

76th Annual Meeting of Sugar Industry Technologists 2017

Sugar Industry Technologists, Inc. Volume LXXVI

Tainan, Taiwan
7 - 10 May 2017

ISBN: 978-1-5108-5388-1

Printed from e-media with permission by:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571



Some format issues inherent in the e-media version may also appear in this print version.

Copyright© (xxxx) by Sugar Industry Technologists Inc. (SIT)
All rights reserved.

Printed by Curran Associates, Inc. (xxxx)

For permission requests, please contact Sugar Industry Technologists Inc. (SIT)
at the address below.

Sugar Industry Technologists Inc. (SIT)
4032 Captiva Row
Myrtle Beach, South Carolina 29579
USA

Phone: +1 863 983 3637
Fax: +1 843 796 4743

SITcontact@sucrose.com

Additional copies of this publication are available from:

Curran Associates, Inc.
57 Morehouse Lane
Red Hook, NY 12571 USA
Phone: 845-758-0400
Fax: 845-758-2633
Email: curran@proceedings.com
Web: www.proceedings.com

TABLE OF CONTENTS

Foreword	
Officers, Committees, 2016 - 2017	
Officers, Committees, 2017 - 2018	
Directors, 2017 – 2018	
Past Presidents	
Joe Harrison Memorial Scholarship Award - 2016	
The Frank Chapman Memorial Award – 2016	
The George and Eleanore Meade Award - 2016	
S.I.T. Crystal Award – Peter Maraia	
History	

TECHNICAL PRESENTATIONS

Paper 1152	Welcome Address 1 Keynote Speakers: Dr. Chih-Kung Lee, Minister of Economic Affairs, Taiwan, R.O.C. and Mr. Charles Huang, Chairman of Taiwan Sugar Corporation.
Paper 1153	Development of a Linear Pan Growth Approach.....3 Chris Mayhew, Carlton Haynes, Robert Howe, Craig Parker and Chris Rhoten, British Sugar and Escon America Inc.
Paper 1154	Dynamic Imaging Particle Analysis Applications in Sugar Production18 Alan O'Donoghue, JM Canty International Ltd.
Paper 1155	Relationships Between the Physical Forms of Starch and Performance of Carbonatation Clarification and Press Filtration at the Refinery 24 Marsha R. Cole, ^{1*} Gillian Eggleston, ¹ Eduardo Borges, ² Jack Thompson, ³ Thomas Rathke, ⁴ June Naiki, ⁵ Maria Diamond, ⁵ and Alexa Triplett ¹ ^{*1} USDA-ARS Southern Regional Research Center, 1100 Robert E. Lee Boulevard, New Orleans, LA, 70124, USA ² Fermentec, Ltda., Av. Antônia Pazzinato Sturion 1155, Piracicaba, São Paulo, Brazil 13420 ³ Louisiana Sugar Refining, LLC, 1230 5 th Ave, Gramercy, LA, 70052 USA ⁴ Imperial Sugar Company, 201 Oxnard Drive, Port Wentworth, GA, 31407, USA ⁵ American Sugar Refining, Inc., 7417 N Peters St. Arabi, LA, 70032, USA
Paper 1156	Conversion of Louisiana Sugar Factories Excess Bagasse into Synthesis Gas—A Visionary Research Project36 Jeffery Leblanc*, Ph. D. Researcher, City College of New York, Dr. William Chirdon, Associate Professor, University of Louisiana at Lafayette, Dr. Chung Chi Chou, President of Dr. Chou Technologies, Inc. Texas. * Corresponding author: Jeffery Leblanc
Paper 1157	Feasibility Studies of 3D Sugar Object by Additive Manufacturing 38

Yu-Hao Huang¹, Kai-Cheng Zhang¹, Jin-Xiang Huang¹, Wei-Hsiang Lai^{2*}, Tso-Lin Cheng²,
Tsung-Han Lin².

¹Department of Aeronautics and Astronautics, National Cheng Kung University

²Taiwan Sugar Research Institute, Taiwan Sugar Company, Taiwan

- Paper 1158 **Modification of the Recovery House Boiling Scheme to Improve Productivity46**
A.S. Vawda and A. E. Muneef, United Sugar Company, amuneef@savola.com
- Paper 1159 **Slow Calorie Sugar for Health Consciousness53**
Daisuke Tashiro, Product Development Section, Product Development Division,
Mitsui Sugar Co., Ltd., 30-1, Nihonbashi-Hakozakicho, Chuo-ku, Tokyo, 130-0015, Japan
- Paper 1160 **SYMPOSIUM: Energy Improvements in Sugar Refineries 59**
Chairman and Moderator: Paul Schorn, Tongaat Hulett Sugar South Africa, Ltd.
- Panelists: Peter Simpson, New Zealand Sugar Co.....71
 Indrajit Singh, Independent Consultant.....66
 David Love, Tongaat Hulett Sugar Ltd.....59
 Uwe Schwanke, BMA Braunschweigsche Maschinenbaunanstalt.....81
- Paper 1161 **Carbonatation Enhancement with High Performance Decolorant and
Adsorbants87**
Sarir, E.M.I and Pabon, B.R.
- Paper 1162 **Results from the Commercial Operation of a Fractal Shallow-Bed Ion Exchange
Decolorizer99**
S.D. Peacock¹, O. Tzschaetzsch², B-C. Schulze² & V. Kochergin¹
¹Amalgamated Research LLC, 2531 Orchard Drive East, Twin Falls, Idaho 83301, USA
²ESCON GmbH, Schlosstrasse 48a, 12165 Berlin, Germany
- Paper 1163 **Recent Advances in Rare Sugars and Potential Applications126**
Wei-Chun Liu^{1*}, ¹Bioprocess Engineering Division, Taiwan Sugar Research Institute,
Tainan 70176, Taiwan. *Corresponding Author: a05881@taisugar.com.tw
- Paper 1164 **Major New Insights into the Cause of Flocc Formation in Alcoholic Beverages Sweetened
with Refined Cane Sugars134**
Gillian Eggleston*, Alexa Triplett, and Eldwin St. Cyr
*USDA-ARS-Southern Regional Research Center, 1100 Robert E. Lee Boulevard
New Orleans, LA 70124, USA
- Paper 1165 **Cogeneration Enhancement Using Low Pressure Vapour for Crystallisation152**
Vivek Verma* and Dinesh Saini**
* Managing Director, Spray Engineering Devices Limited
** Team Leader, Spray Engineering Devices Limited
- Paper 1166 **Optimization of White Sugar Color Management through the Utilization of On-Line
Colorimeters with Video Monitoring162**
Catherine Bouché* and Norbert Duc, ITECA SOCADEI, 445 Rue Denis Papin, 13592
Aix en Provence, France
- Paper 1167 **A detailed view on the dextran induced processing problems172**
Abraham, K. ^{b,a}; Rohde, A. ^b.; Flöter, E. ^a
^aTechnical University Berlin, Berlin, Germany
^bSternenzym, Ahrensburg, Germany

Paper 1168	Application of Molecular Biotechnology in Detecting Sugarcane Pathogens183 Yu-Hsuan Chen ¹ , Li-Shyang Chen ² , Chin Sheng Hu ² , and I-Jen Huang ³ ¹ Taiwan Sugar Research Institute ² Taiwan Sugar Business Division ³ Taiwan Sugar Biotechnology business
Paper 1169	The use and development of image analysis on massecuites191 A. Wittenberg, R. Daniels, D. Nouws, Suiker Unie, The Netherlands
Paper 1170	Improvement in Sugarcane Growth Technology for the Sustained Development of the Sugar Manufacturing Industry — (1) Analysis of Sugarcane Growth in North-eastern Thailand—203 Osamu Yatabe, Product Development Department, Mitsui Sugar Co., Ltd., 36-2, Nihonbashi-Hakozakicho, Chuo-ku, Tokyo 103-8423, JAPAN

POSTERS:

Paper 1171	Aroma Analysis of Taisugar Dark Brown Sugar and Molasses211 Tso-Lin Cheng and Bo-Jhin Wu, Taiwan Sugar Corporation, Tainan, Taiwan.
Paper 1172	Treatment of the sweet water from filter cake in the sugar refinery220 Sheen Herng-Kuang ^{1,3} , Lin Yong-Hua ² 1: Research engineer, Sugar Business Division of Taiwan Sugar Corporation 2: Former deputy chief executive, Sugar Business Division of Taiwan Sugar Corporation 3: Correspondence to: Sheen Herng-Kuang, No. 54, Sheng-Chan Rd., Tainan, Taiwan, R.O.C.
Paper 1173	How Chemical Ripeners of Sugarcane Affect the Starch and Color Quality of Juices230 Gillian Eggleston ¹ , Alexa Triplett ¹ , Kaitlyn Didier ¹ , Eric Petrie ² , Eldwin St. Cyr ¹ and Gerald Myers ³ ¹ USDA-ARS-Southern Regional Research Center, 1100 Robert E. Lee Boulevard, New Orleans, LA 70124, USA ² USDA-ARS-SRRC-Sugarcane Research Unit, 5883 USDA Road, Houma, LA, USA ³ LSU Agricultural Center, School of Plant, Environment, and Soil Sciences, 104 MB Sturgis Hall, Baton Rouge, LA, USA
Paper 1174	Development of a Factory/Refinery Method to Measure Total, Soluble, and Insoluble Starch in Sugar Products242 Marsha R. Cole ^{1*} , Gillian Eggleston ¹ , and Deriesha Gaines ¹ ^{*1} USDA-ARS Southern Regional Research Center, 1100 Robert E. Lee Boulevard, New Orleans, LA, 70124, USA
Paper 1175	Pre-Carbonatation With Pure CO₂ – New Developments263 José Manuel Chorão, RAR – Refinarias de Açúcar Reunidas, Portugal
Paper 1176	Total Dissolved Solids Measurement for Sugar Leakage Detection in Condensate269 Seppo Kilpinen, K-Patents, Finland

Paper 1177	Molecular characterization of interspecific hybrids of sugarcane (<i>Saccharum</i> spp.) using SSR and RAPD markers	270
	Jian-Cheng Chang¹, Li-Shyang Chen², Tso-Lin Cheng²	
	1 Taiwan Sugar Research Institute, Tainan, Taiwan	
	2 Taiwan Sugar Corporation, Tainan, Taiwan	
Paper 1178	Survey of screen clothes – guideline to select the most suitable screen cloth for the specific screening task in the sugar industry	278
	Dipl.-Ing. Mario Gerards, RHEWUM GmbH, Germany	
Paper 1179	Multivariate methods to quantify key chemical traits of sugar crops	279
	Minori Uchimiya, USDA-ARS Southern Regional Research Center, New Orleans, LA 70124	

Roster of Delegates

Roster of Guests