ARISTOS ARISTIDOU, PH.D.

LINKEDIN

3126 TAMU,
College Station, TX 77843-3126

My Mission: A results-oriented R&D leader and innovator with 20+ years of international technical and operational leadership experience in bioprocess and biocatalyst development and commercialization. Proven track record of establishing innovative idea feasibility and taking them through development, to perform scale-up optimization while working with Quality, Business, and Regulatory to commercialize new products.

Brief background: Most of my career has focused on developing and implementing innovative technologies guided by strict criteria of sustainability, carbon footprint, as well as financial return in areas such as biointermediates, chemicals or food ingredients. Expertise in leading teams of multi-disciplinary scientists involved in the development, scale-up and technology transfer of commercial processes including intellectual property protection. Demonstrated ability to successfully manage multiple development projects with aggressive timelines and goals. Coinventor of more than 30 patent families and, co-author of >25 scientific articles, book chapters and. textbook on metabolic engineering.

Values: A lifelong learner who takes ownership of actions and outcomes, committed to making the world safer each day through renewable and sustainable products..

EMPLOYMENT HISTORY

Texas A&M University, College Station, TX 8/2024 - present

- **Professor, Artie McFerrin Department of Chemical Engineering**
- **Director, Texas A&M Center for Advanced Biomanufacturing and Sustainability**
    - The mission is to establish and lead a new center funded by the Texas Governor (Governor University Funding Initiative) and the University Chancellor (Chancellor Research Initiative) aimed at developing low carbon intensity technologies that can transform the manufacturing of chemicals, materials, food or health products, while also developing the work force that can support these industries
    - The overarching effort is to develop cutting edge technologies that will empower a new circular carbon economy based either directly on CO_2 as a feedstock, or indirectly via plant-based renewable resources.

Biomason, Research Triangle Park, NC 5/2023 – 8/2024

- **Chief Scientific Officer**
    - The CSO position reports to the CEO and is responsible for leading the integrated strategy and performance of Biomason's technology vision platform to drive forward commercial growth aligned with Biomason's mission. This position is will be responsible for enabling the overall technology vision to business success.
    - The CSO is also responsible for developing and promoting an interdisciplinary team culture of innovation for rapid scientific advancement in R&D. This position builds upon and strategically grows the Company's overall scientific strategy and product

developments to enable commercial growth. This individual is a key member of the executive team and collaborates closely with other members of senior leadership to shape an R&D strategy focused on execution against discovery and development goals.

- More specifically, this position provides:
  - Overall Technology Vision
  - Sets and leads Biomason's R&D Strategies & manages the R&D pipeline.
  - Leads the R&D function to promote a high-performance, results-driven culture through directly building on the decade of learnings of biocement developments.
  - Take responsibility for People Leadership within the R&D function.
  - Establishes R&D objectives, operating budgets, timelines, and trial plans through rapid succession leading to learnings and results.

Cargill Incorporated, Minneapolis, MN 12/2012 – 5/2023

- **Strategic Growth Platform Lead**, Biointermediates & Biotechnology (6/20-5/23)
  - Providing business and customer partnership that result in developing technology solutions and value creation and optimization for the business for execution and implementation of R&D vision globally.
  - Contribute to the Product Line Architecture (PLA) and resulting Technology Roadmap for the expertise area.
  - Member of Global Core R&D leadership team
  - Technology, scouting evaluation and facilitate external partnerships for Cargill's Ventures Group
- **Director, Biotechnology R&D** (10/18-5/20)
  - Technical leadership, people management and strategic leadership for Biotech group, comprised of experts in biochemical engineering, fermentation, molecular biology, biochemistry, analytical chemistry, automation, and high throughput screening.
  - Member of Global Biotech R&D leadership team
  - Budget, talent management, change leadership as well as direct accountability.
  - Subject matter expert and technical lead for internal projects
  - Technology scouting and evaluation
  - Contributor to multiple strategic efforts at the corporate and business levels
- **Global Functional Lead, Fermentation** (12/12-9/18)
  - Technical leadership, people management and strategic leadership for The Fermentation R&D group, comprised of experts in biochemical engineering, fermentation, automation, and high throughput screening.
  - Budget, talent management, change leadership as well as direct accountability.
  - Member of Global Biotech R&D leadership team
  - Subject matter expert, project manager or technical lead for internal projects

Gevo Incorporated, Denver, CO 10/2007 – 11/2012

- **Vice President, Bioprocess Development**
  - Hire a new team and built an R&D and pilot development facility.
  - Technical leadership, people management and strategic leadership for the bioprocess R&D group, comprised of experts in biochemical engineering, fermentation, automation, high throughput screening, enzyme evolution, chemical catalysis and analytical chemistry
  - Responsible for achieving quarterly biocatalyst and process key performance indicators.

- Lead external scale up efforts, commercial plant acquisition, retrofit and new technology plant commissioning

NatureWorks, LLC (formerly, Cargill Dow), Minneapolis, MN 2/2001 – 9/2007

- **Bioprocess Development Lead**
  - Hire a new team and built an R&D and pilot development facility
  - Technical leadership, people management and strategic leadership for the bioprocess R&D group, comprised of experts in biochemical engineering, fermentation, enzymology and analytical chemistry
  - Responsible for achieving quarterly biocatalyst and process key performance indicators.
  - Provided technical leadership in developing breakthrough technologies for low cost lactic acid production using novel acid tolerant yeast, which established world leading position on low pH fermentation biocatalysts and biotechnology tools. Participated in the scale-up of this technology at NatureWorks' Blair, NE plant (world's largest lactic acid plant), which eventually helped reducing operating costs by more than $15 million per year.
  - Co-inventor on further engineering of the NatureWorks' yeast biocatalyst for converting biomass sugars, including pentose, to lactic, ethanol and other useful products
  - Successfully obtained >$20 million funding from US DOE, and Principal investigator on three of these grants.

Finnish Technical Research Center (VTT), Espoo, Finland 2/1997 – 1/2001

- **Bioprocess R&D Lead**
  - Technical leadership and project management in conducting fermentation and strain development projects funded by industry, various government funding agencies and the European Union.
  - Part of team responsible for identifying and pursuing various fund opportunities from the public and private sectors, including proposal writing, budgeting, resource allocation and project management.
  - Part of team that developed industrial filamentous fungi and yeasts, using both classical and modern genetic engineering tools, for converting sugars present in renewable resources to fuels, chemicals or food ingredients.

Helsinki University of Technology (now Aalto University), Espoo, Finland 9/1997 –

- **Adjunct Professor, Bioprocess Engineering**
  - Department of Chemical Technology, Laboratory of Bioprocess Engineering
  - Taught graduate level courses and, supervised Masters and Ph.D. thesis students.

Massachusetts Institute of Technology, Cambridge, MA 7/1994 – 1/1997

- **Postdoctoral Research Scientist, Department of Chemical Engineering**

William Marsh Rice University, Houston, TX 8/1989 – 6/1994

- **Research Scientist, Department of Chemical Engineering**

EDUCATION

Ph.D. William Marsh Rice University, Chemical Engineering May 1995

Dissertation: "Application of Metabolic and Biochemical Engineering Techniques for the Enhancement of Recombinant Protein Production in Escherichia coli."

Committee: Professor Ka-Yiu San, Chemical Engineering (Chair), Professor Jacqueline Shanks, Chemical Engineering, Professor George Bennet, Biochemistry and Cell Biology

B.S. William Marsh Rice University, Chemical Engineering May 1989
Minored in Biochemical Engineering

HONORS AND AWARDS

Cargill Corporate Fellow, 2022

- Cargill's most prestigious technical designation. It is a lifetime designation for a very small fraction of R&D employees to recognize their substantial and impressive body of scientific work and a reputation as a renowned authority in their field. Key criteria include:
  - Be recognized internally and externally as an international technical subject matter expert, usually reflected in an extensive portfolio of patents, publications, awards and outside activities (committees, boards, adjunct professors, speaking engagements, mentorship programs, etc.)
  - Have a reputation and connections that bring customers to Cargill
  - Be broadly known and respected within Cargill such that they are sought out for their thought leadership and their ability to translate technology into business strategy and value for Cargill
  - Proactively share knowledge, develop others, and mentor teams
  - Possess very considerable technical depth and breadth with proficiency in most areas of the Research & Development Competency Model

Member, National Academy of Engineering, 2018

- Selected for his contributions to bioprocess and metabolic engineering for the commercial production of sustainable chemicals and biopolymers. Founded in 1964, the National Academy of Engineering (NAE) is a private, independent, nonprofit institution that provides engineering leadership in service to the nation. The mission of the National Academy of Engineering is to advance the welfare and prosperity of the nation by providing independent advice on matters involving engineering and technology, and by promoting a vibrant engineering profession and public appreciation of engineering.

Fulbright Scholar

- Full Scholarship for Undergraduate studies in Chemical Engineering (1985-89)

National Scientific Research Honor Society, Sigma Xi, Invited Member.

National Engineering Honor Society, Tau Beta Pi, Invited Member.

National Chemical Honor Society, Phi Lambda Upsilon, Invited Member

Rice Engineering Alumni, Undergraduate Honoree Award

PROFESSIONAL AFFILIATIONS

- American Institute of Chemical Engineers (AIChE)
- Society for Biological Engineering (SBE)
- American Chemical Society (ACS)
- New York Academy of Sciences (NYAS)
- American Association for the Advancement of Science (AAAS)
- Society for Industrial Microbiology (SIM)
- American Society for Microbiology (ASM)
- European Federation of Biotechnology (EFB)

SELECTED PROFESSIONAL SERVICE

- **Board of Agriculture and Natural Resources** (BANR) of the National Academies of Sciences, Engineering, and Medicine (2019-now)
  - BANR is tasked with responding to requests for studies, workshops, expert meetings and other activities from the public (Congress, federal and state agencies) and private sector (associations, foundations, companies) on a broad range of issues related to agricultural production and natural resource stewardship, including forestry, fisheries, wildlife, and land and water use.
  - **Principal Investigator** on DOE Project "Development of Robust, Highly Efficient Fermentative Organisms for the Conversion of Lignocellulosic Biomass to Ethanol", Award Number: DE-FC36-07GO17055. (2007-2010)
  - **Principal Investigator** on DOE Project "Collection, Commercial Processing, and Utilization of Corn Stover", Award Number: DE-FC36-03ID14216. (2004-2007).
  - **Technical Expert** on ongoing DOE Project "Making Industrial Bio-refining Happen!" Award Number: DE-FC36-03GO13145/04-03-CA-70372. (2005-2009).
  - **Scientific Advisory Board Member** for the 2006 Metabolic Engineering VI Conference ("From recDNA towards Engineering Biological Systems", Noordwijkerhout, The Netherlands).
  - **Conference Session Chair**, "Microbial Catalysis and Metabolic Engineering," 27th Symposium on Biotechnology for Fuels and Chemicals. Denver, Colorado, 2005
  - **Conference Session Chair**, "Applications of Metabolic Engineering for the Conversion of Renewable Resources to Fuels & Chemicals" World Congress on Industrial Biotechnology and Bioprocessing. Orlando, Florida, 2005.
  - **Scientific Advisory Board Member** for the 2003 Biochemical Engineering XIII Conference ("Biochemical Engineering in the Era of Genomics, Systems Biology, Genetic Medicine & Nanotechnologies" Boulder, Colorado)
  - **Editorial Board Member**, Journal Bioprocess and Biosystems Engineering
  - **National Delegate** of Finland for the European Federation of Biotechnology (EFB) & member of the EFB working party "Bioreactor Performance" Society for Biological Engineering (SBE)

PUBLICATIONS

Books

Textbook

1. Stephanopoulos, Gregory, Jens Nielsen, and Aristos Aristidou. "Metabolic Engineering: Principles & Methodologies." Academic Press (1998).

Book Chapters

1. Ruben Jolie, Jean-Claude de Troostembergh, Aristos Aristidou, Massimo Bregola, and Eric Black. "Colocation as Model for Production of Bio-Based Chemicals from Starch", in "Chemicals and Fuels from Bio-Based Building Blocks", Edited by Fabrizio Cavani, Stefania Albonetti, Francesco Basile, and Alessandro Gan (2016), Wiley-VCH Verlag GmbH & Co.
2. Aristidou, A. "Application of Metabolic Engineering to the Conversion of Renewable Resources to Fuels and Fine Chemicals", in Fermentation Microbiology and Biotechnology, El-Mansi, M.T. and Bryce, C.F.A., Editors. (2006), Taylor & Francis Group, LLC:

Journal Publications

1. Salusjärvi, Laura, Pitkänen, Juha-Pekka, Aristidou, Aristos, Ruohonen, Laura and Penttilä, Merja (2006). "Transcription analysis of recombinant Saccharomyces cerevisiae reveals novel responses to xylose. "Applied Biochemistry and Biotechnology 128: 237-261.
2. Ruohonen, Laura; Aristidou, Aristos; Frey, Alexander D.; Penttilä, Merja; Kallio, Pauli T. (2006). "Saccharomyces cerevisiae under low oxygen conditions." Enzyme and Microbial Technology, 39(1): 6-14.
3. Salusjarvi, Laura; Pitkänen, Juha-Pekka; Aristidou, Aristos; Ruohonen, Laura; Penttilä, Merja (2006). "Transcription analysis of recombinant Saccharomyces cerevisiae reveals novel responses to xylose." Applied Biochemistry and Biotechnology, 128(3): 237-261.
4. Laura Ruohonen, Aristos Aristidou, Alexander D. Frey, Merja Penttilä and Pauli T. Kallio (2006)." Expression of Vitreoscilla hemoglobin improves the metabolism of xylose in recombinant yeast Saccharomyces cerevisiae under low oxygen conditions." Enzyme and Microbial Technology, 39(1): 6-14.
5. Goutham Vemuri and Aristos Aristidou (2005). "Metabolic Engineering in the Omics Era: Elucidating and Modulating Regulatory Networks." Microbiology and Molecular Biology Reviews 69(2): 197-216.
6. Pitkänen, J.-P., E. Rintala, A. Aristidou, L. Ruohonen, and M. Penttilä (2005). "Xylose chemostat isolates of Saccharomyces cerevisiae show altered metabolite and enzyme levels compared with xylose, glucose, and ethanol metabolism of the original strain." Applied Microbiology and Biotechnology 67(6): 827-837.
7. Virpi Tarkiainen, Tapio Kotiaho, Ismo Mattila, Ilkka Virkajärvi, Aristos Aristidou, Raimo A. Ketola (2005). "On-Line Monitoring of Beer Fermentation Processes Using Automatic Membrane Inlet Mass Spectrometric System." Talanta 65(5): 1254-1263.
8. Pitkänen, Juha-Pekka; Aristidou, Aristos; Salusjarvi, Laura; Ruohonen, Laura; Penttilä, Merja (2003). "Metabolic flux analysis of xylose metabolism in recombinant Saccharomyces cerevisiae using continuous culture." Metabolic Engineering 5(1): 16-31.
9. Salusjarvi, Laura; Poutanen, Marjo; Pitkänen, Juha-Pekka; Koivistoinen, Heini; Aristidou, Aristos; Kalkkinen, Nisse; Ruohonen, Laura; Penttilä, Merja (2003). "Proteome analysis of recombinant xylose-fermenting Saccharomyces cerevisiae." Yeast 20(4): 295-314.
10. van Hoek, Pim; Aristidou, Aristos; Hahn, J. J.; Patist, Alex (2003). Fermentation goes large-scale. Chemical Engineering Progress 99(1): 37S-42S.
11. Granstrom, Tom; Aristidou, Aristos A.; Leisola, Matti (2002). "Metabolic flux analysis of Candida tropicalis growing on xylose in an oxygen-limited chemostat." Metabolic Engineering 4(3): 248-256.
12. Mervi H. Toivari, Aristos Aristidou, Laura Ruohonen and Merja Penttilä (2001). "Conversion of Xylose to Ethanol by Recombinant Saccharomyces cerevisiae: Importance of Xylulokinase (XKS1) and Oxygen Availability." Metabolic Engineering, 3(3): 236-249.
13. Granström, T., A. Aristidou, J. Jokela and M. Leisola (2000). "Growth characteristics and metabolic flux analysis of Candida milleri." Biotechnology and Bioengineering 70(2): 197-207.
14. Aristidou, A., P. Richard, L. Ruohonen, M. Toivari, J. Londesborough and M. Penttilä (2000). "Redox balance in fermenting yeast." Monogram - European Brewing Convention (Symposium on Yeast Physiology) 28: 161-170.
15. Aristidou, A. and M. Penttilä (2000). "Metabolic engineering applications to renewable resource utilization." Current Opinion in Biotechnology 11(2): 187-98.

16. Aristidou, A. A., K. Y. San, and G. N. Bennett (1999). “Improvement of biomass yield and recombinant gene expression in Escherichia coli by using fructose as the primary carbon source.” Biotechnology Progress 15(1): 140-5.
17. Aristidou, A. A., K. Y. San, and G. N. Bennett (1999). “Metabolic flux analysis of Escherichia coli expressing the Bacillus subtilis acetolactate synthase in batch and continuous cultures.” Biotechnology and Bioengineering 63(6): 737-49.
18. Aristidou, A., T. Granström and M. Leisola (1999). “The impact of Metabolic Engineering on the Bioprocess Industry.” Kemia-Kemi 26(8): 633-638.
19. Leisola, M., T. Eerikäinen, and A.A. Aristidou (1999). “Bioprosessitekniikka tie koeputkesta tuotteeksi (Bioprocess Technology: from test tube to product).” Kemia-Kemi 26(8): 629-632.
20. Yang, Y.T., A.A. Aristidou, K.Y. San, and G.N. Bennett (1998). “Metabolic flux analysis of Escherichia coli deficient in the acetate production pathway and expressing the Bacillus subtilis acetolactate synthase.” Metabolic Engineering 1(1): 26-34.
21. Aristidou, A.A., K.Y. San, and G.N. Bennett (1995). “Metabolic engineering of Escherichia coli to enhance recombinant protein production through acetate reduction.” Biotechnology Progress 11: 475-8.
22. Chou C.H., A.A Aristidou, S.Y. Meng, G.N Bennett, and K.Y. San (1995). “Characterization of a pH-inducible promoter system for high-level expression of recombinant proteins in Escherichia coli.” Biotechnology and Bioengineering 47(2): 186-192.
23. Aristidou, A.A., K.Y. San, and G.N. Bennett (1994). “Modification of the central metabolic pathways in Escherichia coli to reduce acetate accumulation by the heterologous expression of the Bacillus subtilis acetolactate synthase gene.” Biotechnology and Bioengineering 44(8): 944-951.
24. San, K.Y., G.N. Bennett, C.H. Chou, and A.A. Aristidou (1994). “An optimization study of a pH-inducible promoter system for high-level recombinant protein production in Escherichia coli.” Annals of the New York Academy of Science 721: 268-76.
25. San, K.Y., G.N. Bennett, A.A. Aristidou, and C.H. Chou (1994). “Strategies in high-level expression of recombinant protein in Escherichia coli.” Annals of the New York Academy of Science 721: 257-67.
26. Aristidou, A.A., P.Y. Yu, and K.Y. San (1993). “Effects of glycine supplement on protein production and release in recombinant Escherichia coli.” Biotechnology Letters 15(4): 331 336.
27. Yu, P.Y, A.A. Aristidou, and K.Y. San (1991). “Synergistic effects of glycine and bacteriocin release protein in the release of periplasmic proteins in recombinant Escherichia coli.” Biotechnology Letters 13(5): 311 316.

PATENTS

1. Feldman, Reid M. Renny; Gunawardena, Uvini; Urano, Jun; Meinhold, Peter; Aristidou, Aristos; Dundon, Catherine Asleson; Smith, Christopher. “Yeast organism producing isobutanol at a high yield.” U.S. Patent 9,926,577 (2018).
2. Jessen; Holly.; Yi; Jian; Lundorff; Joshua; Liao; Hans; Negrete-Raymond; Ana; Suominen; Pirkko; Aristidou, Aristos; “Compositions and methods for increased ethanol production from biomass.” U.S. Pat. 9,862,975 (2018).
3. Rajgarhia, Vineet; Koivuranta, Kari; Penttilä, Merja; Ilmen, Marja; Suominen, Pirkko; Aristidou, Aristos; Miller, Chris; Olson, Stacey; Ruohonen, Laura. “Genetically modified yeast species and fermentation processes using genetically modified yeast.” U.S. Pat. 9,758,799 (2017).

4. Buelter; Thomas, Hawkins; Andrew, Porter-Scheinman; Stephanie, Meinhold; Peter, Dundon; Catherine Asleson, Aristidou; Aristos, Urano; Jun, Lies; Doug, Peters; Matthew, Dey; Melissa, Jancauskas; Justas, Kelly; Julie, Berry; Ruth. "Yeast microorganisms with reduced by-product accumulation for improved production of fuels, chemicals, and amino acids." US Patent 9,506,074 (2016).
5. Van Hoek, P., A. Aristidou, B. Rush. "Fermentation process using specific oxygen uptake rates for process control." U.S. Pat. 9,428,776 (2016).
6. Jessen; Holly.; Yi; Jian; Lundorff; Joshua; Liao; Hans; Negrete-Raymond; Ana; Suominen; Pirkko; Aristidou, Aristos;. "Compositions and methods for increased ethanol production from biomass." U.S. Pat. 9,181,563 (2016).
7. Rajgarhia, Vineet; Koivuranta, Kari; Penttilä, Merja; Ilmen, Marja; Suominen, Pirkko; Aristidou, Aristos; Miller, Chris; Olson, Stacey; Ruohonen, Laura. "Genetically modified yeast species and fermentation processes using genetically modified yeast." U.S. Pat. 9,410,158 (2016).
8. Hawkins, A.; D. Glassner, T. Buelter, J. Wade, P. Meinhold, M. Peters, P. Gruber, W. Evanko, A. Aristidou; M Landwehr. "Methods for the economical production of biofuel from biomass." U.S. Pat. 8,895,272 (2014).
9. Van Hoek, P., A. Aristidou, B. Rush. "Fermentation process using specific oxygen uptake rates for process control." U.S. Pat. 8,828,707 (2014).
10. Rajgarhia, Vineet; Koivuranta, Kari; Penttilä, Merja; Ilmen, Marja; Suominen, Pirkko; Aristidou, Aristos; Miller, Chris; Olson, Stacey; Ruohonen, Laura. "Genetically modified yeast species and fermentation processes using genetically modified yeast." U.S. Pat. 8,623,633 (2014).
11. Evanko; William A.; Eyal; Aharon M; Glassner; David A.; Miao; Fudu Aristidou; Aristos A.; Evans; Kent; Gruber; Patrick R.; Hawkins; Andrew C.; "Recovery of higher alcohols from dilute aqueous solutions." U.S. Pat. 8,614,077 (2013).
12. Feldman, Reid M. Renny; Gunawardena, Uvini; Urano, Jun; Meinhold, Peter; Aristidou, Aristos; Dundon, Catherine Asleson; Smith, Christopher. "Yeast organism producing isobutanol at a high yield." U.S. Patent 8,455,239 (2013).
13. Rajgarhia, Vineet; Koivuranta, Kari; Penttilä, Merja; Ilmen, Marja; Suominen, Pirkko; Aristidou, Aristos; Miller, Chris; Olson, Stacey; Ruohonen, Laura. "Genetically modified yeast species and fermentation processes using genetically modified yeast." U.S. Pat. 8,440,451 (2013).
14. Hawkins, A.; D. Glassner, T. Buelter, J. Wade, P. Meinhold, M. Peters, P. Gruber, W. Evanko, A. Aristidou; M Landwehr. "Methods for the economical production of biofuel from biomass.". U.S. Pat. 8,431,374 (2013).
15. Evanko; William A.; Eyal; Aharon M; Glassner; David A.; Miao; Fudu; Aristidou; Aristos A.; Evans; Kent; Gruber; Patrick R.; Hawkins; Andrew C.; "Recovery of higher alcohols from dilute aqueous solutions." U.S. Pat. 8,304,588 (2012).
16. Dundon, Catherine Asleson; Aristidou, Aristos; Hawkins, Andrew; Lies, Doug; Albert, Lynne H. "Methods of increasing dihydroxy acid dehydratase activity to improve production of fuels, chemicals, and amino acids." US Patent 8,273,565 (2012).
17. Evanko; William A.; Eyal; Aharon M; Glassner; David A.; Miao; Fudu; Aristidou; Aristos A.; Evans; Kent; Gruber; Patrick R.; Hawkins; Andrew C.; "Recovery of higher alcohols from dilute aqueous solutions." U.S. Pat. 8,283,505 (2012).
18. Lies, Doug; Porter-Scheinman, Stephanie; Julie, Kelly; Dundon, Catherine Asleson; Aristidou, Aristos; Hawkins, Andrew; "Reduced by-product accumulation for improved production of isobutanol." U.S. Pat. 8,158,404 (2012).
19. Buelter, Thomas; Hawkins, Andrew; Porter-Scheinman, Stephanie; Meinhold, Peter; Dundon, Catherine Asleson; Aristidou, Aristos; Urano, Jun; Lies, Doug; Peters, Matthew;

Dey, Melissa Jancauskas, Justas; Julie, Kelly; Ruth, Berry;. "Reduced by-product accumulation for improved production of isobutanol." U.S. Pat. 8,133,715 (2012).

20. Miller, M., P. Suominen, A. Aristidou, B. Hause, P. van Hoek, C. Dundon-Asleson. "Lactic acid-producing yeast cells having nonfunctional L- or D-lactate:ferricytochrome C oxidoreductase cells." U.S. Pat. 8,137,953 (2012).
21. Buelter, Thomas; Hawkins, Andrew; Porter-Scheinman, Stephanie; Meinhold, Peter; Dundon, Catherine Asleson; Aristidou, Aristos; Urano, Jun; Lies, Doug; Peters, Matthew; Dey, Melissa. "Yeast microorganisms with reduced by-product accumulation for improved production of fuels, chemicals, and amino acids." U.S. Pat. 8,133,715 (2012).
22. Evanko, W., A. Eyal, D. Glassner, F. Miao, A. Aristidou, K. Evans, P. Gruber, Patrick R., A. Hawkins. "Recovery of higher alcohols from dilute aqueous solutions." U.S. Patent 8,101, 808 (2012).
23. Suominen, Pirkko; Aristidou, Aristos; Pentilla, Merja; Ilmen, Merja; Ruohonen, Laura; Koivuranta, Kari; Roberg-Perez, Kevin. "Genetically modified yeast of the species Issatchenkia orientalis and closely relates species, and fermentation processes using same." US Patent 8,097,448 (2012).
24. Dundon, Catherine Asleson; Aristidou, Aristos; Hawkins, Andrew; Lies, Doug; Albert, Lynne H. "Methods of increasing dihydroxy acid dehydratase activity to improve production of fuels, chemicals, and amino acids." US Patent 8,071,358 (2011).
25. Dundon, Catherine Asleson; Aristidou, Aristos; Hawkins, Andrew; Lies, Doug; Albert;, Lynne H. "Methods of increasing dihydroxy acid dehydratase activity to improve production of fuels, chemicals, and amino acids." US Patent 8,017,376 (2011).
26. Feldman, Reid M. Renny; Gunawardena, Uvini; Urano, Jun; Meinhold, Peter; Aristidou, Aristos; Dundon, Catherine Asleson; Smith, Christopher. "Yeast organism producing isobutanol at a high yield." U.S. Patent 8,017,375 (2011).
27. Rajgarhia, Vineet; Koivuranta, Kari; Penttilä, Merja; Ilmen, Marja; Suominen, Pirkko; Aristidou, Aristos; Miller, Chris; Olson, Stacey; Ruohonen, Laura. "Genetically modified yeast species and fermentation processes using genetically modified yeast." U.S. Pat. 7,943,366 (2011).
28. Van Hoek, P., A. Aristidou, B. Rush. "Fermentation process using specific oxygen uptake rates for process control." U.S. Pat. 7,939,298 (2011).
29. Van Hoek, P., A. Aristidou, B. Rush. "Fermentation process using specific oxygen uptake rates for process control." U.S. Pat. 7,232,664 (2007).
30. Miasnikov, A., H. Ojamo, M. Povelainen, H. Gros, M. Toivari, P. Richard, L. Ruohonen, K. Koivuranta, J. Londesborough, A. Aristidou, M. Penttilä, C. Plazanet-Menut, J. Deutscher. (2007). "Manufacture of five-carbon sugars and sugar alcohols." US Patent 7,226,761 (2007).
31. Aristidou, A., J. Londesborough, M. Penttilä, P. Richard, L. Ruohonen, H. Soderlund, A. Teleman, M. Toivari, Mervi. "Transformed microorganisms with improved properties." US Patent 7,091,014 (2006).

SELECTED PRESENTATIONS

- "Metabolic Engineering of Redox and Energy Balances in Yeast for the Production of Chemicals from Renewable Resources" by M. Toivari, L. Ruohonen, P. Richard, J. Londeborough and A. Aristidou, presented at the 21st Symposium on Biotechnology for Fuels and Chemicals, held in Fort Collins, Colorado in May, 1999.
- "Development of Bioprocess Online Tools Based on Raman Spectroscopy and Membrane Inlet Mass Spectrometry (MIMS)" by A. Aristidou, T. Kotiaho, P. Niemelä and M. Suutarinen, presented at the TEKES (Finnish Funding Agency for Technology and

Innovation) Symposium on Online Process Monitoring Technologies, held in Tiistai, Finland in February, 2000.

- "On-Line Monitoring of Fermentation Processes by Membrane Inlet Mass Spectrometry" by I. Mattila, A. Aristidou, J.P. Pitkänen, R. Ketola, V. Tarkiainen and T. Kotiaho, presented at the 10th National Symposium on Mass Spectrometry, held in Tuusula, Finland in September, 2000.
- "Screening of Genes Enhancing Xylose Utilisation in Recombinant Saccharomyces cerevisiae" by L. Ruohonen, A. Aristidou, A. Teleman and M. Penttilä, "Characterisation and Expression in Yeast of a Sugar Permease from the Filamentous Fungus Trichoderma reesei" by L. Ruohonen, M. Walsh, E. Margolles-Clark, A. Aristidou, K. van Dam and M. Penttilä, and "Improved Ethanol Production by Saccharomyces cerevisiae Through Redox Balancing" by A. Aristidou, M. Toivari, L. Ruohonen, P. Richard, J. Londesborogh, A. Teleman and M. Penttilä, presented at the Yeast as a Cell Factory - EC Framework IV Symposium, held in The Netherlands in December, 1998.
- "Metabolic Re-Engineering of Saccharomyces cerevisiae for the Conversion of Xylose to Ethanol" by A. Aristidou, M. Toivari, L. Ruohonen, P. Richard, J. Londesborough, A. Teleman and M. Penttilä, presented at the 2nd European Symposium on Biochemical Engineering Science, held in Porto, Portugal in September, 1998.
- "Introducing Transhydrogenase Activity to Schizosaccharomyces pombe" by P. Richard, J. Londesborough, M. Toivari, A. Aristidou, L. Ruohonen and M. Penttilä, presented at the First International Fission Yeast Meeting, held in Edinburgh, United Kingdom in September, 1999.
- "A Metabolic Engineering Route to Lower Cost Chemicals and Polymers From Renewable Resources" by B. Rush and A. Aristidou, presented at the American Institute of Chemical Engineers (AIChE) Annual Meeting, held in San Francisco, CA in November, 2003.
- "Clean Fermentation Technology in Industrial Practice" by P. van Hoek and A. Aristidou, presented at the American Institute of Chemical Engineers (AIChE) Annual Meeting, held in Reno, Nevada in November, 2001.
- "Metabolic flux analysis for the identification of bottlenecks in xylose metabolism of recombinant Saccharomyces cerevisiae" by J.-P. Pitkänen, A. Aristidou, L. Salusjarvi, H. Maaheimo, L. Ruohonen and M. Penttilä, presented at the 23rd Symposium on Biotechnology for Fuels and Chemicals, held in Breckenridge, Colorado in May, 2001.
- "Selective evolution of Saccharomyces cerevisiae xylose metabolism in chemostat cultivations" by J.-P. Pitkänen, A. Aristidou, P. Richard, and M. Penttilä, presented at the 23rd Symposium on Biotechnology for Fuels and Chemicals, held in Breckenridge, Colorado in May, 2001.
- "^{13}C-NMR flux ratio Analysis of Saccharomyces cerevisiae growing on glucose or xylose in chemostat cultivations" by H. Maaheimo, J.-P. Pitkänen, A. Aristidou and M. Penttilä, presented at the Metabolic Engineering IV Applied Systems Biology Conference, held in Castelvecchio Pascoli, Italy in October, 2002.
- "Physiological Studies of Xylose Utilization by Genetically Engineered Saccaromyces cerevisae" by A. Aristidou, M. Toivari, L. Ruohonen, P. Richard, J. Londesborough, A. Teleman and M. Penttilä, presented at the Metabolic Engineering II Conference, held at Schloss Elmau/Oberbayern, Germany in October, 1988.

REFERENCES

Available upon request.