John Cirucci

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Education

Master of Science, Chemical Engineering	Lehigh University
Master of Geographic Information Systems	The Pennsylvania State University
Bachelor of Science, Chemical Engineering	The Pennsylvania State University

Professional Experience

ARIZONA STATE UNIVERSITY	Tempe, AZ
Chief Engineer, The Center for Negative Carbon Emissions	2020–present
Research Professor, LightWorks™	2020–present
Adjunct Professor, School of Sustainable Engineering and the Built Environment	2017–2020
SPATIAL ANALYTICS	Lehigh Valley, PA
Principal	2015–2020
AIR PRODUCTS	Allentown, PA
Exploratory Technology Manager, Corporate Technology	2012–2014
Senior Engineering Associate, Process and Separations Center	2007–2012
Technology Manager, Electronics Engineering	1999–2006
Process Engineering Manager, Electronics Engineering	1995–1999
Staff Engineer, Chief Engineers Office	1991–1995
Pulp and Paper Program Manager, Applied Research and Development	1988–1991
Applications Development Engineer, Wet Oxidation	1983–1988
Process Engineer, LNG	1981–1983

OTHER POSITIONS

Fellow, American Institute of Chemical Engineers	2010–present
Trustee, American Institute of Chemical Engineers Foundation	2011–present
Board Director, American Institute of Chemical Engineers	2012–2014
Chair & Member, AIChE Societal Impact Operating Council	2008–2012
Chair & Member, AIChE Center for Sustainable Technology Practices	2010–2012
Founding President & Member, LV Chapter, Engineers Without Borders–USA	2008–present

Papers & Presentations

Cirucci, J. (2019). Direct Air Capture, Advances and Opportunities, Proceedings of the Carbon Management Technology Conference. Houston TX. July 15-18, 2019.

Cirucci, J. (2018). Carbon Capture Location Matters – CCUS GIS and Supply Chain Analysis. Invited Lecturer, EAEE E4305: Carbon Utilization and Conversion. Columbia University, New York NY. April 12, 2018.

Cirucci, J. (2017). Geospatial Analysis for Energy and Environmental Applications. Invited Lecturer, Julie Ann Wrigley Global Institute of Sustainability Lecture Series. Arizona State University, Tempe AZ. October 24, 2017.

Cirucci, J. (2017). Humanitarian Service Opportunities for Chemical Engineers. Invited Lecturer, CHE 179 (Professional Development), Lehigh University, Bethlehem, PA. February 21, 2017.

Cirucci, J. (2016). Geospatial Considerations in a Fuels-from-Air Supply Chain Network. Proceedings of the 7th Annual Closing the Carbon Cycle Conference. Arizona State University, Tempe AZ. September 28-30, 2016. https://closingthecarboncycle.files.wordpress.com/2016/10/cirucci-2016-geospatial-considerations-in-a-fuels-from-air-supply-chain-network-final.pdf

Shah, J., Arslan, E., Cirucci, J. F., O'Brien, J., & Moss, D. (2016). Comparison of Oleo- vs Petro-Sourcing of Fatty Alcohols via Cradle-to-Gate Life Cycle Assessment. Journal of Surfactants and Detergents. http://doi.org/10.1007/s11743-016-1867-y

Cirucci, J. (2016). GIS for ChEs: Introduction to Geographic Information Systems. American Institute of Chemical Engineers AIChE Academy Webinar. Delivered February 3, 2016. http://www.aiche.org/academy/webinars/gis-ches-introduction-geographic-information-systems

Cirucci, J. (2016). GIS-Based MCDA: Evaluating Complex Decisions using GIS. Earthshift Global Webinar. Delivered June 2, 2016. https://www.earthshiftglobal.com/brownbag

Cirucci, J. F., Miller, D. A., & Blanford, J. I. (2015). Retrospective GIS-Based Multi-Criteria Decision Analysis: A Case Study of California Waste Transfer Station Siting Decisions. Proceedings of the International Symposium on Sustainable Systems and Technologies (Vol. 3). http://doi.org/10.6084/m9.figshare.1512514

Cirucci, J. (2015). GIS-Based MCDA Applications for Humanitarian Development. Invited Lecturer, GEOG 364 (Spatial Analysis), The Pennsylvania State University, University Park, PA. November 11, 2015.

Cirucci, J. (2015). Environmental Life Cycle Assessment Method and Application. Invited Lecturer, CHE 8558 (Process Design), Villanova University, Villanova, PA. September 24, 2015.

Cirucci, J. F. (2015). Retrospective GIS-Based Multi-Criteria Decision Analysis. PSU No Boundaries Graduate Student Conference. April 11, 2015.

Cirucci, J. F. (2014). Bio-electrochemical Integration of Waste Heat Recovery, Waste-to-Energy Conversion, and Waste-to-Chemical Conversion with Industrial Gas and Chemical Manufacturing Processes. Department of Energy, Advanced Manufacturing Office Peer Review, May 6-7, 2014. http://energy.gov/sites/prod/files/2014/06/f16/21-APCI_AMO_RD_Project_Peer_Review_2014.pdf

Arslan, E., Cirucci, J. F., Farmer, L., & Listemann, M. (2013). Breathing life into fuel use. International Cement Review, (August).

Jennings, J., Thomas, C., Magnotta, V, Roy, B., Hristofas, K., Cirucci, J., Duxbury, P. (1996). Characterization of a commercial oxygen-bleaching stage in a mill recycling mixed office wastepaper. TAPPI journal (USA).

Cirucci, J. (1987). "Direct Injection versus Dynamic Mixing: A Mill Scale Comparison of Medium-Consistency Mixing Techniques for Oxygen and Steam," TAPPI Proceedings, 1987 International Oxygen Delignification Conference, pp. 81-85.

Cirucci, J. (1985). “Eo Optimization by Vent Gas Analysis: Process Control and Safety,” TAPPI Proceedings, 1985 Pulping Conference, pp. 455-459.

Patents and Patent Applications

Cirucci, J. F., Lackner, K. S. (2019). “Carbon dioxide upgrade and energy storage system and method.” WO2019/046430 Al.

Baiget, S. G., Vega, F.M.L., Cirucci, J. F., Montpart, P. N., Lafuente, S. F. J., Baez, L. J. A., Guisasola, C. A. (2012). “Process for the methanogenesis inhibition in single chamber microbial electrolysis cells.” EP 2747181 A1.

Rajaraman, S. K., Cirucci, J. F., Xu, J., Vero, R., Higginbotham, P., & Fogash, K. B. (2011). "Method and System to Produce Electric Power." U.S. Patent Application 13/242,863.

Xu, J., Vero, R., Herron, D. M., Persico, P. J., Pearlstein, R. M., Cirucci, J. F., & Higginbotham, P. (2010). "Method and system for periodic cooling, storing, and heating of atmospheric gas." U.S. Patent Application 12/817,627.

Cirucci, J. F., Miller, D., & Kottler, P. D. (2009). "Self-contained distillation purifier/superheater for liquid-fill product container and delivery systems." U.S. Patent No. 7,481,074. Washington, DC: U.S. Patent and Trademark Office.

Agarwal, R. K., Ryals, G. L., Cao, W., Cirucci, J. F., Apollo, R. W., & McNesby, D. (2007). “Removal of sulfur-containing impurities from volatile metal hydrides.” U.S. Patent No. 7,250,072. Washington, DC: U.S. Patent and Trademark Office.

Gershtein, V. Y., Schwarz, A., McDermott, W. T., Cirucci, J. F., & Ivankovits, J. C. (2007). “Generation and delivery system for high pressure ultra-high purity product.” U.S. Patent No. 7,201,018. Washington, DC: U.S. Patent and Trademark Office.

Gershtein, V. Y., Mattiola, P. A., Cirucci, J. F., & Ivankovits, J. C. (2006). “System for Supply and Delivery of High Purity and Ultrahigh Purity Carbon Dioxide.” U.S. Patent No. 7,076,969. Washington, DC: U.S. Patent and Trademark Office.

Gershtein, V. Y., Ford, R. W., & Cirucci, J. F. (2005). “Monitoring of Ultra-High Purity Product Storage Tanks during Transportation.” U.S. Patent No. 6,938,654. Washington, DC: U.S. Patent and Trademark Office.

Gershtein, V. Y., Ma, P., Hoffman, S. W., Butler, C. R., & Cirucci, J. F. (2005). “Vessel with Optimized Purge Gas Flow and Method Using Same.” U.S. Patent No. 6,901,941. Washington, DC: U.S. Patent and Trademark Office.

Fidkowski, Z. T., Cirucci, J. F., Agrawal, R., & Conway, T. E. (2002). “Process for Concentrating Fluorine Compounds.” U.S. Patent No. 6,457,327. Washington, DC: U.S. Patent and Trademark Office.

Fidkowski, Z. T., Cirucci, J. F., Agrawal, R., Suchdeo, S. R., & Auvil, S. R. (2001). “Purification of Nitrogen Trifluoride by Continuous Cryogenic Distillation.” U.S. Patent No. 6,276,168. Washington, DC: U.S. Patent and Trademark Office.

Cirucci, J. F., Knopf, J. A., Magnotta, V. L., & Schmidt, W. P. (1997). “Process for the Treatment of Pulp with Oxygen and Steam Using Ejectors.” U.S. Patent No. 5,690,786. Washington, DC: U.S. Patent and Trademark Office.

Magnotta, V. L., Ayala, V., & Cirucci, J. F. (1996). “Method for Producing Fully Oxidized White Liquor.” U.S. Patent No. 5,500,085. Washington, DC: U.S. Patent and Trademark Office.

Magnotta, V. L., Naddeo, R. C., Ayala, V., Cirucci, J. F., & Fox Jr, V. G. (1995). “Selective White Liquor Oxidation.” U.S. Patent No. 5,382,322. Washington, DC: U.S. Patent and Trademark Office.

Cirucci, J. F., & Gunardson, H. H. (1994). “Control of Chemical Dosage to a Pulp Slurry.” U.S. Patent No. 5,306,391. Washington, DC: U.S. Patent and Trademark Office.