

PROGRAM



Sunday, June 17th

Time	Event	Location
9:00 am- 2:00 pm	Short Course: "Mixing Fundamentals and Applications" (see program separately)	Maya Room Convention Center
2:30- 5:30 pm	Registration	Lobby Paraiso Beach
5:30- 6:30 pm	Welcome Cocktail	Kiosk, Shopping Center
6:30- 7:30 pm	Welcome Dinner	Restaurante Buffet "El Mercado"

Convention Center, "Quintana Roo" Room

7:30 pm	Welcome and Opening Comments from Conference Chair Enrique Galindo, Instituto de Biotecnología, UNAM, México
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Session 1: Novel Experimental Methods in Mixing

Chairs: Piero Armenante, New Jersey Institute of Technology, USA.
Guiren Wang, University of South Carolina, USA.

7:45 pm (plenary)	Mixing of Conducting Fluids by Electromagnetic Forces: Experimental Methods, Numerical Simulations and Perspectives ¹ Sergio Cuevas (speaker), ² Aldo Figueroa, ³ Patrice Meunier, ³ Emmanuel Villermaux, ¹ Michel Rivero, ¹ Eduardo Ramos, ¹ Centro de Investigación en Energía, UNAM, México, ² Facultad de Ciencias, Universidad Autónoma del Estado de Morelos, México; ³ IRPHE, CNRS, Aix-Marseille Université, France
8:30 pm	A Method for Comparing Impellers' Generation of Turbulence and Flow ¹ Richard K. Grenville (speaker), ² David A. R. Brown, ¹ Richard K. Grenville, USA; ² BHR Group Ltd., Cranfield, UK
8:55 pm	Applications of Electrical Resistance Tomography to Optimization and Control of Mixing Ken Primrose, Industrial Tomography Systems plc, Manchester, UK
9:20 pm	Coffee Break and Exhibit (Foyer, Convention Center)
9:40 pm	Micromixing Studies Employing the Iodide-Iodate Reaction Scheme and Interpretation of Such Results ¹ Julia Hofinger (speaker), ¹ Waldemar Bujalski, ¹ Serafim Bakalis, ² Archie Eaglesham, ² Melissa Assirelli, ¹ Alvin W. Nienow, ¹ School of Chemical Engineering, University of Birmingham, UK; ² Huntsman Polyurethanes, Brussels, Belgium
10:05 pm	On the Use of Bubble Image Velocimetry (BIV) to Measure Hydrodynamics within a Tubular Membrane System César Gutiérrez-Valencia (speaker), Alexandra Cerón-Vivas, Adalberto Noyola-Robles, Adrián Pedrozo Acuña, Instituto de Ingeniería, UNAM, Mexico City, México
10:30 - 11:30 pm	Social Hour and Exhibit (Foyer, Convention Center)

Monday, June 18th

Session 2: The Most Influential Authors and Contributions to Fluid Mixing Technology and the Young Generation

Chairs: Victor Atiemo-Obeng, Retiree from The Dow Chemical Company, USA.
Justin Walker, University of Maryland, USA.

7:00 -8:00 am	Breakfast (Restaurante Buffet “La Plaza”)
8:00 am (plenary)	The 21 Most Influential Contributions to Fluid Mixing Technology ¹ Minye Liu (speaker), ² Suzanne M. Kresta (speaker) and ³ Richard, V. Calabrese (speaker), ¹ DuPont Engineering, Wilmington, USA; ² University of Alberta, Edmonton, Canada; ³ University of Maryland, College Park, USA
9:00 am	Spatial Distribution of Energy Dissipation Rates in the Vicinity of a Rushton Impeller Harry E.A. Van den Akker (speaker), Jurriaan J.J. Gillissen, Department of Multi-Scale Physics, Delft University of Technology, Netherlands
9:30 am	Scale-down Studies for Assessing the Impact of Different Stress Parameters on Growth and Productivity during Mammalian Cell Culture ^{1,2} Will H. Scott, ¹ Colin R. Thomas, ³ Chris J. Hewitt, ⁴ Gareth Lewis, ⁵ Steve Meier, ^{5,6} Ashraf Amanullah, ⁵ Robert Kiss, ^{1,3} Alvin W. Nienow (speaker), ¹ Centre for Bioprocess Engineering, University of Birmingham, UK; ² now at Lonza Biologics plc, Slough, UK; ³ Centre for Biological Engineering, Loughborough University, UK; ⁴ MedImmune Cell Sciences, Cambridge, UK; ⁵ Genentech, A Member of the Roche Group, South San Francisco, USA; ⁶ now at Gilead, Inc., USA
10:00 am	Micromixing Effects in Two-phase Systems Jerzy Bałdyga (speaker), Magdalena Jasińska, Katarzyna Malik, Warsaw University of Technology, Faculty of Chemical and Process Engineering, Warsaw, Poland
10:30 am	Particle-resolved Simulations of Solids Suspension in a Small Mixing Tank Jos Derksen, Chemical & Materials Engineering, University of Alberta, Edmonton, Canada
11:00 am	Coffee Break and Exhibit (Foyer, Convention Center)
11:30 am	NAMF Student Award Finalist Power Consumption of Radial-Discharge Turbine Agitators in Continuous Operation ¹ Mark Heimovitz (speaker), ¹ Kevin Myers, ² Eric Janz, ³ Julian Fasano, ¹ University of Dayton, ² Chemineer, Inc., ³ Mixer Engineering Inc., USA
11:55 am	NAMF Student Award Finalist Viscous Structures Produced under Turbulent Conditions in a Stirred Tank ^{1,3} René Sanjuan-Galindo (speaker), ² Roberto Zenit, ¹ Gabriel Ascanio, ¹ Centro de Ciencias Aplicadas y Desarrollo Tecnológico, UNAM; ² Instituto de Investigaciones en Materiales, UNAM; ³ Current address: Instituto Tecnológico de Nuevo León, México
12:20 pm	NAMF Student Award Finalist Dilute Dispersion of Water into Oil in a Batch Rotor-Stator Mixer Paul E. Rueger (speaker), Richard V. Calabrese, University of Maryland, College Park, USA
12:45 pm	Winner of the South American Mixing Student Competition Experimental Power Number of High Shear Disk Impellers Edimilson Souza (speaker), José Roberto Nunhez, Universidade Estadual de Campinas – UNICAMP, Faculdade de Engenharia Química, Departamento de Engenharia de Processos, Campinas, Brazil
1:10- 2:10 pm	Lunch (Restaurante Buffet “El Mercado”)
5:30- 6:00 pm	Social Hour (Lobby Bar “La Cúpula”)
6:30- 7:30 pm	Dinner (Restaurante Buffet “El Mercado”)

Session 3: CFD of Mixing Processes

Chairs: Roberto Nunhez, Universidade Estadual de Campinas, Brazil.
Kent Wardle, Argonne National Laboratory, USA.

7:30 pm	CFD Prediction of Gas-liquid Flow in an Aerated Stirred Vessel Using the Population Balance Model Zbyněk Kálal (speaker), Milan Jahoda, Institute of Chemical Technology, Prague, Czech Republic
7:55 pm	CFD Simulations for Scale up of Wet Milling in High Shear Mixers Meng Yang, Richard V. Calabrese (speaker), University of Maryland, College Park, USA
8:20 pm	CFD Analysis and Testing of Magnetic Capture of Rare Cells from Whole Blood ¹ Zhixi Qian, ² Paul W. Todd, ¹ Thomas R. Hanley (speaker), ¹ Department of Chemical Engineering, Auburn University, Auburn, ² Techshot, Inc., Greenville, USA.
8:45 pm	Coffee Break and Exhibit (Foyer, Convention Center)
9:05 pm	A Combination of Population Balance and Kinetic Models for Bioreactors Scale-up Using CFD ^{1,2,3} Jérôme Morchain (speaker), ^{1,2,3} Jean-Christophe Gabelle, ^{1,2,3} Arnaud Cockx, ¹ Université de Toulouse, France, ² INRA, France, ³ CNRS, France
9:30 pm	CFD Simulation of Gas Mixing in Anaerobic Bioreactors Binxin Wu, Philadelphia Mixing Solutions Ltd, Palmyra, USA
9:55 pm	Computational Fluid Dynamics (CFD) for Analyzing Mixing in a Prototype Column Digester ¹ Jorge Flores, ¹ Abraham Rojano (speaker), ^{1,3} Teodoro Espinosa, ² Enrique Mejia, ³ Max Domaschko, ³ Ulises Toledo, ¹ Universidad de Chapingo, México; ² Colegio de Postgraduados, México; ³ West Virginia State University, USA
10:20-11:30 pm	Social Hour and Exhibit (Foyer, Convention Center)

Tuesday, June 19th

Session 4: Mixing of Multiphase Systems

Chairs: Larry Tavlarides, Syracuse University, USA.
Carlos Rubio, Universidad Autónoma de Yucatán, México.

7:00- 8:00 am	Breakfast (Restaurante Buffet "La Plaza")
8:00 am (plenary)	Quadrature-based Moment Methods for the Simulation of Fluid-fluid Multiphase Systems Daniele L. Marchisio, Dipartimento di Scienza Applicata e Tecnologia, Istituto di Ingegneria Chimica, Politecnico di Torino, Italy
8:45 am	Numerical and Experimental Flow around a Flat Disk for Multiphase Flow ¹ Jorge Ramírez-Cruz, ² Ma. Soledad Córdova, ² Gabriel Ascanio, ³ Roberto Zenit, ¹ William Vicente, ¹ Martín Salinas-Vázquez, ² Enrique Soto (speaker), ¹ Instituto de Ingeniería, ² Centro de Ciencias Aplicadas y Desarrollo Tecnológico, ³ Instituto de Materiales, UNAM, Mexico City, México
9:10 am	Hybrid Multiphase CFD Simulations for Coupled Dispersed/Segregated Flows in Liquid-liquid Extraction Kent E. Wardle, Argonne National Laboratory, Argonne, USA
9:35 am	Coffee Break and Exhibit (Foyer, Convention Center)
9:55 am	Characterization of the Traditional Mexican "Molinillo" used in the Mixing Process of Chocolate Beverage Preparation Alhelí Holguín, Diana López, Gabriel Corkidi, Enrique Galindo (speaker), Instituto de Biotecnología, UNAM, Cuernavaca, México
10:20 am	Power Drawn, Mass Transfer Correlations and Mixing Time in Vessels Stirred with Multiple Radial and Axial Down-pumping Impellers Marco Ávila-López, Sergio Uitzil-Álvarez, Dalmira Rodríguez-Martin, Daniel Mena-Romero, Carlos Rubio-Atoche, (speaker), Universidad Autónoma de Yucatán, Mérida, México
10:45 am	Coffee Break and Exhibit (Foyer, Convention Center)

Session 5: Fundamentals of Mixing

Chairs: Jerzy Baldyga, Warsaw University of Technology, Poland.

Robert Brodkey, Ohio State University, USA.

11:15 am	Mixing and Microstructure of Suspensions in Inertial-free Complex Flows Bu Xu, Tharanga Perera, James Gilchrist (speaker), Department of Chemical Engineering, Lehigh University, Bethlehem, USA
11:40 am	Topological Analysis of a Mixing Flow Generated by Natural Convection ¹ Luis M. de la Cruz (speaker), ² Eduardo Ramos, ¹ Instituto de Geofísica UNAM, Mexico City, ² Centro de Investigación en Energía, UNAM, Cuernavaca, México
12:05 pm	On the Mechanism of Turbulent Blending in Stirred Tank Reactors Minye Liu, DuPont Company, Wilmington, USA
12:30 pm	Structure Characteristics of Corded Isolated Mixing Region in Stirred Tank Shunsuke Hashimoto, Osaka University, Osaka, Japan
12:55 -1:55 pm	Lunch (Restaurante Buffet "El Mercado")
3:00- 5:00 pm	NAMF Executive Council Meeting ("Maya Room", Convention Center)
5:30- 6:30 pm	Social Hour (Lobby Bar, "La Cúpula")
6:30- 7:30 pm	Dinner (Restaurante Buffet "El Mercado")

Session 6: Static and Other In-Line Mixers

Chairs: Jamal Chaouki, Ecole Polytechnique de Montréal, Canada.

Shaliza Ibrahim, Universiti Malaya, Malaysia.

7:30 pm	Experimental Comparison of Mixing Processes in Continuous Flow Mixers and Stirred Tank Reactors Based on the Iodide-Iodate Reaction Method Andreas Kölbl, Karlsruhe Institute für Technologie, Germany
7:55 pm	Small Scale Performance of Inline Mixers in Solid-Liquid Mixing Processes Scott Anderson, Ika Works Inc., Wilmington, USA
8:20 pm	Coffee Break and Exhibit (Foyer, Convention Center)
8:50 pm	Ultrafast Quasi Pipeline Mixing Process and Mixer in Forced Confined Mixing Layers Wei Zhao, Guiren Wang (speaker), University of South Carolina, Columbia, USA
9:15 pm	Mixing Patterns in KM Static Mixers using Non-newtonian Fluids: Effect of Scale, Viscosity Ratio and Flow Rate ¹ Federico Alberini (speaker), ¹ Mark Simmons, ¹ Andy Ingram, ² Hugh Stitt, ¹ University of Birmingham, Birmingham, ² Johnson Matthey Technology Centre, Billingham, UK
9:40 pm	Liquid-liquid Dispersion in In-line Silverson Rotor-stator Mixers: Experiments and Simulations ¹ Steven Hall (speaker), ¹ Andrzej W. Pacek, ² Mike Cooke, ³ Adam J. Kowalski, ⁴ David Rothman, ¹ University of Birmingham, Birmingham, ² University of Manchester, Manchester, ³ Process Science, Unilever R&D, Port Sunlight, ⁴ Silverson Machines Ltd., Chesham, UK
10:05- 11:30 pm	Social Hour and Exhibit (Foyer, Convention Center)

Wednesday, June 20th

Session 7: Mixing Issues in Biotechnological Processes

Chairs: Alvin W. Nienow, University of Birmingham, UK.

Thomas Hanley, Auburn University, USA.

7:00- 8:00 am	Breakfast (Restaurante Buffet, "La Plaza")
8:00 am (plenary)	The Effect of Forced Mixing in Beer Fermentation: A Review ¹ Mikkel Nordkvist (speaker), ² Chris Boulton, ³ Alvin W. Nienow, ¹ Alfa Laval Tank Equipment A/S, Ishøj, Denmark; ² Division of Food Sciences, University of Nottingham, Loughborough, UK; ³ Centre for Bioprocess Engineering, University of Birmingham, UK
8:45 am	Eccentrically Agitated Tanks in Biotechnology Applications: Examples, Advantages and Challenges David Bulnes-Abundis, Leydi Maribel Carrillo-Cocom, Alfonso García-Ulloa, Josefina Castillo-Reyna, Marisa Granados-Pastor, Pamela Belén Sánchez-Arreola, Gayathree Murugappan, Mario Moisés Álvarez (speaker), Centro de Biotecnología-FEMSA, Tecnológico de Monterrey, México
9:10 am	Pilot and Large Scale Testing of a Mixing System for Enhanced Nutrient Removal in a Large Wastewater Treatment Plant Marcus Hoefken (speaker), Walter Steidl, Marina Boehm, INVENT Environmental Technologies Inc., Cedar Grove, USA
9:35 am	Scale-up of Cellulase Enzymes Production by <i>Trichoderma reesei</i>: Characterization of Mass Transfer Inside Model Fluids and Fermentation Broth ^{1,2} Jean-Christophe Gabelle, ² Etienne Jourdir, ² Fadhel Ben Chaabane, ¹ Jérôme Morchain, ² Frédéric Augier (speaker), ¹ INSA, Toulouse, ² Process Development and Engineering Division, IFPEN-Lyon, Vernaison, France
10:00 am	Coffee Break and Exhibit (Foyer, Convention Center)
10:20 am	Some Mixing Aspects During the Production of the Entomopathogenic Nematode, <i>Steinernema carpocapsae</i> CABA01, in Submerged Culture in Air Lift Fermentors Norberto Chavarría-Hernández (speaker), Javier Pineda-González, Adriana-Inés Rodríguez-Hernández, Instituto de Ciencias Agropecuarias, Universidad Autónoma del Estado de Hidalgo, Tulancingo, México
10:45 am	Oxygen Transfer Rate is Affected by the Shake Flask Geometry in the Production and O-mannosylation of Recombinant APA Glycoprotein from <i>Mycobacterium tuberculosis</i> in <i>Streptomyces lividans</i> ^{1,2} Ramses Adolfo Gamboa-Suasnavart, ^{1,2} Luz Deisy Marín-Palacios ² Norma Adriana Valdez-Cruz, ² Luis Servín-Gonzalez, ³ Wolf Klöckner, ³ Jochen Büchs, ^{1,2} Mauricio Trujillo-Roldán (speaker), ¹ Unidad de Bioprocesos, ² Instituto de Investigaciones Biomédicas, UNAM, Mexico City, México, ³ AVT- Biochemical Engineering, RWTH Aachen University, Aachen, Germany
11:10 am	Coffee Break and Exhibit (Foyer, Convention Center)

Session 8: Mixing in Small Scale and Shaken Vessels

Chairs: Mario Álvarez, Tecnológico de Monterrey, México.

Jérôme Morchain, Université de Toulouse, France.

11:30 am	Mixing Performance of the Novel KDM Impeller in Small Laboratory-Scale Systems Richard F. Cope (speaker), Zhao Yu, Kishore K. Kar, Engineering & Process Science, Fluid Mechanics & Mixing, The Dow Chemical Company, Midland, USA
11:55 am	Enhanced Mixing on Small Scales in Microfluidic Screening Bioreactors ¹ Gena Peterat (speaker), ² Stefanie Demming, ³ Hannah Schmolke, ² Ala'aldeen T. Al-Halhouli, ¹ Astrid Edlich, ² Stephanus Büttgenbach, ³ Claus-Peter Klages, ¹ Rainer Krull, ¹ Institute of Biochemical Engineering, ² Institute of Microtechnology, ³ Institute of Surface Technology, Technische Universität Braunschweig, Germany
12:20 pm	Characterization of Oxygen Transfer, Power Input and Hydrodynamics in Shaken Disposable Bioreactors ¹ Wolf Klöckner (speaker), ¹ Clemens Lattermann, ¹ Riad Gacem, ² Tibor Anderlej, ¹ Jochen Büchs, ¹ AVT-

	Biochemical Engineering, RWTH Aachen University, Aachen, Germany, ² Adolf Kühner AG, Birsfelden, Switzerland
12:45 pm	On the Fluid and Mixing Dynamics of Orbitally Shaken Bioreactors Weheliye Weheliye, Michael Yianneskis, Andrea Ducci (speaker), University College London, London, UK
1:10- 2:10 pm	Lunch (Restaurante Buffet, “El Mercado”)
3:45- 5:45 pm	POSTER SESSION (see program separately) Including Social Hour and Exhibit
5:45- 6:00 pm	Break
6:00 pm	Bus Boarding to Xcaret
7:00- 10:00 pm	Dinner-Show at Xcaret
10:00- 11:00 pm	Social Hour (Lobby Bar, “La Fuente”)

“Cozumel-Holbox” Room, Convention Center

Thursday, June 21th

Session 9: Industrial Mixing Processes: Large Scale, Mechanical Design and Operation Strategies

Chairs: Ramesh Hemrajani, Mixing and Reactor Solutions, USA.

Jie Wu, CSIRO and RMIT University, Australia.

7:00- 8:00 am	Breakfast (Restaurante Buffet, “La Plaza”)
8:00 am (plenary)	Water and Wastewater Mixing: Lighting up a Dark Art Mick Dawson, BHRGroup, The Fluid Engineering Centre, Cranfield, UK
8:45 am	Advanced Hydrofoil Impeller Design, ARI-2 Bob Higbee, Jason Giacomelli (speaker), Wojciech Wyczalkowski, Philadelphia Mixers (PMSL), Palmyra, USA
9:10 am	Experimental Investigation of the Flow Dynamics of Rheologically Complex Fluids in a Maxblend Impeller System ¹ André Fontaine, ¹ Yoann Guntzburger, ¹ François Bertrand, ¹ Louis Fradette, ² Marie-Claude Heuzey, ³ Ric Yatomi, ¹ URPEI and ² CREPEQ, Department of Chemical Engineering, Ecole Polytechnique de Montréal, Canada; ³ SHI Mechanical and Equipment, Ehime, Japan
9:35 am	The Effect of Baffles and Mixer Mounting Position on Impeller Fluid Forces Richard O. Kehn, SPX Flow Technology (LIGHTNIN Mixers), Rochester, USA
10:00 am	Coffee Break and Exhibit (Foyer, Convention Center)
10:20 am	Study of the Influence of Side-entry Impellers on the Mixing Time of a Large Scale Diesel Storage Tank ¹ Fredy Antonio Cabrales-Navarro, ¹ Helver Crispiniano Alvarez Castro, ² Adriana Soares Ito, ² Mário Jorge Lima, ² Waldir Pedro Martigoni, ² Nicolas Spogis, ¹ José Roberto Nunhez (speaker), ¹ Universidade Estadual de Campinas, Campinas, ² PETROBRAS AB-RE/TR/TE - EDISE, Rio de Janeiro, Brazil
10:45 am	Mixing Characteristics of Large Impellers ¹ Koji Takahashi (speaker), ¹ Yasuyuki Takahata, ² Ryuichi Yatomi, ¹ Department of Biochemical Engineering, Yamagata University; ² Sumitomo Heavy Industries Process Equipment Co., Ltd., Japan
11:10 am	Flow Regimes and Surface Air Entrainment in Partially Filled Stirred Vessels for Different Fill Ratios Shilan Motamedvaziri, Piero M. Armenante (speaker), New Jersey Institute of Technology, Newark, USA
11:35 am	Characterization of Mixing Processes by Radioactive Particle Tracking Ebrahim Alizadeh, Hamed Bashiri, François Bertrand, Jamal Chaouki (speaker), Department of Chemical Engineering, Ecole Polytechnique de Montréal, Canada
12:00-1:00	Lunch

pm	(Restaurante Snack, “El Faro” or Restaurante Brasileño “El Rodizio”)
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Session 10: Mixing in Solids-Liquid and Particulate Solid Systems

Chairs: Arthur Etchells III, Rowan University, USA.

Luis Sierra, Merck & Co., USA.

3:00 pm	Process Intensification – High Solids Concentration Suspension Agitation and Beyond Jie Wu (speaker), Bon Nguyen, Graeme Lane, Steven Wang, Raji Parthasarathy, Lachlan J. Graham, CSIRO and RMIT, Highett, Australia
3:25 pm	Solids Loading Effect on Just-suspended Speed ¹ Kevin J. Myers, ² Eric E. Janz (speaker), ³ Julian B. Fasano, ¹ University of Dayton, ² Chemineer, Inc. ³ Mixer Engineering Inc.
3:50 pm	A New Correlation for the Suspension of Freely Settling Solids Using Continuous Jet Mixers David A. R. Brown, BHR Group, The Fluid Engineering Centre, Cranfield, UK
4:15 pm	Using Tomography and CFD to Measure the Degree of Homogeneity in Solid-Liquid Mixing Operations Seyed Hosseini, Dineshkumar Patel, Farhad Ein-Mozaffari (speaker), Mehrab Mehrvar, Department of Chemical Engineering, Ryerson University, Ontario, Canada
4:40 pm	Coffee Break and Exhibit (Foyer, Convention Center)
4:55 pm	A Study of Solid-liquid Suspension in Stirred Tank Using Novel Impeller Geometries ¹ Zauyah Zamzam, ¹ Yoshikazu Kato, ¹ Takahiro Nemoto, ¹ Hisayuki Kanamori, ¹ Makoto Sato, ² Shaliza Ibrahim (speaker), ² Siau Dhing Wong, ² Inas Baker, ¹ SATAKE R&D Section, Mixing Technology Laboratory, SATAKE Chemical Equipment Mfg., Ltd., Tokyo, Japan, ² Dept. of Civil Engineering, Universiti Malaya, Kuala Lumpur, Malaysia
5:20 pm	Improving Solid-liquid Mass Transfer and Energy Efficiency in Agitated High Concentration Slurries ¹ Eng Ying Bong, ¹ Rajarathinam Parthasarathy (speaker), ² Jie Wu, ¹ Nicky Eshtiaghi, ¹ RMIT University, Melbourne, ² CSIRO, Division of Process Science and Engineering, CSIRO, Highett, Australia
5:45 pm	Impact of Mixing on the Addition of Demulsifier in Oil Sands Froth Treatment ¹ Patrick Laplante, ¹ Marcio B. Machado, ² Sujit Bhattacharya, ² Samson Ng, Suzanne M. Kresta (speaker), ¹ University of Alberta Department of Chemical and Materials Engineering, Edmonton, ² Syncrude Research Center, Edmonton, Canada
6:10 pm	Towards a Complete Model for the Flow, Mixing and Granulation of Powders in Rotor-based Equipment Jonathan Bouffard, Jamal Chaouki, François Bertrand (speaker), Ecole Polytechnique de Montréal, Canada
6:35- 7:15 pm	Break
7:15- 10:00 pm	NAMF Banquet and Student Awards (starting with NAMF General Meeting, 7:15- 7:45 pm) (“Quintana Roo Room”, Convention Center)
10:00 – 11:00 pm	Evening Social Hour (Lobby Bar, “La Fuente”)

Friday, June 22th

7:00- 8:00 am	Breakfast (Restaurante Buffet “La Plaza”)
8:00 am	Bus Boarding to Chichén Itzá
8:00 am- 5:30 pm	Tour to Chichén Itzá
6:00- 8:00 pm	Dinner (your choice of restaurant)
8:00- 10:00 pm	Evening Social Hour (Lobby Bar, “La Fuente”)

Saturday, June 23th

12:00 pm	Room check out
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Poster Session

“Quintana Roo” Room Hall, Convention Center

Wednesday, June 20th, 3:45- 5:45 pm

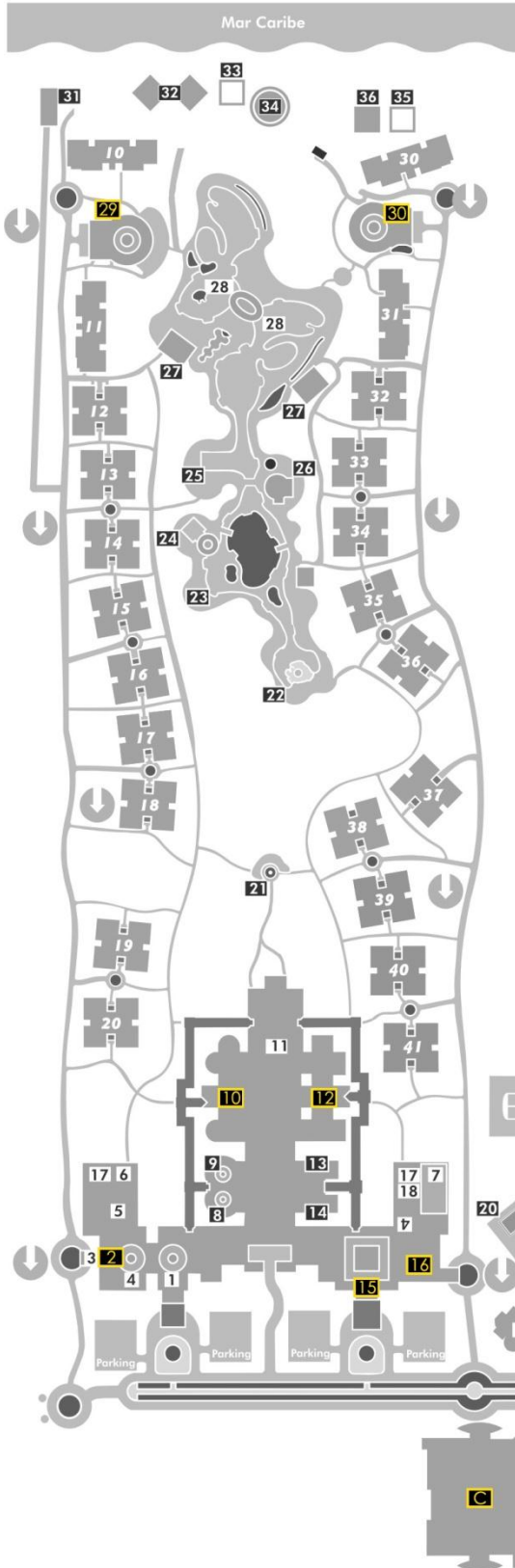
Chairs: Mauricio Trujillo, Instituto de Investigaciones Biomédicas, UNAM, México.

Thomas Simpson, DuPont Engineering, USA.

Authors (*presenter)	Title	Afiliation
¹ Richard K. Grenville*, ² Minye Liu, ² James N. Tilton	Blend Times in Jet Mixed Vessels: Comparison of Experimental Measurements with CFD Modeling	¹ Richard K. Grenville, ² DuPont Engineering, Wilmington, USA.
¹ Abraham Rojano*, ³ Jorge Flores-Velázquez, ² Teodoro Espinosa, ³ Irineo López, ¹ Raquel Salazar, ⁴ Ulises Toledo	Variable Viscosity Effects on Stationary Digester Mixer	¹ Universidad de Chapingo, ² CORI, Universidad de Chapingo, ³ IAUIA Universidad de Chapingo, Chapingo, México, ⁴ West Virginia State University, USA
Minye Liu*	Recent Development in Mean Age Theory	DuPont Company, Wilmington, USA.
¹ Axel Falcón-Rojas, ² Ma. Soledad Córdova-Aguilar, ¹ Enrique Galindo*	Oil Drops and Air Bubble Sizes as a Function of the Spatial Position in a Laboratory-Scale Tank	¹ Instituto de Biotecnología, Cuernavaca, ² Centro de Ciencias Aplicadas y Desarrollo Tecnológico, Mexico City, UNAM, México
¹ María Soledad Córdova-Aguilar*, ¹ Mónica García, ¹ Juan Carlos Moran, ² Luz Deisy Marín-Palacio, ² Mauricio Trujillo-Roldán, ¹ Gabriel Ascanio, ³ Roberto Zenit-Camacho, ¹ Enrique Soto	Velocity Fields of Three Different Shake Flask Geometries used for Producing Recombinant Glycosylated Protein by Filamentous Bacteria	¹ Centro de Ciencias Aplicadas y Desarrollo Tecnológico, ² Instituto de Investigaciones Biomédicas, ³ Instituto de Materiales, UNAM, Mexico City, México
Marcio Machado*, Vesselina Roussinova, Kevin Bittorf, Suzanne M. Kresta	Transition Below Fully Turbulent Flow in the Bulk of the Flow in a Stirred Tank Driven by A310, HE3 and PBT Impellers	Department of Chemical and Materials Engineering, University of Alberta, Edmonton, Canada
Binxin Wu*	CFD Simulation of Mixing High Viscosity Fluids in Bioreactors	Philadelphia Mixing Solutions Ltd, Palmyra, USA
Jason Giacomelli*, Wojciech Wyczalkowski	Vortex Generation with Submerged Baffles	PMSL, Palmyra, USA
Jason Giacomelli*, Wojciech Wyczalkowski	Measurement of Wall Jets in Stirred Tanks with Varying Baffle Off-Wall Clearance and their Relationship to Solids Suspension and Cloud Height	PMSL, Palmyra, USA
Kent E. Wardle*	Investigation of Annular Centrifugal Contactor Mixing Zone Flow Electrical Resistance Tomography (ERT) and Using High-Speed Imaging	Chemical Sciences and Engineering Division, Argonne National Laboratory, USA
Elina K. Nauha*, Ville Alopaeus	Mass Transfer Measurements in a Filamentous Fermentation Broth	School of Chemical Technology, Department of Biotechnology and Chemical Technology, Aalto University, Espoo, Finland
¹ Zhongliang Lu, ² Paul W.	CFD Analysis of an Automated Tissue Digester for Pancreatic	¹ Department of Chemical Engineering,

Todd, ¹ Thomas R. Hanley*	Islet Production	Auburn University; ² Techshot, Inc., Greenville, USA
David Bulnes-Abundis, Alfonso García-Ulloa, Mario Moisés Alvarez*	Mixing Topology and Short Term Mixing Dynamics in Eccentrically Agitated Stirred Tanks	Centro de Biotecnología-FEMSA. Tecnológico de Monterrey, Monterrey, México
^{1,2} Luz Deisy Marin-Palacio ^{1,2} Ramses Adolfo Gamboa-Suasnavart, ² Norma Adriana Valdez-Cruz, ² Luis Servín-Gonzalez, ³ Wolf Klöckner, ³ Jochen Büchs, ^{1,2} Mauricio Trujillo-Roldán*	Measurement of Volumetric Power Input in Three Different Shake Flask Geometries in Rheologically Complex Cultures of the Recombinant Filamentous Bacteria <i>Streptomyces lividans</i>	¹ Unidad de Bioprocesos, ² Departamento de Biología Molecular y Biotecnología, Instituto de Investigaciones Biomédicas, UNAM, Mexico City, México. ³ AVT-Biochemical Engineering, RWTH Aachen University, Aachen, Germany
Ana Milena Garavito-Torres*, Daniel de Souza Simões, José Roberto Nunhez	Experimental Power Consumption for a Helical Impeller and Two Anchor Impellers With and Without Scrapers for Newtonian and Pseudoplastic Fluids	Faculdade de Engenharia Química, Departamento de Engenharia de Processos, Universidade Estadual de Campinas – UNICAMP, Campinas, Brazil.
Fang Yang; Wei Zhao; Guiren Wang*	Turbulent Mixing in Microchannel Where Reynolds Number is in the Order of 1	Department of Mechanical Engineering and Biomedical Engineering Program, University of South Carolina, Columbia, USA
Edgar Honorato-Sánchez*, Eleazar Escamilla-Silva	Numerical Study with CFD of the Power Input in a Stirred-Tank Bioreactor of Standard Geometry Versus Non-standard with Multiple Impellers	Departamento de Ingeniería Química, Instituto Tecnológico de Celaya, Celaya, México.
¹ Eng Ying Bong, ¹ Rajarathinam Parthasarathy*, ² Jie Wu, ² Nicky Eshtiaghi	Solid-liquid Mass Transfer in Agitated Slurries with High Solid Concentration	¹ School of Civil, Environmental and Chemical Engg, RMIT University, Melbourne, Australia; ² CSIRO, Division of Process Science and Engineering, Highett, Australia
¹ Chongguang Yu, ¹ Rajarathinam Parthasarathy*, ² Jie Wu, ¹ Nicky Eshtiaghi	Mass Transfer in Agitated Dissolution Systems with High Solids Loadings	¹ School of Civil, Environmental and Chemical Engg, RMIT University, Melbourne, Australia; ² CSIRO, Division of Process Science and Engineering, Highett, Australia
¹ Gustavo Ortiz-Juárez, ¹ Ernesto Mancilla, ² Ryuchi Yatomi, ² Hiroo Horiguchi, ³ Roberto Zenit, ¹ Enrique Soto*, ¹ Gabriel Ascanio	On the Origin of the Vertical Recirculation Generated by the Straight Maxblend Impeller	¹ Centro de Ciencias Aplicadas y Desarrollo Tecnológico, UNAM, Mexico City, México; ² SHI Mechanical & Equipment, Tokyo, Japan; ³ Instituto de Investigaciones en Materiales, UNAM, Mexico City, México
Diego Humberto Cuervo-Amaya*, Ma. Soledad Córdova, Gabriel Corkidi, Enrique Galindo	Air and Oil Dispersion in a Mixing Tank under Constant Power Input and Varying Concentrations of Surfactants (Protein) and Solids (Mycelial Biomass)	Instituto de Biotecnología, UNAM, Cuernavaca, México
Sandeep Kumar Verma*, Ashok Khanna	Modelling and Simulation of Trickle Bed Reactor Internal Nozzle	Department of Chemical Engineering, Indian Institute of Technology, Kanpur, India.
Amor Monroy-Villagrana*, Cynthia Cano-Sarmiento, Humberto Hernández-Sánchez, Liliana Alamilla-Beltrán, Gustavo Fidel Gutiérrez-López	Characterization of the Flows and the Residence Times Distributions in Y Type Microfluidizer	Departamento de Graduados e Investigación en Alimentos, Escuela Nacional de Ciencias Biológicas-IPN, Mexico City, México
Arthur W. Etchells III*, Robert E. Hesketh, Z. Chen, M. Mungo, S. Boesch	Some Observations on the Effect of Particle Shape on Solids Suspension in Mechanically Stirred Tanks	Rowan University, Glassboro, USA
¹ Sebastian Hirschberg, ² Chris Meyer*	Mixing Performance of the SMX TM plus under Turbulent Flow Conditions	¹ Sulzer Chemtech AG, Winterthur, Switzerland, ² Sulzer Chemtech USA,

		Inc., Teaneck, USA
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- 1 LOBBY IBEROSTAR PARAISO DEL MAR
- 2 LOBBY BAR "LA CUPULA"
- 3 SALON FUMADORES "CORONA"/ Cigar Bar
- 4 TIENDAS / Shops
- 5 STAR ROCK CAFE
- 6 BIBLIOTECA & INTERNET / Library & Internet
- 7 RESTAURANTE JAPONÉS "EL HASHIRU"
- 8 RESTAURANTE MEDITERRÁNEO "LA DORADA"
- 9 RESTAURANTE STEAK HOUSE "EL PUERTO"
- 10 RESTAURANTE BUFFET "EL MERCADO"
- 11 BAR SALON ANIMACIÓN "EL TEATRO" / Theater Bar
- 12 RESTAURANTE BUFFET "LA PLAZA"
- 13 RESTAURANTE ITALIANO "DON ALFREDO"
- 14 RESTAURANTE MEXICANO "LA HACIENDA"
- 15 LOBBY IBEROSTAR PARAISO BEACH
- 16 LOBBY BAR "LA FUENTE"
- 17 SALA DE JUEGOS / Games Room
- 18 SALA DE JUNTAS / Meeting Room
- 19 GYM/ JACUZZI
- 20 TENIS
- 21 CAPITOLIO DE BODAS / Wedding Gazebo
- 22 CASCADA & JACUZZI / Water Fall & Jacuzzi
- 23 PISCINA TRANQUILA / Quiet Pool
- 24 AQUABAR "LA PERLA"
- 25 PISCINA ACTIVIDADES / Activities Pool
- 26 LUCY'S MINICLUB
- 27 CLUB HOUSE TOALLAS / Towels
- 28 HELADERÍA / Ice Cream & BAR "EL PUENTE"
- 29 RESTAURANTE SNACK "EL FARO"
- 30 RESTAURANTE BRASILEÑO "EL RODIZIO"
- 31 BUCEO / Diving
- 32 PALAPAS MASAJES / Massages
- 33 BAR DE PLAYA / Beach Bar "EL KIOSKO"
- 34 GRILL DE PLAYA / Beach Grill
- 35 CAMPO DE TIRO / Shooting Zone
- 36 PALAPA AERÓBICOS / Aerobics
- A SPA
- B CENTRO COMERCIAL/ Shopping Center
- C CENTRO DE CONVENCIONES/ Convention Center
- D DISCO GALAXY
- E UNDERGROUND / Teenagers Disco
- F STAR BURGERS (Hamburguesas)/ Star Burgers (Burgers)
- G BAR DE TAPAS / Tapas Bar
- H CREPERIE (Crepas y Helados)/ Creperie (creps and ice cream)
- I FARMACIA/ Drugstore
- J ANTOJITOS (Tacos)/ Antojitos (tacos)
- K GOLF CLUB HOUSE
- L CENTRO MEDICO / Medical Center
- ↑ PARAISO EXPRESS STOP