A Dynamic Imaging Cell Monitoring System for Real-Time Analysis of Algae-to-Biofuel Production
Agenda

- Introduction to Fluid Imaging Technologies, Inc.
- FlowCAM® Technology
- Specifications & Features
- Applications
FlowCAM® ES

- On-Line: Direct, real-time measurements
- Automated particle characterization and enumeration
- Temperature controlled enclosure
- Remote control and analysis via network
- Fully automated image and capture
- Trend analysis
- Identify predators
- Flexible configuration options
- Application specific requirements review included
FlowCAM-ES Methodology
FlowCAM-ES Acquisition
Nannochloropsis
Mixed Cultures – “Cinco Soup”
FlowCAM ES Specifications

- Particle sizes –
  - Imaging – 3µm to 300 µm
- Objectives – 10x or 4x
- Flow Cell – 80 µm FOV or 300 µm FOV
- Processing Capability –
  - Flow - 0.1-0.2 mL/mn
  - Density - sample dependent
FlowCAM ES Biofuel Applications

- Algae classification and research and development
  Taxa level, pattern matching algorithm software

- Algae concentration/growth rate monitoring
  Harvesting control/timing, time series chart

- Bioreactor, open pond, raceway contamination monitoring
  Grazers (Rotifers, ciliates), invasives species, detritus
FlowCAM Users
Algae Technology

- Heliae Development, LLC
- Algaeventure Systems
- University of Waterloo
- Sandia National Laboratories
- University of Toledo
- Sapphire Energy – Columbus & Las Cruces, NM
- MBD – James Cook University – Australia
- Muradel, Australia
- University of Florence, Italy
- Bard Holding, LLC
- Lone Star Community College
- BioProcess Algae

- Synthetic Genomics
- UCSD
- University of Munich
- Scottish Association for Marine Science
- University of New Mexico
- University of Georgia
- Gulf Marine Institute of Technology
- SAIC
- AlgaePARC, The Netherlands
- Arizona State University
- Santa Fe Community College
- SABIC
Thank You!

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