trends and challenges in commercial scale up. Development updates from renewable chemical companies, biofuel companies and end market consumers will be discussing innovations in the science, technology and end-market development of biobased chemicals, polymers and plastics. Get the latest updates from investment, scientific, manufacturer and business perspectives - the highlights and the challenges to making big new things happen with special emphasis on commercialization!

2012 Demographics



2012 Attending Companies

ADM	Equilex BV	Metabolix, Inc.	SK INNOVATION
Amyris	Flagship Ventures	Michigan State University	Solazyme
AOC	Freeslate	Mitsubishi Research Institute	Sumitomo Corp of America
BASF	Genomatica	Momentive Specialty Chemicals	Synthetic Genomics
Battelle	Gevo	Myriant Corporation	TBS Ltd
Bayer MaterialScience	Greenyug, LLC	Novo Nordisk Foundation	Technology & Innovation
Cargill	Haldor Topsoe	Center for Biosustainability	Teijin Holdings USA, Inc.
CBiRC, Biorenewable	Harvard University	Novozymes, Inc.	The Dow Chemical Company
Chemicals for a Sustainable Future	Johnson Matthey	OPX Biotechnologies	ThermoFisher Scientific
Celanese Corporation	Joule Unlimited	Owens Corning	TOPAS Advanced Polymers
Ceres	Koch Modular Process Systems, LLC	OXEA Corporation	Toray Industries (America), Inc.
Chemtex	Kyowa Hakko Bio Co., Ltd.	POET	Toray Industries, Inc.
Codexis	LanzaTech	POET Research, Inc.	University of Delaware
Colorado Center for Biorefining & Biofuels (C2B2)	LS9	Praxair	USDA
DSM	Lubrizol Advanced Materials Manufacturing	Proterro	Verdezyne
DSM Venturing	Spain, S.L.	Rennovia, Inc.	Viridia
DuPont	Lux Research	Segetis	Virent
	MASCO		Wolfensohn & Co.
			ZeaChem

For sponsorship and exhibit information contact:

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Day 1 - Monday, September 16, 2013

7:00 **Registration & Continental Breakfast**

7:55 **Welcome & Opening Remarks**

KEYNOTE PRESENTATION

8:00 **Toward a New Generation of Renewable Fuels and Chemicals**



Todd Werpy
Vice President, Research & Development
ADM

As one of the world's largest agricultural processors, Archer Daniels Midland Company connects the harvest to the home to meet the vital food and energy needs of a growing global population. The same operations that enable ADM to produce hundreds of food ingredients from farmers' crops also provide it with the scale and expertise to efficiently produce renewable fuels and chemicals. The company is a leading producer of corn ethanol and biodiesel, and in recent years, it has also formed strategic alliances with academic, industry and government partners aimed at developing a new generation of advanced biofuels made from lower-value agricultural resources, including the stalks, cobs and leaves that remain on corn farmers' fields after harvest. At the same time, ADM has been working to broaden its portfolio of alternatives to petroleum-based chemicals and industrial products. In this presentation, Dr. Todd A. Werpy, ADM Vice President Research & Development, will offer an overview of the company's biofuel research partnerships, discuss some of the pilot projects under way, and describe ADM's efforts to develop both direct, drop-in replacements for commonly used chemicals as well as novel chemicals made from bioadvantaged molecules.

Novel Technologies & Platforms in Bio-Based Chemical Production

Moderator: TBA

8:45 Mark Bunger, Research Director, **Lux Research**

9:10 **Scale-Up and Commercialization of Bio-Based Adipic Acid and HMD**

Tom Boussie, Vice President, Corporate Development, **Rennovia**

Rennovia is a private company based in Menlo Park, CA developing chemical catalytic process technologies for cost-advantaged production of existing petrochemical products from bio-based feedstocks. Rennovia has developed processes for the production of adipic acid (AA) and hexamethylenediamine (HMD) from sugars. Rennovia's process technology offers significant production cost advantage over conventional petro-based technologies, and as well provides a greatly reduced carbon footprint and other environmental benefits. Rennovia's bio-based AA and HMD products have wide application in polyurethanes, polyesters, and non-phthalate plasticizers, and together enable for the first time production of 100% bio-based nylon-6,6.

This presentation will describe:

- Rennovia's approach to renewable chemicals production, including AA and HMD
- Projected cost advantage of bio-based AA and HMD over petro-based products
- Environmental benefits of Rennovia vs. petro-based AA and HMD production
- Current status of AA and HMD technology development
- Scale-up and commercialization pathways for both products

9:35 **Developing the Value Chain to Advance New Levulinic Ketals and Levulinic Derivatives**

Atul Thakrar, President & Chief Executive Officer, **Segetis**

Levulinic acid and levulinate esters are readily derived from cellulose, hemi-cellulose, or starch feedstocks. The

discovery of highly selective ketalization of alkyl levulinates is enabling the development of novel bio-derived monomers and derivatives with wide-ranging applications. Levulinic ketal esters bring many unique and desirable traits to polymer-based products; for example, when compounded in PVC, they bring efficient plasticization with low migration. Incorporated in liquid formulations, they bring broad solvency and excellent solvent coupling. This talk will focus on Segetis' efforts to commercialize this versatile levulinic ketal platform and stimulate the LA value chain.

Benefits:

1. Commercialization of new technology
2. Partnering across the value chain
3. Renewable chemistry from thermochemical conversion processes
4. Scale-up of new processes for economies of scale

10:00 **Morning Networking Break**

10:30 **Creating the Bio Refinery of the Future**

Tjerk de Ruiter, President & Chief Executive Officer, **LS9**

Using Nature's Advantaged Fatty Acid Metabolism: LS9's Passion is to catalyze a Rapid and Widespread transition to Renewables. To make this happen, we use Nature's Advantaged Fatty Acid Metabolism and combine it with novel Biosynthetic Pathways to create a library of product specific biocatalysts. This technology allows us to control chain length, branching, saturation and chemical groups to produce a wide range of product families, all in a single cell. This platform enables the production of a wide range of products from vehicle-ready fuels to chemicals for lubricants, detergents and personal care. With feed stock flexibility and all products using the same simple manufacturing process, LS9 creates the Bio refinery of the future.

LS9 Creates the Bio Refinery of the Future

- Provides diversity
- Feedstock flexible
- Simple scalable process
- Attractive markets

10:55 **Mango Materials The Use of Waste Methane For The Production of a Novel, Biodegradable, Biobased Plastic**

Anne Schauer-Gimenez, Director of Biological Research, **Mango Materials**

End User Applications & Opportunities for Biobased Chemicals

Moderator: TBA

11:20 Oliver Peoples, Vice President, Technology, **Metabolix**

11:45 Karl Sanford, Vice President, Technology Development, **Genencor** and Research Fellow, **Dupont**

12:10 **Lunch On Your Own**

1:40 **Biorefinery Strategies for Optimizing Value for Agriculturally Derived Feedstocks**

William Orts, Research Leader, Bioproduct Chemistry & Engineering, **USDA, Agricultural Research Service, Western Regional Research Center**

The goal of the USDA Biorefining group is to work with the industry to enable new, commercially-preferred technologies for conversion of agricultural materials to fuels, value-added co-products and other biobased products. The research team based in Albany, California is developing biorefinery strategies relevant to the Western US with emphasis on development of (1) biomass feedstocks prevalent in the West, (2) new value-added chemicals, (3) composites and nanocomposites, and (4) biopolymers. Recent work has revolved around development of the "Generation 1.5 Biorefinery" in which processes are combined to provide fermentative production of marketable products from both sugar/starch feedstocks and its associated plant fiber (grain fiber, stover, bagasse, etc.) wastes within the same facility. Such facilities can utilize sugar sources, agricultural-waste and/or food-processing wastes to produce value-added products including C2 alcohols, ketones, aldehydes, carboxylic acids, aromatics, as well as specialty co-products such as xylitol, sorbitol, mannitol, eugenol, and isosorbide.

2:05 **BioFene™ as a Feedstock for Chemicals, Polymers, and Plastic Additives**

Susan Schofer, Scientist, **Amyris**

Securing Funding & Strategic Partnerships

Moderator: TBA

2:30 **PROESA™ - Cost Effective Sugars for the Production of Fuels and Chemicals from Biomass**

Kevin Gray, Vice President, Biobased Chemicals, **Chemtex**

Since 2006 Chemtex has invested approximately \$200 million in the development of PROESA™. The process is designed to provide low-cost, high quality 2nd generation sugars readily convertible into bio-fuels and/or bio-chemicals. PROESA™ integrates an energy efficient, chemical-free biomass pretreatment operation and a novel viscosity reduction and enzymatic hydrolysis step. The unique configuration ensures limited formation of degradation products that could lower yield and inhibit (bio)catalyst performance. The technology is designed to guarantee flexible operations with multiple feedstocks and to maximize sugar recovery. Indeed, one of the features of PROESA™ is the opportunity to process a number of different biomass types ranging from energy crops (such as Arundo donax, fiber sorghum, etc.), agricultural residues (corn stover, wheat straw, etc.), woody biomass (eucalyptus and poplar) and industrial by-products (e.g. sugar cane bagasse) without the necessity to change hardware. Chemtex has engineered and constructed a 1 dry ton/day biomass processing pilot facility in Rivalta, Italy integrating all unit operations required to convert lignocellulosic biomass into fuels and/or chemicals. Chemtex has partnerships with three leading bioconversion companies, Genomatica, Codexis, and Gevo, to integrate PROESA™ with downstream processes to produce value-added chemicals. In addition Chemtex has completed the construction of one of the world's first commercial scale cellulosic ethanol plants in Crescentino, Italy. This plant is designed to produce approximately 20 million gallons of ethanol from a combination of agricultural residues and energy crops and is currently being started up.

2:55 **Biobased Chemical Project Finance Considerations**

John May, Managing Director, **Stern Brothers & Co.**

Project Finance Fundamentals

- Current State of the Bank Market
- Typical Project Finance Structure
- Project Structure Mitigates Project Risk
- Project Capitalization
- Successful Financing Requires Systematic Approach
- At Financial Close

Project Finance Execution

- Sources and Uses
- Private Placement Memorandum
- Independent Engineer Report
- Timetable
- Project Finance Waterfall
- Case Study – Project Finance Credit Quality

Stern Brothers & Co – Alternative Energy Finance Group

- Our People
- Our Projects

3:20 **Afternoon Networking Break**

3:50 Michael Rosenberg, Vice President, Business Development, **OPX Biotechnologies**

4:15 **Institutional Entrepreneurial Innovation in Sustainability**

David Berry, Partner, **Flagship Ventures**; Founder, **Joule Unlimited**; Co-Founder, **LS9**

The three largest issues for mankind today are food, water, and energy. As the world's population and resource needs increase, new solutions are necessary for a sustainable planet. This has created a unique opportunity. The way we think about food, water, and energy needs to change across the globe, and has opened the door for innovation. Flagship Ventures, through its VentureLabs unit, focused Institutional Entrepreneurial Innovation, allows for fundamental exploration of major challenges and the introduction of new solutions in the form of ventures. VentureLabs

has founded a multitude of leading companies in the sustainability space including Joule Unlimited and Pronutra.

Panel Discussion: Funding Opportunities – What's Hot in Venture Capital

Moderator: TBA

4:40 Panelist: Mark Gudiksen, Principal, **TPG Biotech**

Panelist: TBD

Panelist: TBD

Panelist: TBD

5:20 **Oral Presentations from Exemplary Submitted Abstracts**

To be considered for an oral presentation, please submit an abstract [here](#) by August 16, 2013. Selected presentations will be based on quality of abstract and availability. Presentation slots fill up fast so please submit your abstract ASAP.

5:50 **Networking Reception & Poster Session**

Day 2 - Tuesday, September 17, 2013

7:30 **Continental Breakfast**

8:00 **KEYNOTE PRESENTATION**



John P. Ranieri
Vice President
DuPont Industrial Biosciences

Consumer Products & Packaging Applications

Moderator: TBA

8:45 **FEATURED PRESENTATION**

Kaj Johnson
Green Chef
Method Products

9:10 **Partnership in Innovation Using Biobased Chemicals**

Tom Fahlen, Associate Research Fellow, Advanced Technology, **Clorox**

The Clorox Company is committed to responsible product development and environmental stewardship. Working with an open innovation mind-set, we are interested in partnerships that can enable incorporation of bio-based materials in our products. With cost pressures on consumer packaged goods, we reason that the justification for bio-based chemistry in our products will come from novel benefits that are unique to the source and/or engineering of biomolecules for specific functions. We are interested in exploring bio-based packaging materials, surfactant systems, antimicrobial compounds, food additives, and other functional ingredients that may deliver unique benefits. This talk is intended to serve as a conversation starter on how we approach open innovation and where we see potential for mutually beneficial collaboration incorporating bio-based chemistry into Clorox products.

Trends & Challenges in Commercial Scale Up

Moderator: TBA

9:35 Randy Cortright, Executive Vice President, Founder & Chief Technology Officer, **Virent**

10:00 **Morning Networking Break**

10:30 **Challenges and Successes in Commercial Scale Lactic Acid Production for Renewable Plastic, PLA**
Pirkko Suominen, Assistant Vice President & Director Biotechnology Development, **Cargill**

10:55 William Baum, Executive Chairman & Chief Business Development Officer, **Genomatica**

11:20 Vonnie Estes, Managing Director, **GranBio**

Advantageous Feedstock for Biochemical Commercialization

Moderator: TBA

11:45 Bob Walsh, Chief Commercial Officer, **Zechem**

12:10 **Lunch Provided by GTC**

1:10 Kenneth Davenport, Chief Technology Officer, **Chromatin**

1:35 **Successful Production of Petro-Replacement Chemicals from Renewable Feedstocks**
Arne Duss, Senior Vice President, Strategy & Corporate Development, **Myriant**

2:00 Spence Swayze, Director, Business Development, **Ceres**

2:25 Philippe Lavielle, Chief Executive Officer, **Virdia**

2:50 **Conference Concludes**

REGISTRATION FORM

Fax to: 626-466-4433

Mail to: GTC, 635 W. Foothill Blvd, Monrovia, CA 91016



Use this form to register up to 3 attendees – Please **TYPE** or **PRINT** your responses clearly

Attendee #1

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Job Title _____
Department _____
Organization _____
Mailing Address _____
City, State & Zip Code _____
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Name _____
Job Title _____
Department _____
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Department _____
Organization SAME AS ATTENDEE #1
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NAME OF CONFERENCE ATTENDING: 4th BIOBASED CHEMICALS: COMMERCIALIZATION & PARTNERING

PRICING OPTIONS:

	<i>Pricing per Attendee</i>	<i>Discounted Rate before 7/16/2013</i>	<i>Pay for 2, Bring a 3rd Person Free!</i>
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HOW DID YOU HEAR ABOUT THIS CONFERENCE: 2013 Brochure

CANCELLATIONS

All cancellations will be subject to a \$195 cancellation fee. In order to receive a refund, you must submit a written notice of cancellation (by letter or fax) no later than 6 weeks prior to the conference. We regret that refunds will not be issued after this date. A conference voucher will be issued for use at any future GTC conferences within 12 months of cancellation. If you plan on sending a substitution in your place, the substitution must be from the same organization. Please notify GTC of any substitutions as soon as possible so the proper preparations can be arranged. In the event of a conference cancellation, GTC is not liable for transportation, hotel, or other costs incurred by registrants.

*Checks must be drawn on a US bank and made payable to Global Technology Community, or GTC. International money orders are also acceptable.

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