

# 22-23 April 2008 / BANGKOK The Westin Grande Sukhumvit "Commercialisation Prospects - Feedstocks Availability, Enzymes Technology, Water Purification Issues & Processing Challenges" "Major developments in BioButanol"

promotion partners



















Optional 3rd day site Visits to Commercial Cassava fields and Rayong Field Crops Research Institute. Please register early.

## How You Will Benefit

You will attain a comprehensive grounding in Ethanol Production from 1st & 2nd Generation Feedstocks

- Production Processes from various feedstocks and how they affect ethanol quality
- Cellulosic Ethanol Manufacture, Economics, Technical Aspects
- State of Cellulosic Ethanol Technologies Worldwide
- Parameters influencing the Economics and Efficiency of Cellulosic ethanol Production from Diverse Crop
- Certification of Sustainability for export
- Quality Inspection along the logistics chain
- Ethanol Capacities in the region
- Most popular ethanol feedstocks in the region Cassava, Sweet Sorghum and potential of palm fruit branches, rice husks
- Purification of Ethanol and new developments in membrane technology
- Biobutanol and how it will impact the ethanol market

# COURSE LEADER Cesar B. Granda, Ph.D.

Dr. Granda has been involved with biomass conversion to chemicals and fuels since 1997 conducting research in almost all unit operations of the process. He has experience in the sugar industry as well. Many technical publications and patents in these areas have resulted.

In his research, he has been involved in the preservation of sugarcane juice for processing into sugar and ethanol, pretreatment of sorghum & sugarcane fiber to increase biological digestibility, enzymatic degradation of sugarcane fibers into simple sugars for ethanol production, mixed & fermentation of lignocellulosic residues, conversion of organic acids and salts into alcohols (isopropanol and ethanol).

## WHO SHOULD ATTEND

- Supply/Operations Executives/Analysts of Oil & Gas Majors
- Oil Trader's Assistants for Quality control and Blending
- Business, Planning & New Managers of Ethanol and Biodiesel Producers
- Ethanol Investors, Traders & Financiers & Risk Managers
- Sales and Marketing Executives of Food/ Agriculture and Industrial Biotechnology Corporations
- Sales and Marketing Executives of Additives and Enzymes Companies
- Commercial Managers of Shipping, Terminal, Logistics & Tanker Operations
- Middle/New Executives in Biofuels Technology and R&D
- Feedstock and Biomass Suppliers of Sugarcane, Corn/Maize, Sorghum etc
- Managers & Technical Executives incharge of Biofuels STARTUPs

## Day 1

## Tuesday, 22<sup>nd</sup> April 2008

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### 9:00 INTRODUCTION TO TYPES AND METHODS FOR PRODUCING BIOFUELS. ETHANOL AS A BIOFUEL

#### **ETHANOL PRODUCTION**

Brief Introduction to Mature technologies

- Squeezed sugar (Sugarcane)
  - Process description
- Starch (Corn)
  - Process description
- Distillation
  - Alcoholic distillation, description, capacities
- Anhydrous ethanol production
- Water removal from using membranes
- · Yields /Overall process energetics

## 10:00 CURRENT REGIONAL ETHANOL CAPACITY, PLANNED PROJECTS

Chris de Lavigne, VP Growth Consulting, Industrial Practice, AP Frost & Sullivan

10:30 Discussion followed by Coffee

## 11:00 HOW PRODUCT QUALITY IS DETERMINED BY FEEDSTOCKS AND PLANT

- Creating large scale plantation basics
- Economics and process optimization strategies

#### **FOCUS ON ASIA'S PROMISING FEEDSTOCKS**

i) Sweet Sorghum

Dr. Belum Reddy, Principal Scientist ICRISAT (Intl Crops Research Insti for Semi Arid Tropics)

#### ii) Cassava

 Recent commercial developments of Cassava-Ethanol processing

Dr. Reinhardt Howeler

**CIAT (International Center for Tropical Agriculture)** 

Program topics, speakers and schedules published herein are confirmed as at printing time. Please refer to the event's timetable page at www.cmtevents.com for the most up-to-date information.

		Day	2		
12:00	GOVERNMENT POLICIES FOR BIOFUELS AND THE USE OF VARIOUS FEEDSTOCKS FOR FUEL-ETHANOL PRODUCTION IN THAILAND Dr. Samai Jai-In, National Coordinator - Biofuels MTEC (Metal & Material Technology Center)		ETHANOL PRODUCTION FROM LIGNOCELLULOSE i) Gasification followed by Catalysis • Economics/yields • Description of processes	3:30 4:00	CERTIFICATION OF SUSTAINABILITY & QUALITY ALONG THE LOGISTICS CHAIN Senior Representative SGS RECENT DEVELOPMENTS IN
12:30	LATEST TECHNOLOGIES IN CONVERTING CASSAVA ROOTS INTO ANHYDROUS ETHANOL Dr. Klanarong Sriroth, Specialist and Leader of a Cassava Starch Laboratory Kasetsart University	10:00 10:30	ii) Gasification followed by ethanol fermentation (Gaddy process)  Discussion followed by Coffee  iii) Lignocellulose hydrolysis processes	4:30	BIOBUTANOL Dr. Cesar Granda Final Discussion. Close of Conference
1:00	Discussion followed by Lunch		followed by ethanol fermentation <ul><li>Acid hydrolysis</li></ul>	Day	
2:15	POTENTIAL USE OF CASSAVA FOR FUEL ETHANOL PRODUCTION IN NIGERIA  How the role of cassava in Africa is going to change from a food crop to an important industrial crop  Cassava Investor in Nigeria	11:30	Enzymatic hydrolysis     Pretreatment technologies for enhancing biodigestibility     Ethanologenic microorganisms  BREAKTHROUGHS IN CELLULOSIC ENZYMES TECHNOLOGY	Thursd 7:30	ay, 24 <sup>th</sup> April 2008  Full Day Site Visit (Fee: USD100) 7:30am - 6:00pm  Gather at Lobby to depart for Payong province
2:45	<ul><li>CELLULOSIC ETHANOL</li><li>Historic background of cellulosic ethanol</li><li>Importance of establishing a cellulosic-ethanol</li></ul>	12:00	Inviting: Major Enzyme Company  Discussion followed by Lunch	10:00	Rayong province  Arrive at Commercial Cassava fields
	<ul> <li>economy</li> <li>Potential feedstock &amp; yields - sugarcane bagasse &amp; trash, corn straw (stover), rice straw, wheat straw, rice husks, municipal solid waste, sewage sludge, manure (cattle, poultry, swine), wood chips, switch grass</li> <li>Characteristics of lignocellulose</li> <li>Some incentives for implementing cellulosic ethanol         <ul> <li>Agricultural waste burning phase out</li> </ul> </li> </ul>	2:00	iv) Lignocellulose hydrolysis followed by Acetic-acid fermentation with downstream Chemical transformation into ethanol (the Zeachem process) • Rationale: Acetic-acid fermentation vs. ethanol fermentation v) Mixed-acid fermentation of lignocellulose followed by downstream chemical transformation into ethanol		Visit the Rayong Fields Crop Research Int. The center is currently evaluating over 600 cassava varieties recently introduced from CIAT in Colombia; crossing these with some of the best local varieties to produce higher yielding new varieties. Also they have recently identified and have released for commercial planting a new variety that produces exceptionally high ethanol yields
	<ul> <li>Lignocellulose yields</li> <li>Environmental impact of using wastes</li> <li>Potential ethanol yield from lignocellulosic sources</li> </ul>		<ul> <li>and higher-alcohols (the MixAlco process)</li> <li>Alcohols conversion to gasoline, diesel and jet fuel</li> </ul>	12:30 2:00	Lunch  Visit Starch factory, chipping & drying factories nearby
	<ul> <li>High-productivity crops (energy cane, Miscanthus hybrids, sweet sorghum, water hyacinth)</li> </ul>	3:00	ADVANCED MEMBRANE TECHNOLOGY FOR ETHANOL DEWATERING	3:00	Depart for Bangkok
	<ul> <li>Harvesting, transportation and storage strategies (efficiency and economics)</li> <li>Dr. Cesar Granda</li> </ul>		Willy Yeo, Assistant VP Hyflux Pty Ltd	6:00	Back in Westin Grande Sukhumvit

## **NexGen BioEthanol**

Update your details at www.cmtevents.com

22-23 April 2008 | BANGKOK

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Register for (pls tick)

- conference
- □ plus field trip (at USD100 extra)

Fees: The full Registration Fee includes cost of all sessions, luncheon, coffee/tea & documentation.

USD1,395	USD1,095 (MIN SAVINGS OF USD900)			
1 Person	Group fee for 3 or more* (from the same company)			

<sup>\*</sup> Terms and conditions apply.

Cancellations, Refunds & Transfers: A full refund will be promptly made for all written cancellations 3 weeks before the meeting. Thereafter, cancellations are not refundable. A substitute may be made at any time.

#### TO REGISTER

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Cut off Date for Room Booking: 1 April 2008

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Photocopy Registration Form to Preserve Brochure Copy. Apr 2008

# **BiofuelsWorld**

Manila, The Philippines / 13-14 May

Conference covering biofuel developments in Asia, standards and sustainability, 2nd generation feedstock, process technologies.

Includes optional workshop on ALGAE

# **NexGen BioEthanol**

Geneva, Switzerland / 28-29 May

# <sup>2nd</sup> JatrophaWorld

Miami, Florida / 10-11 June

Timely meeting for the emerging global jatropha industry

With growing interests in the Americas, CMT is bringing JatrophaWorld to where the action is. Be sure to join us next in Miami.

# 3rd BTLtec Europe

(Biomass to Liquids)

Gothenburg, Sweden / 13-14 October