

Arthur J. Ragauskas
Professor
2022

Governor's Chair in Biorefining
Fellow of American Association for the Advancement of Science
Fulbright Chair of Alternative Energy
Center for BioEnergy Innovation
Oak Ridge National Laboratory
Department of Chemical and Biomolecular Engineering
The University of Tennessee, Knoxville
Center for Renewable Carbon
Department of Forestry, Wildlife, and Fisheries
The University of Tennessee Institute of Agriculture

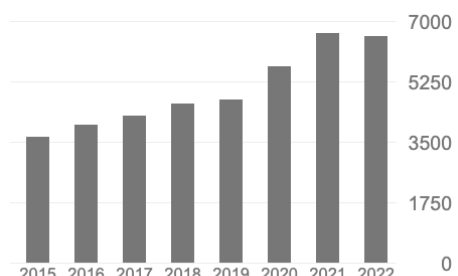
Brief Biographical Sketch

Dr. Arthur Ragauskas held the first Fulbright Chair in Alternative Energy and is a Fellow of the American Association for the Advancement of Science, the International Academy of Wood Science, and TAPPI. In 2014, he assumed a Governor's Chair for Biorefining based in the University of Tennessee's Department of Chemical and Biomolecular Engineering, with a complementary appointment in the UT Institute of Agriculture's Department of Forestry, Wildlife, and Fisheries and serves in the Energy and Environmental Sciences Directorate, Biosciences Division, at ORNL. His research program is directed at understanding and exploiting innovative sustainable bioresources for the circular economy. This multifaceted program is targeted to develop new and improved applications for nature's premiere renewable biopolymers for biofuels, biopower, and bio-based materials and chemicals. His research program has been sponsored by NSF, USDA, DOE, GA Traditional Industry Program, a consortium of industry partners, and several fellowship programs which are summarized in **668 peer-reviewed** publications. His Fulbright-sponsored activities at the Chalmers University of Technology, Sweden were focused on forest biorefinery and new biofuel conversion technologies for lignocellulosics. Currently, Dr. Ragauskas manages a research group of graduate students, postdoctoral research fellows, a research scientist, and visiting scientists. He is the recipient of the 2014 TAPPI Gunnar Nicholson Gold Medal Award, the 2014 ACS Affordable Green Chemistry Award, the 2017 AIChE Green Processing Award, the 2017 Academia Distinguished Service Award, 2019 AIChE Chase Award and RSC Environment Prize (2022). In addition, his students and postdocs have won several awards, including the ACS graduate research award, the ORNL UT-Battelle Award, and the ORNL Supplementary Performance Award.

Dr. Ragauskas is an Associate Editor for Biofuels, Bioproducts and Biorefining, Biofuels, BioEnergy Research, Industrial Biotechnology, Taiwan Journal of Forest Service, TAPPI J., Holzforschung, Journal of Biobased Materials and Bioenergy, Journal of Petroleum Technology and Alternative Fuels, The Open Biotechnology Journal, Current Biotechnology, and J. Wood Chemistry and Technology. He is an editorial board member of Sustainability and the Journal of Chemical Technology and Biotechnology. Dr. Ragauskas has served on several advisory boards and review panels including the Austrian Science Fund, European Commission Research Directorate, National Science Academy, J. Paul Getty Trust, NSF, USDA, DOE, ARAPA-E, NSERC, TAPPI Research Management Committee, Netherlands Organization for Scientific Research (NWO), Swedish

Foundation for Strategic Research, Swedish VINN Excellence Center, Swedish Knowledge Foundation, VTT Technical Research Centre of Finland, ERA Chemistry, Swiss National Science Foundation, Finnish Academy of Science Norway Research Council, The Technology Foundation STW, Agence Nationale de la Recherche and Singapore Agency for Science, Technology, and Research. Dr. Ragauskas has been an invited visiting professor at Universidade da Beira Interior, Portugal; Chalmers University of Technology, Sweden; Royal Institute of Technology/ STFi, Stockholm, Sweden; and Southeast University, China, and South China University of Technology, China.

Contact Info:

<p>Tickle College of Engineering, Department of Chemical and Biomolecular Engineering, 419 Dougherty Engineering Building, The University of Tennessee Knoxville, 1512 Middle Drive, Knoxville, TN, 37996-2200. Tel:(865) 974-2421</p>	<p>Email: aragausk@utk.edu GOOGLE H INDEX: 110 Cited by VIEW ALL</p> <table border="1"> <thead> <tr> <th></th> <th>All</th> <th>Since 2017</th> </tr> </thead> <tbody> <tr> <td>Citations</td> <td>53366</td> <td>32638</td> </tr> <tr> <td>h-index</td> <td>110</td> <td>84</td> </tr> <tr> <td>i10-index</td> <td>549</td> <td>453</td> </tr> </tbody> </table>  <table border="1"> <caption>Annual Citation Counts (2015-2022)</caption> <thead> <tr> <th>Year</th> <th>Citations</th> </tr> </thead> <tbody> <tr><td>2015</td><td>~3500</td></tr> <tr><td>2016</td><td>~4000</td></tr> <tr><td>2017</td><td>~4500</td></tr> <tr><td>2018</td><td>~5000</td></tr> <tr><td>2019</td><td>~5500</td></tr> <tr><td>2020</td><td>~6500</td></tr> <tr><td>2021</td><td>~7000</td></tr> <tr><td>2022</td><td>~6800</td></tr> </tbody> </table>		All	Since 2017	Citations	53366	32638	h-index	110	84	i10-index	549	453	Year	Citations	2015	~3500	2016	~4000	2017	~4500	2018	~5000	2019	~5500	2020	~6500	2021	~7000	2022	~6800
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<p>Home Pages: http://biorefinery.utk.edu/; http://cbe.utk.edu/people/art-j-ragauskas/ http://rbi.gatech.edu/news/ragauskas-named-positions-oak-ridge-national-laboratory-university-tennessee; https://www.ornl.gov/staff-profile/arthur-j-ragauskas</p>																															

ARTHUR J. RAGAUSKAS
CURRICULUM VITAE

RAGAUSKAS, ARTHUR JONAS, Professor /Governor's Chair
Department of Chemical and Biomolecular Engineering, University of Tennessee

EDUCATIONAL BACKGROUND

Ph.D. Science, University of Western Ontario 1980 – 1985
Honors B.S. Chemistry, University of Western Ontario 1976 – 1980

EMPLOYMENT HISTORY

Professor/Governor's Chair Biorefining 2014 – Present
Department of Chemical and Biomolecular Engineering
Center for Renewable Carbon, Department of Forestry, Wildlife, and Fisheries
University of Tennessee
Oak Ridge National Laboratory

Professor 2007 – 2014
School of Chemistry and Biochemistry
Georgia Institute of Technology (GA Tech)

Associate Professor 2003 – 2007
School of Chemistry and Biochemistry
Georgia Institute of Technology (GA Tech)

Professor of Wood Chemistry 1998 – 2003
Institute of Paper Science and Technology

Associate Professor of Wood Chemistry 1995 – 1998
Institute of Paper Science and Technology

Assistant Professor of Wood Chemistry 1989 – 1995
Institute of Paper Science and Technology (IPST)

National Research Council of Canada, Associate Research Scientist 1987 – 1989

NSERC Postdoctoral Fellow, Colorado State University 1986 – 1987

National Science and Engineering Research Council of Canada (NSERC) 1985 – 1986
Postdoctoral Fellow, University of Alberta, Canada

CURRENT FIELDS OF EXPERTISE

BioRefining, BioFuels, Bio-Based Materials & Chemicals, BioComposites, BioPower, Circular Economy, Fiber Modification, Nanobioterials, Sustainability/Green Chemistry, Pulping/Bleaching, Chemistry of Natural Biopolymers including Cellulose, Hemicellulose, and Lignin, Polysaccharides, Organic/Carbohydrate Chemistry, Waste Plastic Upcycling

HONORS, AWARDS, AND RECOGNITIONS

- RSC Environment, Sustainability, and Energy Division open award: Environment Prize (2022)
- Clarivate Highly Cited Researcher (2021)
- AD Scientific Index: Highly Cited Researchers (2021)
- 2019 AIChE Chase Award
- Joint Faculty Award in Science and Technology, UT-Battelle (2019)
- Nominated to Sigma Xi (2019)
- Clarivate Analytics, Publons: Ragauskas named one of the world's most highly cited researchers in his field for 2018
- Fellow Royal Society of Chemistry (2018)
- Albert Nelson Marquis Lifetime Achievement Award (2017)
- Green Process Engineering American Institute of Chemical Engineers Award (2017)
- University of California, Bourns College of Engineering – Center for Environmental Research and Technology, Distinguished Service Award (2017)
- Governor's Chair Biorefining (2014 – Present)
- TAPPI Gunnar Nicholson Gold Medal Award (2014)
- ACS Award for Affordable Green Chemistry (2014)
- ORNL Visiting Fellow (2013)
- Elected American Association for the Advancement of Science Fellow (2012)
- Elected to Academy Board of International Academy of Wood Science (2012)
- Fulbright Distinguished Chair in Alternative Energy (2008-2009)
- Nominated to National Commission on Energy Policy (2008)
- Recipient of 2008 William H. Aiken Research Prize
- Served on the Committee on Technologies to Deter Currency Counterfeiting, Board on Manufacturing and Engineering Design, Division on Engineering and Physical Sciences, National Research Council of the National Academies (2005-2006)
- Elected Fellow to International Academy of Wood Science (2003)
- Elected TAPPI Fellow (2003)
- Recipient of Luso-American Foundation teaching fellowship at Departamento Ciénciae Tecnologia do Papel Universidade da Beira Interior, Covilhã - Portugal (2003)
- Invited guest teaching professor at Chalmers University of Technology, Sweden (2001)
- Best Poster at International Pulp Bleaching Conference, Halifax (2000)
- 1999 IPST President's Award for Education
- 1999 IPST Teacher of the Year
- Cited in Marquis Who's Who in Science and Engineering (1999-present)
- Cited in Who's Who in Plastics and Polymers (2000-2002)
- Invited guest professor to Royal Institute of Technology/STFI, Stockholm, Sweden (1998)
- Invited guest professor South China University of Technology, Guangzhou, China (1996)
- Research Associate Fellowship, National Research Council Canada (1987-1989)
- National Science and Engineering Research Council Canada, Postdoc Fellowship (1985-1987)
- National Science and Engineering Research Council Canada, Graduate Fellowship (1980-1984)

PATENTS

- Sannigrahi, P.; Ragauskas, A.J.; Miller, S. J. Chlorine dioxide treatment of biomass feedstock useful in production of biofuel ethanol. U.S. Pat. Appl. Publ. (2012), US 20120040413 A1 20120216; PCT Int. Appl. (2012), WO 2012021725 A1 20120216.
- Ziemer, C.J.; Arcidiacono, S.; Ragauskas, A.; Morrison, M., Novel fibro-biotic bacterium isolate. U.S. Pat. Appl. Publ. (2011), US 20110076356 A1 Application: US 2009-569572 20090929. Priority: US 2009-569572 20090929.
- Deng, Y.; Yoon, S.Y.; Ragauskas, A.; White, D., Methods and Compositions for Papermaking. U.S. Pat. 7,964,063 B2 (2011).
- Ragauskas, Arthur J.; Kim, Dong Ho., Metal Substituted Xerogels for Improved Peroxide Bleaching of Kraft Pulps. U.S. Pat. Appl. Publ. (2003), CODEN: USXXCO US 2003019596 A1 20030130 CAN 138:108518 AN 2003:77170.
- Chakar, F.S; Ragauskas, A.J., Methods for Reducing Fluorescence in Paper-Containing Samples. Patent # 6,294,047 B1 & 6,387,211 B1 (2001).

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1. Bioenergy Underground: Challenges and opportunities for phenotyping roots and the microbiome for sustainable bioenergy crop production. York, Larry M.; Cumming, Jonathan R.; Trusiak, Adrianna; Bonito, Gregory; Haden, Adam C. von; Kalluri, Udaya C.; Tiemann, Lisa K.; Andeer, Peter F.; Blanc-Betes, Elena; Diab, Jonathan H; Favela, Alonso; Germon, Amandine; Gomez-Casanovas, Nuria; Hyde, Charles A.; Kent, Angela D.; Ko, Dae Kwan; Lamb, Austin; Missaoui, Ali M.; Northern, Trent R.; Pu, Yunqiao; Ragauskas, Arthur J.; Raglin, Sierra; Scheller, Henrik V.; Washington, Lorenzo; Yang, Wendy H. *The Plant Phenome J.* (February 2022) e20028.
2. Biotechnology for a sustainable future: biomass and beyond. Yuan, Joshua S.; Pavlovich, Matthew J.; Ragauskas, Arthur J.; Han, Buxing. *Trends in Biotechnology* (2022), Ahead of Print.
3. Emerging Modification Technologies of Lignin-based Activated Carbon toward Advanced Applications. Chen, Kai; He, Zi-Jing; Liu, Zhi-Hua; Ragauskas, Arthur J.; Li, Bing-Zhi ; Yuan, Ying-Jin. *ChemSusChem* (2022), Ahead of Print
4. Lignin as a bioactive polymer and heavy metal absorber - an overview. Sadeghifar, Hasan; Ragauskas, Arthur. *Chemosphere* (2022), 309(Part_1), 136564.
5. A photosensitive sustainable lignin nanoplatfor for multimodal image-guided mitochondria-targeted photodynamic and photothermal therapy. Liu, X.; Li, M.; Li, X.; Ge, M.; Liu, S.; Li, S.; Li, J.; Ding, J.; Ragauskas, A. J.; Sun, W.; James, T.D.; Chen, Z. *Materials Today Chemistry* (2022), 26, 101000.
6. Catalytic cascade upcycling single-use natural rubber glove wastes into fuels via a two-stage pressurized fixed-bed reactor. Wang, Jia; Jiang, Jianchun; Meng, Xianzhi; Lam, Su Shiung; Ragauskas, Arthur J.; Wang, Yanqin. *Fuel Processing Technology* (2022), 238, 107490.
7. Bioconversion and quantification of humic substances from low rank coals using indigenous fungal isolates. Rehman, Muhammad Zia ur; Akhtar, Kalsoom; Khan, Ali Nisar; Tahir, Muhammad Ali; Khaliq, Shazia; Akhtar, Nasrin; Ragauskas, Arthur J. *Journal of Cleaner Production* (2022), 376, 134102.
8. Enhancing thermal conductivity and toughness of cellulose nanofibril/boron nitride nanosheet composites. Xu, Ying; Chen, Xinrui; Zhang, Caixia; Ragauskas, Arthur J.; Wen, Jia-Long;

- Zhao, Peitao; Si, Chuanling; Xu, Ting; Song, Xueping. *Carbohydrate Polymers* (2022), 296, 119938.
9. Utilization of guaiacol-based deep eutectic solvent for achieving a sustainable biorefinery. Huang, Chen; Cheng, Jinyuan; Zhan, Yunni; Liu, Xuze; Wang, Jia; Wang, Yunxuan; Yoo, Chang Geun; Fang, Guigan; Meng, Xianzhi; Ragauskas, Arthur J.; Song, X. *Bioresource Technology* (2022), 362, 127771.
 10. Converting polyisoprene rubbers into bio-jet fuels via a cascade hydrolysis and vapor-phase hydrogenation process. Wang, Jia; Jiang, Jianchun; Zhang, Zhukun; Meng, Xianzhi; Sun, Yunjuan; Ragauskas, Arthur J.; Zhang, Qiaozhi; Tsang, Daniel C. W. *Energy Conversion and Management* (2022), 270, 116250.
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 12. Creating values from wastes: Producing biofuels from waste cooking oil via a tandem vapor-phase hydrotreating process. Wang, Jia; Jiang, Jianchun; Li, Dongxian; Meng, Xianzhi; Zhan, Guowu; Wang, Yunpu; Zhang, Aihua; Sun, Yunjuan; Ruan, Roger; Ragauskas, Arthur J. *Applied Energy* (2022), 323, 119629.
 13. Revealing the mechanism of surfactant-promoted enzymatic hydrolysis of dilute acid pretreated bamboo. Huang, Caoping; Zhao, Xiaoxue; Zheng, Yayue; Lin, Wenqian; Lai, Chenhuan; Yong, Qiang; Ragauskas, Arthur J.; Meng, Xianzhi. *Bioresource Technology* (2022), 360, 127524.
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 18. Effective biomass fractionation and lignin stabilization using a diol DES system. Cheng, Jinyuan; Huang, Chen; Zhan, Yunni; Han, Shanming; Wang, Jia; Meng, Xianzhi; Yoo, Chang Geun; Fang, Guigan; Ragauskas, Arthur J. *Chemical Engineering Journal (Amsterdam, Netherlands)* (2022), 443, 136395.
 19. Application of Box–Behnken Design in Optimizing Product Properties of Supercritical Methanol Co-liquefaction of Rice Straw and Linear Low-density Polyethylene. Yuan, Z.; Jia, G.; Cui, X.; Song, X.; Wang, C.; Zhao, P.; Ragauskas, A.J. *SSRN Electronic Journal* (2022) DOI: 10.2139/ssrn.4044354.

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24. Deuterium incorporation into cellulose: a mini-review of biological and chemical methods. Song, Yan; Meng, Xianzhi; Jiang, Wei; Evans, Barbara R.; Ben, Haoxi; Zhang, Yuanming; Pu, Yunqiao; Pingali, Sai Venkatesh; Davison, Brian H.; Zhang, Sai; Davison, Brian, H.; Zhang, Sai; Han, Guangting Han. *Ragauskas, Arthur, J. Cellulose* (2022), 29(8), 4269-4286.
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27. Genome-Wide Analysis and Expression Profiling of SlHsp70 Gene Family in *Solanum lycopersicum* Revealed Higher Expression of SlHsp70-11 in Roots under Cd²⁺ Stress. Abbas, Manzar; Li, Yunzhou; Elbaiomy, Rania G; Yan, Kuan; Ragauskas, Arthur J; Yadav, Vivek; Soaud, Salma A; Islam, Md Monirul; Saleem, Noor; Noor, Zarqa; Zafar, Hussian, Syed, Sara; Abbas, Mubashir; Abbas, Sammar; Li, Jia Li; El-Sappah, Ahmed H. El-Sappah. *Frontiers in bioscience* (2022), 27(6), 186.
28. Hydrogen bond-induced aqueous-phase surface modification of nanocellulose and its mechanically strong composites. Li, Kai; Li, Yuzhan; Tekinalp, Halil; Kumar, Vipin; Zhao, Xianhui; Pu, Yunqiao; Ragauskas, Arthur J.; Nawaz, Kashif; Aytug, Tolga; Ozcan, Soydan. *Journal of Materials Science* (2022), 57(17), 8127-8138.
29. Preparation and characterization of aminated co-solvent enhanced lignocellulosic fractionation lignin as a renewable building block for the synthesis of non-isocyanate polyurethanes. Meng, Xianzhi; Zhang, Shuyang; Scheidemantle, Brent; Wang, Yun-yan; Pu, Yunqiao; Wyman, Charles E.; Cai, Charles M.; Ragauskas, Arthur J. *Industrial Crops and Products* (2022), 178, 114579.
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- Xiong; Yoo, Chang Geun; Liu, Qianting; Meng, Xianzhi; Xiong, Long; Ragauskas, Arthur J.; Yang, Haitao. *Bioresource Technology* (2022), 350, 126885.
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 32. Preparation, Properties, and Application of Lignocellulosic-Based Fluorescent Carbon Dots. Song, Xueping; Zhao, Siyu; Xu, Ying; Chen, Xinrui; Wang, Shuangfei; Zhao, Peitao; Pu, Yunqiao; Ragauskas, Arthur J. *ChemSusChem* (2022), 15(8), e202102486.
 33. Effects of temperature and time on supercritical methanol Co-Liquefaction of rice straw and linear low-density polyethylene wastes. Yuan, Zhilong; Jia, Guangchao; Cui, Xin; Song, Xueping; Wang, Cuiping; Zhao, Peitao; Ragauskas, Art J. *Energy* (2022), 245, 123315.
 34. Cosolvent enhanced lignocellulosic fractionation tailoring lignin chemistry and enhancing lignin bioconversion. Zhao, Zhi-Min; Meng, Xianzhi; Scheidemantle, Brent; Pu, Yunqiao; Liu, Zhi-Hua; Li, Bing-Zhi; Wyman, Charles E.; Cai, Charles M.; Ragauskas, Arthur J. *Bioresource Technology* (2022), 347, 126367.
 35. Enhancing Lignin Dispersion and Bioconversion by Eliminating Thermal Sterilization. Zhao, Zhi-Min; Meng, Xianzhi; Senanayake, Manjula; Pingali, Sai Venkatesh; Pu, Yunqiao; Li, Mi; Ma, Litong; Xu, Jifei; Ragauskas, Arthur J. *ACS Sustainable Chemistry & Engineering* (2022), 10(10), 3245-3254.
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 37. Opportunities and challenges for flow-through hydrothermal pretreatment in advanced biorefineries. Meng, Xianzhi; Yoo, Chang Geun; Pu, Yunqiao; Ragauskas, Arthur J. *Bioresource Technology* (2022), 343, 126061.
 38. Tree-inspired lignin microrods-based composite heterogeneous nanochannels for ion transport and osmotic energy harvesting. Cheng, Peng; Chen, Sheng; Li, Xin; Xu, Yanglei; Xu, Feng; Ragauskas, Arthur J. *Energy Conversion and Management* (2022), 255, 115321.
 39. Recycling of natural fiber composites: Challenges and opportunities. Zhao, Xianhui; Copenhaver, Katie; Wang, Lu; Korey, Matthew; Gardner, Douglas J.; Li, Kai; Lamm, Meghan E.; Kishore, Vidya; Bhagia, Samarthya; Tajvidi, Mehdi; Tekinalp, Halil; Oyedemi, Oluwafemi; Wasti, Sanjita; Wasti, Erin; Ragauskas, Arthur, J.; Zhu, Hongli; Peter, William H.; Ozcan, Soydan. *Resources, Conservation, and Recycling* (2022), 177, 105962.
 40. Lignin-enzyme interaction: A roadblock for efficient enzymatic hydrolysis of lignocellulosics. Huang, Caoxing; Jiang, Xiao; Shen, Xiaojun; Hu, Jinguang; Tang, Wei; Wu, Xinxing; Ragauskas, Arthur; Jameel, Hasan; Meng, Xianzhi; Yong, Qiang. *Renewable & Sustainable Energy Reviews* (2022), 154, 111822.
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43. A Unique Bacterial Pelletized Cultivation Platform in *Rhodococcus opacus* PD630 Enhanced Lipid Productivity and Simplified Harvest for Lignin Bioconversion. Xu, Bing; Li, Qiang; Pu, Yuanqiao; Xie, Shangxian; Ragauskas, Arthur J.; Arreola-Vargas, Jorge; Liu, Zhi-Hua; Yuan, Joshua S. *ACS Sustainable Chemistry & Engineering* (2022), 10(3), 1083-1092.
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45. Structural Reorganization of Noncellulosic Polymers Observed In Situ during Dilute Acid Pretreatment by Small-Angle Neutron Scattering. Yang, Zhi; Foston, Marcus B.; O'eill, Hugh; Urban, Volker S.; Ragauskas, Arthur; Evans, Barbara R.; Davison, Brian H.; Pingali, Sai Venkatesh. *ACS Sustainable Chemistry & Engineering* (2022), 10(1), 314-322.
46. Evaluating the mechanism of milk protein as an efficient lignin blocker for boosting the enzymatic hydrolysis of lignocellulosic substrates. Huang, Caoxing; Lin, Wenqian; Zheng, Yayue; Zhao, Xiaoxue; Ragauskas, Arthur; Meng, Xianzhi. *Green Chemistry* (2022), 24(13), 5263-5279.
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- Special Issue of ChemSusChem on Lignin Valorization: From Theory to Practice. Sun, Run-Cang; Samec, Joseph S. M.; Ragauskas, Arthur J. *ChemSusChem* (2020), 13(17),
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INVITED JOURNAL COVERS

- Chemical and Morphological Structure of Transgenic Switchgrass Organosolv Lignin Extracted by Ethanol, Tetrahydrofuran, and γ -Valerolactone Pretreatments. ACS Sustainable Chemistry & Engineering (2022), 10(28)
- Preparation, Properties, and Application of Lignocellulosic-Based Fluorescent Carbon Dots. ChemSusChem., (August 2022)
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- Green Chemistry, (2021) 23(1) 1-614 (January 2021)
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MEETINGS AND SYMPOSIA

HONORARY/PLENARY/INVITED SPEAKER

1. The 3rd International Conference on Materials Science & Nanotechnology: Future Materials 2022, Coal polymer composites prepared by fused deposition modeling (FDM) 3D printing. Shuyang Zhang, Muhammad Zia ur Rehman, Samarthya Bhagia, Xianzhi Meng, Harry M. Meyer, III, Hsin Wang, Michael R. Koehler, Kalsoom Akhtar, David P. Harper, Arthur J. Ragauskas (October 2022)
2. University of Cincinnati, Department of Chemical and Environmental Engineering, College of Engineering and Applied Science, Department of Chemical and Environmental Engineering: Challenges and Opportunities in Biorefining (October 2022)
3. ACS Meetings & Expositions - American Chemical Society. Lignin Valorization Old and New Lessons. ACS Biomaterials, Biofuels, and Biochemicals from Lignocelluloses-Symposium for Prof. Run-Cang Sun [2020] Anselm Payen Award (April 2021)
4. Lignin Valorization for Current/Tomorrow's Biorefining Operations. Sustainable Materials - Innovating Our Future Beyond the Pandemic (September 2020)
5. Lignocellulosic Valorization and Biorefining. EPNOE Conference, Aveiro, Portugal (2019)
6. Fractionating Lignin towards Diversified Valorization Routes. International Conference on Biomass Conversion and Renewable Materials. Guilin, China (October 2019)
7. Biorefining for Bio-Derived Materials and Fuels. Plants to Projects Network, Birmingham Science Museum, Birmingham, England (November 7, 2018)
8. A Deep Dive in Biomass Recalcitrance. European Bioenergy Research Institute, Aston University, England (November 8, 2018)
9. Integration Thermochemical and Biological Biorefining of Biomass, Xiamen Forum on Biomass Frontiers 2018, Xiamen, China (October 2018)
10. Advances in The Characterization and Analysis of Pyrolysis and Upgraded Oils, 2018 Thermal & Catalytic Sciences Symposium, Auburn, AL (October 2018)
11. Elucidating and addressing biomass recalcitrance for cellulosic ethanol production. ECO-BIO Challenges in Building a Sustainable Biobased Economy, Dublin (2018)
12. Biomass characterization and utilization. Wallenberg Wood Science Center, Gothenburg, Sweden (December 2017)
13. Valorizing Biorefinery Lignin, Inaugural Workshop of China-US Center for Biomass Science and Engineering, Nanjing, China (November 2017)
14. Wood Chemist's Adventure in Biomass Recalcitrance, Graduate Student Seminar, Department of Forest Biomaterials, North Carolina State University (October 2017)
15. Structural Characterization of Co-Solvent Enhanced Lignocellulosic Fractionation Pretreated Lignin. Meng, X; Cai, C.M.; Pu, Y.; Parikh, A.; Wyman, C.; Ragauskas, A.J. 17th Annual Syracuse CoE Symposium (October 2017)

16. Valorizing Lignin, Qingdao University, Qingdao, China (September 2017)
17. Biorefining Lignin, Southeast University, Nanjing, China (September 2017)
18. Valorizing Biorefinery Lignin, Nanjing Forestry University, Nanjing China (September 2017)
19. Lignin Biorefining, Fujian Agriculture and Forestry University, Fuzhou, China (September 2017)
20. Completing the New Biofuel and Bio-Derived Chemicals and Materials Research Challenge. AIChE Annual Meeting (October 2017)
21. Fractionating Lignin Towards Diversified Valorization Route, International Conference on Biomass Conversion and Renewable Materials 2017 (ICBCRM'17) in Syracuse, New York.
22. Recalcitrance: The plant cell wall and cellulosic biofuels. 254th American Chemical Society National Meeting & Exposition, MN (August 2017)
23. Fractionating Lignin towards Diversified Valorization Routes. International Conference on Biomass Conversion and Renewable Materials, NY (August 2017)
24. Valorizing Lignin, 5th International Conference on Green Chemistry and Technology. Rome, Italy (July 2017)
25. Advances in Biorefining to Biofuels. The 10th World Bioenergy Symposium, Dongguan, China (December 2016)
26. Fundamentals of biorefining and lignin valorization. Workshop on Second Generation Bioethanol 2016, Campinas, Brazil (November 2016)
27. Nanocellulose: Bio-Inspired Polymers, Aalto University, Espoo, Finland, (August 2016)
28. Bio-Inspired Polymers, Gordon Conference, Green Chemistry, VT (August 2016)
29. 251 ACS National Meeting & Exposition, San Diego, CA (March 2016)
 - Making room during pretreatment
 - Valorizing lignin
30. Biorefining and GlycoScience, Glycobiotechnology, Manchester, (April 2016).
31. Lignin Biorefining, 2015 Metabolic Engineering and Green Manufacturing in Microorganisms, Beijing University Chemical Engineering, China (July 2015)
32. Sustainable Biofuels from Laboratory Bench to the Gas-Tank, GA ACS Section Dinner Meeting (April 2015).
33. Advances in Sustainable Fuels. International Conference on “Sustainable Fuel for IC Engines in Emerging Nations”, New Delhi, India (February 2015).
34. Second-generation biofuels from the benchtop to the gas tank. Nordic Baltic BioEnergy Riga, Latvia (April 2015).
35. Award Address (ACS Award for Affordable Green Chemistry sponsored by Dow Chemical Company and endowed by Rohm and Haas Company). Green chemistry, biofuels, and biorefineries. 247th ACS National Meeting & Exposition, Dallas, TX, (March 2014).
36. Internationell utblick. Ekmandagarna, Stockholm Sweden, (January 2014)
37. Biofuels: From the Field to the Fuel-Tank. USA Embassy, Vilnius, Lithuania (May 2013).
38. Lignocellulosic 2nd and 3rd Generation Biofuels - Using Science to Accelerate Implementation. Natick Soldier Center, MA (March 2013).
39. Using NMR to Characterize Recalcitrance Elements in Biomass at the Molecular Level. Pittcon, Philadelphia, PA (March 2013).
40. Enabling Biopolymers through Green Chemistry, 2012 Intern. Bioenergy Days (October 2012).
41. Sustainable Nano-Materials - What is happening at the cellular level? DOE Workshop on Sustainable Nanomaterials, VA (June 2012).

42. (i) Introduction to Biorefining Session; (ii) Biorefining Expanding the Envelope for Green Forest Products Manufacturing, IPST Members Meeting (April 2012).
43. Organosolv Pretreatments. EBI Workshop on Pretreatment Strategies. University of California Berkeley (March 2012).
44. Green Nanocellulosic Barriers, USDA Nanocellulose Program Review (March 2012).
45. Lignin: The New Paradigm in Biofuels. Phytochemical Society of North America 50th Meeting, HI (December 2011).
46. Biorefineries and Bioconversions: Current and Future Challenges. GA Tech Fall 2011 Transformational Energy Speaker Series.
47. BESC Research and Lessons in Pretreatment Chemistry. Ragauskas, A.J., NSERC Bioconversion Network, University of Toronto, Canada (June 2011).
48. Fiber Modification: Strengthening Softwood Fibres with Hemicelluloses. Ragauskas, A.J., Pira 3rd biennial Fibre Engineering, Barcelona, Spain (May 2011).
49. A Fresh Look at the Biorefinery Concept: What Works and What Doesn't. Ragauskas, A.J., Wood Science and Engineering, Oregon State University (April 2011).
50. Creating Sustainable Chemical Solutions Essential to Converting Lignocellulosic Biomass resources to BioMaterials, BioFuels, BioChemicals and BioPower for People Everywhere. Ragauskas, A.J., Department of Energy, Washington, DC (April 2011).
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52. BESC Research and Lessons in Pretreatment Chemistry. Ragauskas, A.J. Great lakes BioEnergy Research Center, Michigan State University (March 2011).
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55. Recent Advances in Biorefining and Pretreatment Chemistry. Second International Symposium on Bioenergy And Biotechnology, Wahun, China (September 2010).
56. Cellulose Whiskers, Gels, Films and Foams- New Composites and Applications XII IMC and the 7th Isnapol, Gramado, Brazil (September 2010).
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 - Renewable Energy Department, Research Center of Petrobras – CENPES, Rio de Janeiro, Brazil.
 - Shell Research Center, Amsterdam, Netherlands (2010).
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63. Transformational Forest Biorefineries Opportunities and Challenges, KETJU (Sustainable Products and Production Conference, Finnish Academy Science (February 2009).
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65. Forest BioRefinery Accomplishments, Latvian State Institute of Wood Chemistry (June 2009).
66. BioFuels and Biomaterials: Forest BioRefinery, Lithuanian Seimas (Parliament) Committee on Environment Protection (June 2009).
67. Alternative Energy in the US and State-of-the-Art Biological Conversion Technologies to Bioethanol, Lithuanian Confederation of Industrialists, Vilnius, Lithuanian (June 2009).
68. US Forest Biofinery, Lithuanian Energy Institute, Kaunas, Lithuanian (June 2009).
69. Recent Development in US Forest Biorefinery, Kaunas University of Technology, Lithuanian (June 2009).
70. Transformational Forest BioRefinery Technologies, 10th Baltic Economic Forum, Riga, Latvia (June 2009).
71. Recent Developments in US Forest Biorefinery, Novel Products and Fuels from Forest Trees Seminar Series, Umeå Plant Science Centre, Umeå University, Sweden (May 2009).
72. The Biorefinery Concept: Opportunities, Challenges and Innovation, Chalmers University of Technology (May 2009).
73. Securing Biofuels and Bioenergy from the Next Generation of Forest BioRefineries, House of Sweden/Swedish Embassy-Washington DC (May 2009).
74. US Perspective on Biorefinery, Forest Products Industry Research College (FPIRC), Royal Institute of Technology, Stockholm (January 2009).
75. Engineering the Next Generation of LignoCellulosic Fibers, Colloquium Wood Valorisation Epinal, France (January 2009).
76. Forest Biorefineries Opportunities, Challenges and Innovation, Colloquium Wood Valorisation, Epinal, France (January 2009).
77. Characterizing Lignocellulosics from Biomass to Bioethanol, Colloquium Wood Valorisation, Epinal, France (January 2009).
78. Characterizing Lignocellulosics from Biomass to Bioethanol, Booregard, Sarpsborg, Norway (December 2008).
79. Wood Chemistry in the Biorefinery, Booregard, Sarpsborg, Norway (December 2008).
80. Putting Chemistry Back into the Biorefinery, Imperial College London, London (December 2008).
81. Review of Fiber Modification, Eka Chemicals, Sweden (December 2008).
82. Seeing Fibers in a Pulp Forest. Joint SCA, Sodra, Chalmers meeting, Gothenburg, Sweden (October 2008).
83. Energizing the Forest Biorefinery: Pulp-Paper-Fuels, TAPPI SuperCorrExpo conference, Atlanta. GA, (September 2008).
84. Wanted: Technology Breakthroughs, International Bioenergy Days, MN. At request of the US State Department (September 2008).
85. Forest Biorefinery: A Contribution to the One Big Thing Fulbright Chair in Alternative Energy. US- Swedish Science and Technology Review, Swedish Ministry of Education and Research Ministry, Stockholm (September 2008).
86. Forest – Energy: One Big Thing. One Big Thing 2008 Retreat. Embassy of United States of America, Stockholm (September 2008).
87. Forest Biorefineries Bridge to Future: FPRIC Sweden (August 2008).
88. Developing the new lignocellulosic energy age. 235th ACS National Meeting, New Orleans, LA (April 2008).
89. Fiber Modification/Fiber Fiber Bonding, Eka Chemical (June 2008).
90. Advances in Fiber Modification, Aracruz, Brazil (March 2008).

91. US Perspective on Biorefinery, STFI-Packforsk/KTH (January 2008).
92. Forest Biorefinery at the Cross Roads of Science, Engineering and Innovation, Mid Sweden University (January 2008).
93. The BioRefinery: The Next Green Revolution in Science, Engineering and Innovation, Berzeliusdagarna, University of Stockholm (January 2008).
94. The New Lignocellulosic Age, Luleå University of Technology, Skellefteå Sweden (September 2007).
95. Lignocellulose Chemistry: Lonesome BioPolymer to Key BioFuel Resource. School of Polymer, Textile and Fiber Engineering, GT (January 2008).
96. Over View of Cellulosic Material Research. Industry Days IPST@GT (November 2007)
97. Mission Possible: The Search for the New Forest Biorefinery. BioTechnology Institute - University of Minnesota (November 2007).
98. BioEnergy Science Center a DOE BioEnergy Research Center. Bioproducts and Biosystem Engineering at the University of Minnesota (November 2007).
99. Seeing Fibers in the Pulp Forest, Lectures at the Leading Edge, Department of Chemical Engineering and Applied Chemistry, University of Toronto (October 2007).
100. Forest Biorefineries: Pulp-Lumber-Biofuels Third Leg of Forest Products Industry, TAPPI Gulf Coast Conference, Auburn University (October 2007).
101. BioEnergy Science Center: DOE Bioenergy Research Center, IPST@GT (September 2007).
102. The New Lignocellulosic Age, Luleå University of Technology, Skellefteå, Sweden (September 2007).
103. Universidade Beira Interior, Departamento de Ciência e Tecnologia do Papel; Covilhã, Portugal (June 2007).
104. University of Aveiro, Department of Chemistry; Aveiro, Portugal (June 2007).
105. Cacia Soporcel Kraft Pulp Mill, Research Department; Aveiro, Portugal (June 2007).
106. RAIZ - Instituto de Investigacao da Floresta e Papel; Aveiro, Portugal (June 2007).
 - Fiber Modification
 - Cellulose Microfibrills and Nanotechnology
 - Seeing Fibers in a Pulp Forest
 - Bio Fuels, Chemicals, and Materials A Walk on the Green Side of Sustainability
107. Enhancing and Visualizing Fiber-Fiber Crossings. Södra Cell AB, Väröbacka, Sweden (2007).
108. Microfibrills and Nanotechnology, Pulp Paper 2007, Helsinki, Finland (June 2007).
109. Forest Products Biofinery – US Perspective, Norwegian University of Science and Technology NTNU (April 2007).
110. Engineering Fiber Charging and Barriers for Paper and Board, EU COST54 – “Characterization of the Fine Structure and Properties of Papermaking Fibres using New Technologies” Riga, Latvia (April 2007).
111. BioFueling the Future. Challenges - Opportunities^{GT} Georgia Tech Advisory Board (April 2007).
112. Biofuels, Clark Atlanta University (April 2007).
113. Profiling Biomass Resources and Their Chemistries, Huntsman Houston (April 2007).
114. Advanced Lignocellulosic Based Composite Materials, IPST Board of Trustees (April 2007).
115. Biorefining the Future. 233rd ACS National Meeting, Chicago, IL, United States (March 2007).
116. Biofueling the Future. National Academy of Engineering/GA Tech (March 2007).
117. Seeing Fibers in a Pulp Forest, Royal Institute of Technology, Stockholm, Sweden (March 2007).

118. Charging Fibers for New and Enhanced Strength Properties, Pira, Stockholm (March 2007).
119. Biofuels and the Future, VTT Technical Research Centre of Finland (February 2007).
120. Biofuels for the Future, Carlsberg Institute (February 2007).
121. BioFuels: An Agenda for Research and Innovation. GTRC Board of Trustees (December 2006).
122. The Path Forward for Biofuels and Biomaterials. Primer Congreso Latinoamericano sobre Biorefinerías: Oportunidades de innovación para el sector forestal, que se realizará los días Concepción, Chile (November 2006).
123. L’Avenir des Biopolymères Renouvelables, Lorexpo Metz Congress, France (November 2006).
124. Topochemistry of Renewable Biopolymers, University Nancy, Nancy France (November 2006).
125. Food for Thought Seminar Series, Faculty of Agriculture and Environmental Sciences, McGill University (November 2006).
126. Biofuels – Biochemicals Research Needs and Opportunities, Lyondell Symposium (October 2006).
127. The Energy Challenge, GTRI: Seminar on Emerging Research Needs (October 2006).
128. Biomass to Bioproducts, Biofuels and Biopower - B2B3, AtlanTICC Alliance Symposium, Imperial College London (2006).
129. BioFuels Research Opportunities/Needs, World Congress on Industrial Biotechnology and Bioprocessing, Toronto, Canada (2006).
130. The Challenges and Opportunities for Next Generation of Forest Product Biorefineries, World Congress on Industrial Biotechnology and Bioprocessing, Toronto, Canada (2006).
131. Profiling Biomass Resources and Their Chemistries, Shell, Amsterdam, Netherlands (2006).
132. Future of Topochemical Cellulosic Fiber Modification. Metsa-Botnia, Jyväskylä, Finland (2006).
133. Fiber Modification Chemistry, International Paper Cincinnati Technology Center, OH (2006).
134. Biofinery of the Future, Now. Rendez-Vous Atlantic Biotech, Guest of Government of Canada. Moncton, New Brunswick (2006).
135. Chemistry of Fiber Modification, Nalco Chemical Company, IL (2006).
136. Biofuels, College of Science, Georgia Institute of Technology (2006).
137. Topochemistry of Fiber Modification, Hercules, Inc., DE (2006).
138. Profiling Biomass Resources and Their Chemistries, Chevron – Texaco, Richmond, CA (2006).
139. Over the Horizon View of Nano Coatings and Barriers for Paper. Pira's Ultrathin Films and Nanocoatings Conference, Vienna, Austria (2006).
140. Chemicals from Biomass, Alberta Research Council, Canada (2005).
141. Platform Chemicals from Forest Biomass, Alberta Forestry Research Institute, Canada (2005).
142. Nanotechnology in Pulp and Paper, Stora-Enso OYJ, Stockholm (2005).
143. Platform Chemicals from Biomass. The World Congress on Industrial Biotechnology and Bioprocessing, ACS Orlando, FL (2005).
144. Fiber Modification, Weyerhaeuser Company (2005).
145. A Few Good Fibers. Pre-Symposium on Wood, Forestry, and Pulping Chemistry, Auckland, New Zealand (2005).
146. Nanotechnology Innovation Directed to Forest Products Industry. Forest Products Technobusiness Forum (2005).
147. The USA Forest Industry Nanotechnology Roadmap. Nano Harju Goes Global, Lohja, Finland (2005).
148. Nanotechnology Address from the USA. Jaakko Pöyry Consulting, Helsinki, Finland (2005)

149. Fiber Modification Chemistry. Metsa-Botnia, Helsinki, Finland (2005).
150. Cellulosic Fiber Chemistry. Hercules Company, USA (2005).
151. BioPower – BioMaterials Research, School of Chemistry, Imperial College London (2005).
Platform Chemicals from Biomass, Alberta Research Council, Canada (2005).
152. NanoBioterials, Nanotechnology Forest Products Workshop, Washington, DC (2004).
153. Nanotechnology in the Pulp and Paper Industry, Lake States TAPPI/NC PIMA Conf. (2004).
154. Fiber Modification Chemistry. Taiwan Forestry Research Institute (2004).
155. Nanotechnology for Pulp and Paper. IPST/CPBIS Forest Products Techno-Business Forum, (2004).
156. Innovative Fiber Modification Chemistry: Asian Institute of Technology, Department Pulp and Paper Technology, Kasetsart University, Faculty of Forestry, Thailand (2004).
157. Biobleaching Chemistry of Laccase. Department Chemistry, Mahidol University, Thailand (2004).
158. Nascent Nanotechnology in Pulp and Paper and Its Future. PIRA, Stockholm (2004).
159. Forest Products Biotechnology: Before and After. The World Congress on Industrial Biotechnology and Bioprocessing. ACS Orlando, FL (2004).
160. Fundamentals of Oxidative Laccase Chemistry, Departamento de Ciência e Tecnologia do Papel, Universidade Beira Interior, Covilhã, Portugal (2003).
161. Invited speaker at NSF, AAAS sponsored EMERGE Conference: Strengthening and Fostering Productive Partnerships-The Corporate Academic Role. Seminar titled “Fostering Academic-Industry Relationships”, Atlanta (2003).
162. Nanotechnology – Changing the Challenge in Pulp and Paper Research, presented at Nano All Around Us Conference, The University of Wisconsin's Inaugural Technical Conference and Public Expo on Nanotechnology (2003).
163. Future of Lignin Research, International Lignin Institute 6th Forum, Wageningen, Netherlands (2003).
164. Invited speaker at 2003 Gordon Conference Polysaccharide Chemistry, Redefining the Pulp and Paper Industry with New Chemo-Enzymatic Technologies. Ragauskas, A.J., Gordon Conference, Italy (2003).
165. Nano-Biotechnology Changing the Challenge in Pulp & Paper Research, TAPPI Fall Technical Conference: Engineering, Pulping & PCE&I, Oct., Chicago, IL (2003).
166. Back to The Future: How Current Pulp-Bleaching Research Will Influence Future Furnish Resources. 7th Pira Recycling Technology Conference, Brussels (2002).
167. Advances in Fiber Modification, Taiwan Forestry Research Institute, Taiwan (2002).
168. Chemoenzymatic Fiber Modification, Asian Institute of Technology and Department of Forest Products, Kasetsart University, Thailand (2002).
169. Decade of Pulp and Paper Research, Kaunas University of Technology, Lithuania (2002).
170. Biotechnology in the Pulp and Paper Industry: A Challenge for Change. Ragauskas, A.J., 8th International Conf. on Biotechnology in the Pulp and Paper Industry, Helsinki, Finland (2001).
171. Pulp/Bleach Mill of the Future. Innovase hosted Mini-Symposium, San Diego, CA (2001).
172. The Challenge of Change. Ferris, J.; Ragauskas, A.J., TAPPI Pulping Conference, Boston, MA (2000).
173. Advances in Fiber Modification Topo-Chemistry present at:
 - Oji Technical Research Center, Nippon Paper Company, Japan
 - Cheng Loong Corp., Taiwan; Advanced Agro, Thailand; April, Singapore;

- Riaupaper, Indonesia; Yuen Foong Yu Paper Mfg. Co. Ltd., Taiwan; Siam Pulp and Paper Public Company Ltd., Thailand (2000).
174. Developing New Pulp Fibers. Kimberly-Clark Corporation, Neenah, WI (2000).
 175. Topofiber Chemistry. Argonne National Laboratory (2000).
 176. Fundamentals of Laccase Mediator System Delignification. Hercules Incorporated, Wilmington, DE (2000).
 177. Laccase Biobleaching Technologies. International Paper, Tuxedo Park, NY (2000).
 178. Fundamentals of Pulping and Bleaching. Westvaco Corporation, Charleston Research Center (1998).
 179. Fundamentals of Biobleaching. STFI, Stockholm, Sweden (1998).
 180. Fundamental Chemistry of Kraft Pulping. Ahlstrom Corporation, Finland (1998).
 181. Applications of NMR in Modern Pulping and Bleaching Research, Argonne National Laboratories (1998).
 182. Fundamental Structural Analysis of Residual Lignin in Kraft Pulp. Ahlstrom Corporation, Glens Falls, NY (1997).
 183. Peroxide Pulp Bleaching Challenges. Florida Catalysis Conference, Palm Coast, FL (1996).
 184. Fundamentals of Brightness Reversion. Nalco Chemical Company, Naperville, IL (1996).
 185. Fundamentals of Brightness Reversion. South China University of Technology, Guangzhou, China (1996).
 186. Activated Peroxide Bleaching Chemistry. South China University of Technology, Guangzhou, China (1996).
 187. Photostabilization for High-Yield Pulps. Kimberly-Clark Corporation, Neenah, WI (1996).
 188. Chemical Activation of Peroxide. 1995 TAPPI/NC State Emerging Pulping and Bleaching Workshop (1995).

INVITED ON-SITE INDUSTRY RESEARCH PRESENTATIONS

AbitibiBowater; Advanced Agro/Thailand; Ahlstrom Corporation/Finland; Appleton Papers; April/Singapore; Aracruz/Brazil; Arauco/Chile; Booregard/Norway; Buckeye Technologies Inc; Cheng Loong Corp./Taiwan; Chevron; Ciba Corporation; Consolidated Papers Incorporated; Eka-Chemical; Georgia Pacific; Hercules Incorporated; Hiroshima R&D Center/Japan; Imerys, Innovase Corporation; International Paper; Champion International Corporation; DuPont, Kimberly-Clark Corporation; Korsnas AB/Sweden; LTD/Japan; MeadWestvaco; Mondi; Nalco Chemical Company; Novo-Nordisk; Mitsubishi Heavy Industries; NewPage Corp.; Nippon Paper Company/Japan; Oy Metsä-Botnia Ab/Finland; Oji Paper Co./Japan; Portucel Soporcel Group/Portugal; Potlatch Corporation; Rayonier Inc.; Riaupaper/Indonesia; SAPPi; Shell/Netherlands; SCA/Sweden; Schweitzer-Mauduit International; Siam Pulp and Paper Public Company Ltd./Thailand; Sotra/Sweden; Stora-Enso/Finland; UPM-Kymmene Group/Finland; Weyerhaeuser Company; Yuen Foong Yu Paper Mfg. Co. Ltd./Taiwan; Fibria/Brazil.

CONTRIBUTED PARTICIPATIONS

1. AIChE 6th International Conference on Plant Synthetic Biology, Bioengineering and Biotechnology. Feedstock Design for Quality Biomaterial. Cheng Hu, Arthur Ragauskas, Susie Dai and Joshua Yuan (December 2022).
2. AIChE Annual Meeting (November 2022)

- Improve Infrastructure Resilience Toward Climate Changes through Plastics Waste Upcycling. Kainan Chen, Fujie Zhou, Yunqiao Pu, Jinghao Li, Arthur Ragauskas, Joshua Yuan
 - 3D Printing of a Recycled Terephthalic Acid-Based Copolyester Containing Tetramethylcyclobutanediol. Samarthya Bhagia; Surbhi Kore; Sanjita Wasti; Jaroslav Đurković; Ján Kováč; Xianhui Zhao; Uday Vaidya; Soydan Ozcan; Arthur J. Ragauskas.
3. ACS Meetings & Expositions - American Chemical Society (March 2022)
- 3D printing of polymer composites with lignin-assisted-exfoliated boron nitride (BN) for enhanced thermal conductivity. Zhang, Shuyang; Bhagia, Samarthya; Wang, Hsin; Meng, Xianzhi; Ragauskas, Arthur Jonas
 - Catalyzing biomass solvolysis: Challenges and opportunities. Ragauskas, Arthur Jonas; Wang, Yun-Yan; Hao, Naijia; Alper, Koray; Meng, Xianzhi; Tekin, Kubilay; Karagoz, Selhan.
4. AIChE Annual Meeting (November 2021)
- Developing a Multi-Target Alkali Sterilization Strategy to Facilitate Lignin Dispersion and Promote Biological Lignin Valorization. Zhi-Min Zhao, Shuyang Zhang; Xianzhi Meng; Yunqiao Pu; Arthur J. Ragauskas
 - Demethylated Lignin As the Interface Enhancer in FDM 3D Printing for PA12 Composites. Shuyang Zhang; Xianzhi Meng; Arthur J. Ragauskas
 - Lignin-Based Deep Eutectic Solvent Pretreatment of Transgenic Sweet Sorghum Bagasse to Achieve a Sustainable Biorefinery Process. Yunxuan Wang, Xianzhi Meng; Yang Tian; Linjing Jia; Aymerick Eudes; Kwang Ho Kim; Yunqiao Pu; Gyu Leem; Deepak Kumar; Arthur J. Ragauskas; Chang Geun Yoo
 - High Speed Friction Grinding of Thermoplastics Assisted By Food Gums. Samarthya Bhagia; Nidia C. Gallego; Nitilaksh Hiremath; David Harper; Richard A. Lowden; Richard R. Lowden; Yunqiao Pu; Uday Vaidya; Soydan Ozcan; Arthur J. Ragauskas
 - Synthesis of Charged Lignin Nanoparticles and Its Applications As Adsorbent. Mandeep Poonia; Kwang Ho Kim; Xianzhi Meng; Udani Kaushalya Wijethunga; Arthur J. Ragauskas; Gyu Leem; Chang Geun Yoo
5. 2022 Genomic Sciences Program (GSP) Annual PI Meeting (February 2022)
- Noncellulosic biopolymer morphology and structural changes during real-time reaction studies. Zhi Yang; Marcus Foston; Hugh O'Neill; Volker S. Urban; Arthur Ragauskas; Barbara Evans; Sai Venkatesh Pingali; Brian H. Davison.
 - Solid state NMR characterization of lipid membrane and organic solvent induced effects
 - Yunqiao Pu; Haden Scott; James G. Elkins; John Katsaras; Jonathan Nickels; Arthur J. Ragauskas; Brian H. Davison
 - Effect of Cyrene Pretreatment on Switchgrass Lignin Structure. Yun-Yan Wang; Luna Liang; Xianzhi Meng; Yunqiao Pu; Nicholas Dean Smith; Arthur Ragauskas; Brian H. Davison
 - Candidate Genes for Lignin Structure Identified Through Genome Wide Association of Naturally Variant Populus. Nathan Bryant; Jin Zhang; Kai Feng; Jin-Gui Chen; Wellington Muchero; Chang Geun Yoo; Timothy J. Tschaplinski; Yunqiao Pu; Arthur J. Ragauskas; Gerald A. Tuskan
6. ACS Meetings & Expositions - American Chemical Society (April 2021)

- Green and scalable fabrication of lignite-based aerogel with enhanced adsorption properties for multiple purposes. Shuyang Zhang, Luna Liang, Xianzhi Meng, Muhammad Zia ur Rehman, Arthur Ragauskas
 - 3D printing of poplar wood filled PLA materials. Samarthya Bhagia, Richard Lowden Donald Erdman, Miguel Rodriguez, Bethany Haga, Ines Roxana Mena Solano, Nidia Gallego, Yunqiao Pu, Wellington Muchero, Vlastimil Kunc, Arthur Ragauskas
 - Enhancement of biomass-derived 3D printing resins by chemical modification. Anqi Ji,, Samarthya Bhagia, Kwang Ho Kim, Arthur Ragauskas, Gyu Leem, Chang Geun Yoo
 - Elucidating the structure and variability of lignin and the underlying genetic factors in a diverse switchgrass population. Nathan Bryant, Hari Chhetri, Yunqiao Pu, Thomas Pendegast, Katrien Devos, David Kainer, Daniel A. Jacobson, Arthur Ragauskas
 - Deuterium labelled plants enable deconvolution of plant cell wall biopolymer component structures using neutron scattering. Zhi Yang, Samarthya Bhagia, Barbara Evans, Hugh O'Neill, Arthur Ragauskas, Brian Davison, Sai Venkatesh Pingali
7. All Atom Simulations of Lignin Melts and Lignin Organic Cosolvent Complexes in the Secondary Cell Wall of Plants for Biofuel Production. Vaidyanathan Sethuraman; Vermaas, Josh; Liang, Luna; Ragauskas, Arthur; Smith, Jeremy, C.; Petridis, Loukas. APS (March 2021)
 8. Comparative Study of Transgenic Switchgrass Organosolv Lignin Extracted By Ethanol, Tetrahydrofuran, and gamma Valerolactone Pretreatments. Liang, Luna Liang; Wang, Yun Yan; Yang, Zhi Yang; Bhagia, Samarthya Bhagia; Meng, Xianzhi, Bryant, Nathan; Pingali, Sai Venkatesh Pingali; Pu, Yunqiao; O'Neill, Hugh, M. Ragauskas Arthur. Food Energy Water Nexus, AIChE (February 2021)
 9. 2021 Genomic Sciences Program (GSP) Annual Principal Investigator (PI) Meeting, Washington D.C. (February 2020)
 - Visualization of plant cell wall polymers using neutron scattering and deuterium labelling in planta. Pingali, Sai Venkatesh; Zhi Yang, Zhi; Bhagia Samarthya; Evans, Barbara; O'Neill, Hugh; Ragauskas, Arthur. J.; Davison, Brian, H.
 - Chemical and Morphological Structure of Solubilized Lignin Extracted via Ethanol, Tetrahydrofuran, and γ Valerolactone Pretreatments from Wild Type and Transgenic Switchgrass. Liang, Luna; Wang, Yun Yan; Bhagia, Samarthya; Yang, Zhi; Meng, Xianzhi; Pingali, Sai; Bryant, Nathan; Vaidya, Sethuraman, Mathamangalath; Petridis, Loukas; Pu, Yunqiao; Evans, Barbara; O'Neill, Hugh, M.; Ragauskas, Arthur; Davison, Brian, H.
 10. 2020 Genomic Sciences Program (GSP) Annual Principal Investigator (PI) Meeting, Washington D.C. (February 2020)
 - Pectin – lignin interactions in plant cell walls and model composites. Shah, R.; O'Neill, H.; Pu, Y.; Biswal, A.; Pingali, S.V; Ragauskas, A.J.; Mohnen, D.; Davison, B.H.
 - Polymer and structural science behind valorizing lignin using solvents, Berg, M.C.; Vural, D.; Bhagia, S.; Liang, L.; Yang, Z.; Meng, X.; Gallego, N.; Bryant, N.; Pingali, S.V.; O'Neill, H.M.; Pu, Y.; Mamontov, E.; Ragauskas, A.J.; Smith, J.C.; Petridis, L.; Davison, B.H.
 11. 259th ACS National Meeting & Exposition, Philadelphia, PA, (March 2020)

- Methods of processing of thermoplastics and lignocellulosic biomass for 3D printing Bhagia, S.; Ragauskas, A.J.
 - Chemical modification of biomass for bio-based 3D printing, Ji, A.; Bhagia, S.; Zhao, J.; Kim, K.H.; Ragauskas, A.J.; Yoo, C.G.
 - Application of lignin-derived deep eutectic solvents for biomass conversion. Wang, Y.; Meng, X.; Jeong, K.; Li, S.; Leem, G.; Kim, K. Ho; Ragauskas, A.J.; Yoo, C.G.
 - Solvent screening for the fractionation and application of CELF lignin. Meng, X.; Scheidemantle, B.; Wang, Y.Y.; Wyman, C.; Pu, Y.; Cai, C.; Ragauskas, A.J.
 - Oxidative transformation of lignin using peracetic acid for value-added chemical production. Zhuang, J.; Kim, K.H.; Wang, R.; Leem, G.; Pu, Y.; Li, Y.; Ragauskas, A.J.; Yoo, C.G.
 - Switchgrass lignin and hemicellulose structural reorganization observed in situ during dilute acid pretreatment. Pingali, S.V.; Yang, Z.; Foston, M.; O'Neill, H.M.; Urban, V.; Ragauskas, A.J.; Evans, B.; Davison, B.H.
 - Tunable molecular features of CELF lignin and CELF lignin-based polyurethanes. Wang, Y.Y.; Sengupta, P.; Cai, C.; Wyman, C.; Pu, Y.; Ragauskas, A.J.
12. 2019 AIChE Annual Meeting, Orlando, FL (November 2018)
- Enhancement of Polyhydroxyalkanoate Production By Co-Feeding Lignin Derivatives with Glycerol in *Pseudomonas Putida* KT2440. Xu, Z.; Li, X.; Hao, N.; Ragauskas, A.J.; Yang, B.
 - Codesign of Combinatorial Organosolv Pretreatment (COP) and Lignin Nanoparticles (LNPs) in Biorefineries. Liu, Z.-H.; Ragauskas, A.J.
 - Preparation of Nanofibrillated Biomass (NFB) for Thin Films and Composites. Bhagia, S.; Dunlap, J.; Lowden, R.; Muchero, W.; Pu, Y.; Ragauskas, A.J.
 - Elucidating Lignin Structure and Relationships from Naturally Variant *Populus Trichocarpa*. Bryant, N.; Zhang, J.; Muchero, W.; Pu, Y.; Ragauskas, A.J.
 - Conversion of Sugarcane Bagasse to Bioenergy over a Metal Oxide Catalyst. Hao, N.; Ragauskas, A.J.
 - A Closed-Loop Biorefinery for Woody Biomass Conversion Using Lignin-Derived Deep Eutectic Solvents. Wang, Y.; Meng, X.; Pu, Y.; Kim, K.H.; Ragauskas, A.J. Yoo, C.G.
13. Nanocellulosics from Packing Barriers to Bone Templates. 4th International Symposium on Materials from Renewables, University of Georgia, GA (October 2019)
14. 258th ACS National Meeting & Exposition, San Diego, CA, United States, August (2019)
- In-depth study on the effect of oxygen-containing functional groups in pyrolysis oil by P-31 NMR. Wu, Z; Ben, H.; Han, G.; Jiang, W.; Ragauskas, A.J.
 - Improved dispersion and interfacial bonding between nanocellulose and poly(lactic acid) using solvent infiltration and ball milling methods. Li, M.; Pu, Y.; Deng, Y.; Nelson, K.; Ragauskas, A.J.
 - Polyurethanes from unmodified technical lignin fractionated by sequential precipitation. Wang, Y.Y.; Sengupta, P.; Pu, Y.; Wyman, C.E.; Cai, C.M.; Ragauskas, A.J.
15. Symposium on Biotechnology for Fuels and Chemicals. Seattle, WA (April 2019).
- Structural insights into low and high recalcitrant natural poplars with neutron and X-ray scattering. Shah, R.; Bhagia, S.; Pingali, S.V.; Ragauskas, A.; Davison, B.; O'Neill, H.
 - Real-time visualization of biomass deconstruction during co-solvent reactions. Pingali, S.V.; O'Neill, H.; Petridis, L.; Cai, C.; Volker, U.; Wyman, C.; Ragauskas, A.; Smith, J.; Davison, B.

- Innovative Pretreatment and Fractionation to Transform Biorefinery Design for Lignin-based Products. Liu, Z.; Ragauskas, A.J. Yuan, J.S.
 - System analysis on lignin degradation mechanisms and metabolic pathways in marine protist, *Thraustochytrium striatum*. Li, X.; Li, M.; Pu, Y.; Ragauskas, A.; Blennerm, M.; Yuan, J.S.; Zheng, Y.
 - Co-feeding Lignin Derivatives with Glycerol for Polyhydroxyalkanoate Production by *Pseudomonas putida* KT2440. Xu, Z.; Li, X.; Pan, C.; Hao, N.; Pu, Y.; Ragauskas, A.; Yang, B.
 - Co-solvent enhanced lignocellulosic fractionation to enable co-production of bioethanol and lignin-based polyurethanes from poplar wood. Sengupta, P.; Wang, Y.Y.; Shrestha, U.; Dadmum, M.; Ragauskas, A.; Wyman, C.E.; Cai, C.
 - Lignin First Solvent Pretreatments and Their Influences on Biomass Structural Characteristics. Meng, X.; Bhagia, S.; Wang, Y.; Zhou, Y.; Pu, Y.; Shuai, L.; Ragauskas, A.; Yoo, C.G.
 - SANS study of structures and deuterium incorporation into vegetative leaf stalks of deuterated Kale (*Brassica oleracea*). Yang, Z.; Bhagia, S.; Pingali, S.F.; O'Neill, H.; Evans, B.; Davison, B.; Ragauskas, A.
16. 257th ACS National Meeting & Exposition, Orlando, FL, United States, (March 31-April 4, 2019)
- Elucidating lignin structure and relationships from naturally variant *Populus trichocarpa*. Bryant, N.; Ragauskas, A.J.
 - One-pot transformation of lignocellulosic biomass into crude bio-oil with metal chloride catalyst via hydrothermal and supercritical ethanol processing. Hao, N.; Ragauskas, A.; Alper, K.; Karagoz, S.; Tekin, K.
 - Hemicellulose-cellulose composites reveal differences in cellulose organization after dilute acid pretreatment. O'Neill, H.M.; Shah, R.; Huang, S.; Pingali, S.V.; Sawada, D.; Pu, Y.; Ragauskas, A.; Kim, S.H.; Evans, B.R.; Davison, B.H.
 - Characterization and synthesis of next generation of lignin-based polyurethanes. Meng, X.; Singh, P.; Wyman, C.; Cai, C.; Ragauskas, A.
 - Structural insights into low and high recalcitrant natural poplar with neutron and X-ray scattering. Shah, R.; Pingali, S.V.; Bhagia, S.; Ragauskas, A.J.; Davison, B.H.; O'Neill, H.M.
 - Towards valorization of biorefinery waste to polyhydroxyalkanoate: Structural characterization and mechanisms. Hao, N.; Liu, Z.-H.; Shinde, S.; Yuan, J.; Ragauskas, A.
17. Genome Science Program Contractor-Grantee Workshops, Washington (February 2019):
- Dynamics of the Lignin Glass Transition. Petridis, L.; Vural, D.; O'Neill, H.M.; Pu, Y.; Pingali, S.V.; Ragauskas, A.J.; Smith, J.C.; Davison, B.H.
 - Structural Characterization of Poplar Variants Provides New Insights into Plant Cell Wall Recalcitrance. Shah, R.; Bhagia, S.; Pingali, S.V.; Ragauskas, A.; Đurkovič, J.; Lagaña, R.; Kardošová, M.; Muchero, W.; Chen, J.; O'Neil, H.; Davison, B.H.
18. 2018 AIChE Annual Meeting (October 2018)
- Towards Valorization of Biorefinery Waste to Polyhydroxyalkanoate: Structural Characterization and Mechanisms. Hao, N.; Shinde, S.; Liu, Z.; Yuan, J.; Ragauskas, A.J.

- Characterization of Deep Eutectic Solvent Extracted Lignin Streams from Endocarp Biomass. Li, W.; Amos, K.; Li, M.; Pu, Y.; Ragauskas, A.J.; Debolt, S.; Cheng, Y.T.; Shi, J. Effect of
 - Pretreatment Conditions on the Structure of CELF Lignin. Wang, Y.Y.; Sengupta, P.; Wyman, C.E.; Cai, C.M.; Ragauskas, A.J.
 - Innovative Design to Transform Waste Valorization through Co-Processing of Lignin and Residual
 - Saccharides (CLARS) in an Integrated Biorefinery. .H.; Ragauskas, A.J.; Yuan, J.
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Oral Presentation:
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 - Surface characterization of transgenic poplar by TOF-SIMS. Ragauskas, A.; Ma, T.; Jung, S.; Bali, G.; Kalluri, Y.C.; Tuskan, G.
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Poster Presentation:

- Fungal Cellulase Activity is Affected More by Oxidation of Other Groups than Cellulose Reducing Ends - a Case of Enhanced Cellulose Recalcitrance without Change in Accessibility, Chain Length, or Crystallinity. Kumar, R.; Mittal, A.; Yarbrough, J.; Jung, S.; Himmel, M.; Ragauskas, A.; Wyman, C.E.
 - Characterization of GXMT1 reveals a new family of Co²⁺-dependent enzymes that catalyze the methylation of glucuronoxylan. Urbanowicz, B.; Pena, M.J.; Backe, J.; O'Neill, M.A.; Steet, H.F.; Avci, U.; Li, H.; Wyman, C.; Foston, M.; Ragauskas, A.; York, W.S.
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45. Pretreatment chemistry: What to expect and need. Ragauskas, A., 245th ACS National Meeting & Exposition, New Orleans, LA, United States, (April 2013).
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- Investigation of the Fate of Lignin Structures of Poplar and Switchgrass during Various Pretreatments to Understand Its Impact to Biomass Recalcitrance by Pu, Y.; Cao, S.; Samuel, R.; Jaing, N.; Foston, M.; Studer, M.; Wyman, C.; Ragauskas, A.J.; Gilna, P.
 - Redesigning Lignocellulosic Feedstocks: Genetic Modification of COMT in Switchgrass Significantly Reduces Recalcitrance and Improves Ethanol Production by Fu, C.; Mielenz, J.R.; Xiao, X.; Ge, Y.; Choo Y.; Miguel Rodriguez Jr., H.; Chen, F.; Foston, M.; Ragauskas, A.J.; Bouton, J.; Dixon, R.A.; Wang, Z-Y.; Gilna, P.
68. Lignin-based Rigid Polyurethane Foam Filled with Cellulose Whiskers. Ragauskas, A.J.; Li, Y. 241st ACS National Meeting & Exposition, Anaheim, CA (2011).
 69. Cellulose Nanowhiskers as a Drug Delivery System. Dash, R.; Ragauskas, A.J. 241st ACS National Meeting & Exposition, Anaheim, CA (2011).
 70. Cellulose Nanowhiskers Hydrolyzed from Oxygen/Organosolv Agricultural Cellulose. Witayakran, S.; Anapanurak, W.; Kongtud, W.; Yoksan, R.; Ragauskas, A.J. 241st ACS National Meeting & Exposition, Anaheim, CA (2011).
 71. Comparison of Laboratory Delignification Methods, Their Selectivity, and Impacts on Physiochemical Characteristics of Cellulosic Biomass. Kumar, R.; Hubbell, C.A.; Ragauskas, A.; Wyman, C.E. 241st AIChE Annual Meeting, ACS National Meeting & Exposition, Anaheim, CA (2011).
 72. Refining BioRefining. Ragauskas, A.J. 2011 TAPPI International Bioenergy & Bioproducts Conference, Atlanta (2011).
 73. Catalytic Pyrolysis of Lignin for Bio-oils. Ben, H.; Ragauskas, A.J. 2011 TAPPI International Bioenergy & Bioproducts Conference, Atlanta (2011).
 74. Towards an Improved Understanding of the Effects of Dilute Acid Pretreatment on Poplar Lignin. Ragauskas, A.J.; Cao, S.; Pu, Y.; Studer, M., Wyman, C. TAPPI PEERS Conf. (2010).
 75. Chemical Transformations of Poplar Lignin During Dilute Acid Pretreatment. Cao, S.; Studer, M.; Wyman, C. E.; Ragauskas, A., AIChE National Meeting, Salt Lake City, UT (2010)
 76. Structural Modifications of Cellulose and Lignin in Loblolly Pine Arising from the Ethanol Organosolv Pretreatment. Sannigrahi, P.; Ragauskas, A.J.; Miller, S.J. TAPPI PEERS Conf. (2010).
 77. Chemical Modification of Cellulose Nanowhiskers through Periodate Oxidation. Ragauskas, A.J.; Dash, R.; Elder, T. Georgia Life Science Summit 2010, Atlanta, GA (2010).
 78. Chemical Image of Poplar Stem using Imaging Mass Spectrometry: ToF-SIMS and MALDI-MS. Jung, S.; Chen, Y.; Sullards, M. C.; Ragauskas, A. J. Georgia Life Science Summit 2010, Atlanta, GA (2010).
 79. Novel Polyurethane Nanocomposite Foam Reinforced with Cellulose Whiskers. Li, Y.; Ren, H.; Ragauskas, A.J. Georgia Life Sciences Summit 2010, Atlanta, GA (2010).
 80. Pyrolysis of Kraft Lignin at Different Temperature. Ben, H.; Ragauskas, A. J. Georgia Life Sciences Summit 2010, Atlanta, GA (2010).
 81. Advances in the use of NMR to Characterize Biomass in an Effort to Elucidate the Nature of Recalcitrance. AIChE National Meeting, Salt Lake City, UT (2010).
 82. Chemical Characterization of Poplar after Hot Water Pretreatment. Pu, Y.; Cao, S.; Studer, M.; Wyman, C.; Ragauskas, A.J., 32nd Symposium on Biotechnology for Fuels and Chemicals, Clearwater, FL (2010).
 83. Imaging Matrix-assisted Laser Desorption/ionization Mass Spectrometry (MALDI-MS) of Poplar Stem. Jung, S.; Chen, Y.; Sullards, C.; Ragauskas, A.J. 32nd Symposium on Biotechnology for Fuels and Chemicals, Clearwater, FL (2010).

84. Toward Understanding Fundamentals of Enzymatic Hydrolysis of Cellulose through a Restart Approach. Yang, B.; Pu, Y.; Ragauskas, A.J.; Shi, J.; Wyman, C. 32nd Symposium on Biotechnology for Fuels and Chemicals, Clearwater, FL (2010).
85. Investigating the Anatomical Features of Ethanol Organosolv Pretreated *Buddleja Davidii*. Hallac, B.; Ray, M.; Murphy, R.; Ragauskas, A.J. 32nd Symposium on Biotechnology for Fuels and Chemicals, Clearwater, FL (2010).
86. Recalcitrance: Will the Real Lignin Stand Up? Sannigrahi, P.; Kim, D.H.; David, K.; Ragauskas, A.J. 32nd Symposium on Biotechnology for Fuels and Chemicals, Clearwater, FL (2010).
87. A Perspective on Pretreatment Chemistry: What We Know and Need to Know. Ragauskas, A.J.; Pu, Y.; Jung, S. Foston, M.; Sannigrahi, S.; Ziebell, A.; Davis, M.; Chen, F.; Dixon, R.A.; Davison, B.H.; Studer, M.; Wymann, C. E. 32nd Symposium on Biotechnology for Fuels and Chemicals, Clearwater, FL (2010).
88. Biomass Characterization of Alamo Switchgrass. Hu, Z.; Ragauskas, A.J. 32nd Symposium on Biotechnology for Fuels and Chemicals, Clearwater, FL (2010).
89. Copper-catalyzed Dehydration of Aldoximes into Nitriles at Room Temperature. Jiang, N.; Ragauskas, A.J. 239th ACS National Meeting, San Francisco, CA (2010).
90. Direct Dissolution and NMR Analysis of the Plant Cell Walls via Perdeuterated Pyridinium-based Ionic Liquid. Jiang, N.; Pu, Y.; Ragauskas, A.J.; Samuel, R. 239th ACS National Meeting, San Francisco, CA (2010).
91. All About Biorefining. Ragauskas, A.J. 239th ACS National Meeting, San Francisco, CA (2010).
92. ToF-SIMS Characterization of Chemical Differences on the Surface of *Populus Deltoid* between Different Treatments and Growth Stages. Jung, Seokwon; Sullards, M. Cameron; Ragauskas, A.J. 239th ACS National Meeting, San Francisco, CA (2010).
93. Solid-state NMR Analysis of Changes in the Supramolecular and Ultrastructure of the Cellulose Fiber Wall in Poplar during Dilute Acid Pretreatment. Foston, M.B.; Ragauskas, A.J. 239th ACS National Meeting, San Francisco, CA (2010).
94. Synthesis of Novel Cellulosics through Periodate Oxidation. Rajalaxmi, D.; Ragauskas, A.J. 239th ACS National Meeting, San Francisco, CA (2010).
95. Rigid Polyurethane Foam Reinforced with Cellulose Nano Whiskers. Li, Y.; Ren, H.; Ragauskas, A.J. 239th ACS National Meeting, San Francisco, CA (2010).
96. Study Cellulase-cellulose Interaction using FRET. Wang, L.; Ragauskas, A.J.; Wang, Yi. 239th ACS National Meeting, San Francisco, CA (2010).
97. Biomass Characterization of Switchgrass for Biofuel Production. Hu, Z.; Pu, Y.; Ragauskas, A.J. 239th ACS National Meeting, San Francisco, CA (2010).
98. Ethanol Organosolv Lignin: More than Just Boiler Fuel. Sannigrahi, P.; Ragauskas, A.J.; Miller, S.J. 239th ACS National Meeting, San Francisco, CA (2010).
99. Tango for Two: Biomass Recalcitrance - Enzymatic Deconstruction. Ragauskas, A.J. 239th ACS National Meeting, San Francisco, CA (2010).
100. Chemical Characterization of Poplar during Dilute Acid Pretreatment. Pu, Y.; Studer, M.; Ragauskas, A.J. 239th ACS National Meeting, San Francisco, CA (2009).
101. Towards An Improved Understanding of the Effects of Ethanol Organosolv Pretreatment On *Buddleja Davidii*. Hallac, B.; Sannigrahi, P.; Pu, Y.; Ray, M.; Murphy, R.; Ragauskas, A.J. AIChE National Meeting, Salt Lake City, UT (2010).

102. Investigating the Effects of Ethanol Organosolv Pretreatment on *Buddleja Davidii*. Hallac, B.; Sannigrahi, P.; Ray, M.; Murphy, R.; Ragauskas, A.J. AIChE National Meeting, Salt Lake City, UT (2009).
103. Investing in Biorefining Today for Tomorrow's Opportunities. Ragauskas, A.J. Biorefining for the Pulp and Paper Industry, Pira, Stockholm (2009).
104. Effects of Two-stage Dilute Acid Pretreatment on the Structure and Composition of Lignin and Cellulose in Loblolly. Sannigrahi, P.; Ragauskas, A.J.; Miller, S.J., 31st symposium on Biotechnology for Fuels and Chemicals, San Francisco, CA (2009).
105. Elucidation of Alfalfa Lignin Structures on Gene Down-regulation. Pu, Y.; Chen, F.; Dixon, R.; Davis, M.; Davison, B.; Ragauskas, A.J., 31st Symposium on Biotechnology for Fuels and Chemicals, San Francisco, CA (2009).
106. Biomass Characterization and Organosolv Pretreatment of *Buddleja Davidii*. Hallac, B.; Sannigrahi, P.; Pu, Y.; Ray, M.; Murphy, R.; Ragauskas, A.J., 237th ACS National Meeting, Salt Lake City, UT (2009).
107. New Energy: Fuel Resources from Kraft Pulping. Nagy, M.; Kosa, M.; Ragauskas, A.J.; Theliander, H., 237th ACS National Meeting, Salt Lake City, UT (2009).
108. Biomass Characterization of *Buddleja Davidii*: A Potential Feedstock for Biofuel Production. Hallac, B.; Sannigrahi, P.; Pu, Y.; Ray, M.; Murphy, R.; Ragauskas, A.J., 60th Southeastern Regional Meeting American Chemical Society, Nashville, TN (2008).
109. Production of Ethanol from Forest Residues. Iisa, K.; Ragauskas, A.; Frederick, Jr., W. J.; Knutson, K., 100 AIChE, Philadelphia (2008).
110. Unleashing Organosolv Lignin for Biofuels. Nagy, M; Britovsek, G.J. P.; Ragauskas, A. J., 236th ACS National Meeting, PA (2008).
111. Developing the New Lignocellulosic Energy Age. Ragauskas, A.J., 235th ACS National Meeting, New Orleans, LA (2008).
112. Modification of Linerboard Softwood Kraft Pulp with Laccase and Amino Acids. Witayakran, S.; Ragauskas, A.J., 235th ACS National Meeting, New Orleans, LA (2008).
113. Tying Cellulose Whiskers Together. Goetz, L.A.; Ragauskas, A.J.; Mathew, A.; Oksman, K., 235th ACS National Meeting, New Orleans, LA (2008).
114. Structural Characteristics and In Vitro Fermentation of Various Dietary Fibers by Pig Fecal Bacteria. Pu, Y.; Ziemer, C.; Ragauskas, A.J., 235th ACS National Meeting, New Orleans, LA (2008).
115. Cost Effective High Value-Added Chemical Extraction from Lignin with Gas Expanded Liquids. Draucker, L. C., Hallett, J. P.; Kitchens, C. L.; Bush, D., AIChE, San Francisco, CA (2006)
116. Path Forward for NanoBiomaterials Derived from Lignocellulosics. Ragauskas, A.J.; Rials, T.G.; Ashurst, R.W.; Cullinan, H.T.; Wegner, T.H.; Holbery, J.D., TAPPI International Conference on Nanotechnology for the Forest Products Industry (2006).
117. Tunable Solvents for Fine Chemicals from the Biorefinery. Eckert, C.A.; Liotta, Charles L.; Ragauskas, A.J.; Hallett, J.P.; Kitchens, C.L.; Hill, E.M.; Draucker, L.C., 232nd ACS National Meeting, San Francisco, CA (2006).
118. The Synthesis of Carbohydrates in Ionic Liquids. Zhang, J.; Ragauskas, A.J., 231st ACS National Meeting, Atlanta, GA (2006).
119. Arboreal Nanotechnology. Ragauskas, A.J.; Rials, T.G.; Ashurt, R.W.; Cullinan, H.T.; Wegner, T.H.; Holbery, James D., 231st ACS National Meeting, Atlanta, GA (2006).

120. Probing Fiber-fiber Interfaces with Fluorescence Resonance Energy Transfer: Imaging Individual Fiber-fiber Crossings. Thomson, C.I.; Lowe, R.M.; Ragauskas, A.J., 231st ACS National Meeting, Atlanta, GA (2006).
121. The Dynamic Change of Fiber during Extended Oxygen Delignification of SW Kraft Pulps. Zhang, D.; Pu, Y.; Ragauskas, A.J., 231st ACS National Meeting, Atlanta, GA (2006).
122. Fiber Modification with Peroxide Bleaching on ECF Pulp. Dang, Z.; Elder, T.; Ragauskas, A.J., 231st ACS National Meeting, Atlanta, GA (2006).
123. Green Chemistry One-pot Synthesis of 1,4-naphthoquinones and Related Structures. Witayakran, S.; Ragauskas, A.J., 231st ACS National Meeting, Atlanta, GA (2006).
124. An Innovative Green Chemistry Methodology for Selective Aerobic Oxidation of Primary Alcohols. Jiang, N.; Ragauskas, A.J., 231st ACS National Meeting, Atlanta, GA (2006).
125. Fundamentals of Fiber Modification Chemistry. Ragauskas, A.J. Pu, Y., Allison, L., Pacificchem., HI (2005).
126. A Nano Perspective of Cellulose. Ragauskas, A.J., The Second Workshop on Regenerated Cellulose and Cellulose Derivatives, Karlstad University, Sweden (2005).
127. New Value Streams from Residuals and Spent Liquor. Ragauskas, A.J., Fall TAPPI Technical Conference, Atlanta, GA (2004).
128. Ratiocination for Laccase Biobleaching of Recycled Paper. Knutson, K.; Ragauskas, A.J., 227th ACS National Meeting, Anaheim, CA (2004).
129. Industrial Biotech Applications in the Pulp and Paper Industry. Ragauskas, A.J., World Congress on Industrial Biotechnology and Bioprocessing Orlando, FL (2004).
130. DBD A Palmary Approach to Fiber Modification. Vander Wielen, L.; Ragauskas, A.J., AIChE Annual Meeting, San Francisco, CA (2003).
131. Enzymatic Biobleaching of Recalcitrant Paper Dyes. Knutson, K.; Ragauskas, A.J., SERMACS, Atlanta, GA (2003).
132. Nanotechnology – Changing the Challenge in Pulp and Paper Research, presented at Nano All Around Us Conference, Ragauskas, A.J., The University of Wisconsin's Inaugural Technical Conference and Public Expo on Nanotechnology (2003).
133. Dielectric Discharge Initiated Grafting onto Cellulosic Fibers. Vander Wielen, L.; Ragauskas, A.J., Gordon Conference, Italy (2003).
134. Redefining the Pulp and Paper Industry with New Chemo-Enzymatic Technologies. Ragauskas, A.J., Gordon Polysaccharide Conference, Italy (2003).
135. Laccase: An Ancilla to Kraft Pulping. Dyer, T.; Kim, D.; Ragauskas, A.J., 225th ACS National Meeting, New Orleans, LA (2002).
136. Invigorating High Kappa Kraft Pulps with Laccase. Chandra, R.P; Ragauskas, A.J., 225th ACS National Meeting, New Orleans, LA (2002).
137. Parlaying Dielectric Breakdown Discharge for Fiber Modification. Vander Wielen, L.C., Ragauskas, A.J., 225th ACS National Meeting, New Orleans, LA (2002).
138. Modifying the Color of Recycled Paper with Laccase. Knutson, K.; Ragauskas, A.J., 224th ACS National Meeting, Boston, MA (2002).
139. Enhanced Environmentally Compatible Pulp Bleaching Chemistry. Yang, R.; Lucia, L.; Ragauskas, A.J.; Jameel, H., Intern. Conf. Organic Synth., Baltic Organicum Syntheticum, Vilnius, Lithuania (2002).
140. Applications of Lignin NMR Techniques for Wood Resins. Dyer, T.; Ragauskas, A.J.; Nilvebrant, N.-O., 223rd ACS National Meeting, Orlando, FL (2002).

141. Fiber Modification with Laccase: You Say You Want a Revolution? Chandra, R.P.; Wolfaardt, F.; Ragauskas, A.J., 223rd ACS National Meeting, Orlando, FL (2002).
142. Fundamental Delignification Chemistry of Laccase-Mediator Systems on High-Lignin Content Kraft Pulps-A Synopsis of Contributions. Chakar, F.S.; Ragauskas, A.J., 125th ACS National Meeting, San Diego, CA (2001).
143. Defining the Photostabilization Succor Properties of Acetylated Lignin. Ragauskas, A.J.; Pu, Y.; Lucia, L., 125th ACS National Meeting, San Diego, CA (2001).
144. Laccase-Lignin Oxidative Chemistry. Ragauskas, A.J.; Allison, L.; Chakar, F.S., International Chemical Congress of Pacific Basin Societies, Honolulu, HI (2000).
145. Parsing Laccase's Effect on Modifying Lignin. Chandra, R.; Ragauskas, A.J., International Chemical Congress of Pacific Basin Societies, Honolulu, HI (2000).
146. Structural Enhancement of Laccase-Lignin Reactions. Chakar, F.S., Ragauskas, A.J., 219th ACS National Meeting, San Francisco, CA (2000).
147. Provenience of Lignin Reactivity in Extended Oxygen Delignification, Lucia, L.; Ragauskas, A.J.; Yang, R., International Chemical Congress of Pacific Basin Societies, HI (2000).
148. Breaking the Oxygen Delignification Barrier: Lignin Reactivity and Inactivity. Lucia, L.A.; Boasman, A.; Ragauskas, A.J., 219th ACS National Meeting, CA (2000).
149. Insight into Laccase-Mediator Delignification of Softwood Kraft Pulps. Chakar, F.S.; Ragauskas, A.J., 1999 217th ACS National Meeting, Anaheim, CA (1999).
150. New NMR Applications for Old Spectroscopic Techniques: Detection of Lignin-Quinone Structures by ³¹P-NMR. Zawadzki, M.; Ragauskas, A.J., 217th ACS National Meeting, Anaheim, CA (1999).
151. Fundamental chemistry involved in chromophore removal of chemical pulps. Zawadzki, M.; Runge, T.; Ragauskas, A., 215th ACS National Meeting, Dallas (1998).
152. Analysis of residual lignin structure from modern pulping technologies. Froass, P.M.; Jiang, J.E.; Ragauskas, A.J., 211th ACS National Meeting, New Orleans, LA (1996).
153. Mercapto photostabilization mechanisms for mechanical pulp. Ragauskas, A.J.; Cook, C.M., 211th ACS National Meeting, New Orleans, LA (1996).

PROFESSIONAL SERVICES

UTK

- Associate Vice Chancellor for Research Search Committee Member (2016)
- Director, Research Development Team, Search Committee Member (2016)
- ChBE Tenure Committee (2014 – Present)
- Presentation to UTK ChBE Assistant Professors, External Funding (2016)
- PhD Proposal and Defense Committees (2014 – Present)
- UTK-ORNL JDRD proposal review (2018)
- Haslam Scholars Program Lecture: Biofuels/Biorefining (February 2018)
- UTK Chem Eng., Head of Promotion/Tenure Committee (2018 - Present)
- UTK Strategic Visioning Committee and Strategic Visioning Executive Committee (2020)
- ChBE Chair Exploratory Search (2021)
- ChBE Assistant Professors Search (2021)
 - STRIDE for Faculty Workshop, October 12
- Chemical and Biomolecular Engineering Committee Assessment (2021)
 - K. Glynn, J. Brown

- PPPR Committee (2022)
- ChBE Assistant Professor Search Committee (2021)
- Virtual SPARKS: The ‘Space’ Between Aerospace and Biomedical Engineering (2022)
- Volkswagen Innovation Meeting @UTK (2022)
- ChBE Chair search committee (2022)
- UT IAMM Biomaterials Workshop (2022)

ORNL

- BSD extended leadership team
- Sequence to Ecosystem Implications: Potential new user facility (2019)
- Biomaterials Facilities Initiative (2018)
- Soft Matter Initiative (2017)
- BSD Research & Management Team (2014 - Present)

GA Tech

- Ph.D. Proposal Committee, PhD Defense Committee
- Chemistry and Biochemistry Safety Committee
- Chemistry and Biochemistry Development Committee
- GA Tech GRA Eminent Scholar in Energy Sustainability Search Committee
- GA Tech-Imperial-ORNL Committee for Development of Collaboration Research/Educational Programs in Biopower/BioFuels/Biomaterials
- Defining and Supporting Interdisciplinary: External Research Collaborations Committees

Institute of Paper Science and Technology

- Paper Science Engineering Graduate Committee
- PhD Proposal Committee, PhD Defense Committee
- Gunnar and Lillian Nicholson Graduate Fellowship/Faculty Program
- Sloan/CPBIS Study Group
- SAC Institutional Effectiveness Subcommittee
- SAC Reaccreditation Committee
- Graduate and Faculty Recruiting Committees
- Safety Committee

External Tenure Promotion Review (2000 – Present)

- Old Dominion University (2), Norfolk, VA. Chemical Biomolecular Engineering, University Tennessee, Penn State, University of Toronto, Auburn University, Queen’s University
- Department of Civil & Environmental Engineering, Old Dominion University, Norfolk, VA (2015)
- Chemical Biomolecular Engineering, University Tennessee (2015)
- External Evaluation Agricultural and Biological Engineering Promotion to Professor (2015)
- Department of Chemical Engineering & Applied Chemistry, University of Toronto (2016)
- Sustainable Chemical Technology, Imperial College (2018)
- Department of Biosystems Engineering, Auburn University, AL (2018)
- Civil and Environmental Engineering, Old Dominion University, Norfolk, VA (2018)

- Department of Plant and Soil Science, Texas Tech University (2018)
- Russell School of Chemical Engineering, University of Tulsa (2019)
- Mechanical Engineering, King Fahd University of Petroleum and Minerals, (2019)
- University of California, Riverside, The Center for Environmental Research and Technology (2019)
- Department of Forest Biomaterials, North Carolina State University (2020)
- Department of Biological Systems Engineering, College of Agricultural, Human, and Natural Resource Sciences, Washington State University (2020)
- RBI, Georgia Institute of Technology (2020)
- Department of Chemical and Environmental Engineering, University of Cincinnati (2020)
- Institute of Chemical Sciences and Engineering, Ecole Polytechnique Federale de Lausanne, Switzerland (2020)
- Department of Forestry and Department of Chemical Engineering & Material Science, Michigan State University (2021)
- Nominate Professor for a Canada Research Chair (CRC) Tier 1 at the University of Alberta (2022)
- University of KwaZulu-Natal (Howard College Campus), Chemical Engineering, Associate Professor promotion (2022)

Outside Professional Service

- ACS Spring National Meeting, Division of Energy and Fuels. Advances in Lignin-derived Fuels and Chemicals, Oral & Poster Sessions (2023).
- ACS Fall National Meeting, Symposium CELL 002 "From Biopolymers to Commercial Products: Materials Upgrading of Lignocellulose" (2022)
- 2021 AIChE Annual Meeting, November 2021, Boston
- ACS Meetings & Expositions - American Chemical Society (April 2021), Session Chair
 - Lignocellulosic Biorefining: From In-Silico to Products
 - Recent Advancements in Lignin Valorization Strategies for Fuels and Chemicals
- Efficient Processing of Lignin to Bioproducts and Biofuels. Bin Yang, Washington State University, Arthur J. Ragauskas, The University of Tennessee-Knoxville and Joshua Yuan, Texas A&M University, 2020 Annual AIChE Student Conference. November 13-16, 2020.
- Co-Session Chair, Efficient Biological Processing of Lignin to Bioproducts and Biofuels, AIChE, Orlando, FL (November 2019)
- Scientific Committee, Fibres Energivie and IAR Bio-Economy Clusters fifth Edition of Woodchem Conference in Nancy, France (November 2019).
- Co-Session Chair, Everything Lignin, Symposium on Biotechnology for Fuels and Chemicals. Seattle, WA (April 2019).
- Co-Session Chair, Efficient Processing of Lignin to Bioproducts and Biofuels I and II, AIChE, Pittsburg (October 2018)
- Organizing Committee. 11th World Bioenergy Congress and Expo. Golden Tulip Berlin – Hotel Hamburg, Berlin, Germany (July 2018).
- ECO-BIO Challenges in Building a Sustainable Biobased Economy. Dublin. Session Chair (March 2018)
- AIChE Annual Meeting, Session co-Chair (October 2017)

- Scientific Advisory Committee, International Conference on Biomass Conversion and Renewable Materials, NY (August 2017)
- Organizing Committee, 5th International Conference on Green Chemistry and Technology, Rome, Italy (July 2017)
- Scientific Committee, International Conference on Biomass Conversion and Renewable Materials Conference hosted by the State University of New York – College of Environmental Science and Forestry (August 2017)
- Advanced Products from Lignin and Nano-fibrillated Cellulose. The International Chemical Congress of Pacific Basin Societies (December 2015).
- Organizing Committee, University of Georgia and Georgia Institute of Technology Biofuels Summit (December 2013)
- Organizing Committee, GTMI workshop of Opportunities for Innovation in Lignocellulosic Materials, IPST@GT, (December 2013)
- Scientific Committee of the International Symposium on Lignocellulosic Materials, held in the context of the 13th International Congress on Science and Technology of Metallurgy and Materials, in Puerto Iguazu, Argentina (2013)
- Convener, 35th Symposium on Biotechnology for Fuels and Chemicals, Portland, OR (April 29-May 2, 2013)
- ACS Session, Chair. American Chemical Society, Division of Cellulose and Renewable Materials, Improving Efficiency at Biorefineries, San Diego (2012).
- Organizing Committee, TAPPI International Conference on Nanotechnology for Renewable Materials, Washington (2011).
- ACS Session, co-Session Chair: Nanolignocellulosics, Honolulu, HI (2009).
- Participant for AFPA Forest Products Industry Technology Roadmap Workshop, held at IPST@GT (2009).
- Organizing Committee, International Conference on Nanotechnology for the Forest Products Industry, Edmonton, Alberta (2009).
- International Pulp Bleaching Conference, Program Committee, Quebec, Canada (2008).
- ACS Session Presiding Chair, 2008 Engineering the Transition to the Bioeconomy, 235th ACS National Meeting, New Orleans, LA (2008).
- Organizing Committee, International Conference on Nanotechnology for the Forest Products Industry, St. Louis, MO (2008).
- Fourth Meeting of the U.S. and Sweden Science and Technology Committees, Invited by State Department, and presented a seminar titled “Forest Biorefinery A Contribution to the One Big Thing Fulbright Chair in Alternative Energy” (2008).
- USA Embassy One Big Thing review and presented a seminar titled “Forest Biorefinery a Contribution to the One Big Thing Fulbright Chair in Alternative Energy” (2008).
- Fulbright Grantee Day (2008).
- Bioenergy Meeting at American Embassy, involving senior forestry professionals and officials from Minnesota as part of their Nordic tour organized by the Blandin Foundation, Ragauskas reviewed research in US/Swedish biofuel technologies (2008).
- Assistant Sec, DOE David Rodger visit to US Embassy, Stockholm for a review of Swedish companies contributing to One Big Thing (2008).
- International Pulp Bleaching Conference, Program Committee, Quebec, Canada (2008).

- ACS Session Presiding Chair, 2008 Engineering the Transition to the Bioeconomy, 235th ACS National Meeting, New Orleans, LA (2008).
- Organizing Committee, International Conference on Nanotechnology for the Forest Products Industry, St. Louis, MO (2008).
- Organizing Committee, International Conference on Nanotechnology for the Forest Products Industry Knoxville, TN (2007).
- Organizing Committee/Session Chair TAPPI International Conference on Renewable Energy, Atlanta, GA (2007).
- Session Chair Pira International Fiber Engineering for Papermakers Conference, Stockholm, Sweden (2007).
- NSF Chemistry Workshop on Sustainability (2006).
- Session Co-Chair 28th Symposium on Biotechnology for Fuels and Chemicals, Nashville, TN (2006).
- ACS Session Co-Chair/Organizer, 2006 Topochemical Modification of Lignocellulosic Fibers, Atlanta, GA (2006).
- Session Chair Pira International Ultra-thin Films and Nanocoatings Conference, Vienna, Austria (2006).
- TAPPI International Conference on Nanotechnology for the Forest Products Industry, Program Committee Member and Session Chair (2006).
- Session Chair 2005 Pacifichem. Agrochemistry: Characterization, Photostabilization and Usage of Lignocellulosic Materials (2005).
- Pira International, Workshop Chair, Future Developments in Starch for Paper Manufacture, Atlanta, GA (2005).
- Program Committee Member 2005 International Pulp Bleaching Conf., Stockholm (2005).
- Program Committee Member for Workshop on Cellulose and Cellulose Derivatives, Karlstad University, Karlstad, Sweden (2005).
- Program Committee Member GT-ORNL-ICL Biofuels – Biomaterials Program Review (December 2004); Workshop (April 2005); Strategic Review (June 2005).
- Program Chair for Workshop on Defining the Opportunities, Challenges, and Research Needs for NanoBiomaterials Derived from Lignocellulosics, Atlanta, GA (September 2005).
- Program Committee Member for Nanotechnology Workshop for the Forest Products Industry, Washington, DC (2004).
- Session Chair 2003 TAPPI Fall Technical Conference: Engineering, Pulping & PCE&I, Chicago, IL (October 2003).
- Poster Session Chair, 2002 International Pulp Bleaching Conference, Portland, OR (2002).
- 11th International Symp. Wood and Pulping Chemistry, Nice, France, Session Chair (2001).
- 10th International Symp. Wood Chemistry and Pulping, Japan, Session Chair (1999).
- 1998 International Symp. Emerging Technologies of Pulping and Papermaking of Fast-Growing Wood, Session Chair, South China University of Technology, P.R. China (1998).
- 1997 TAPPI Biological Sciences Symposium, San Francisco, CA (1997).
- 211th American Chemical Society National Meeting, New Orleans, Cellulose, Paper, and Textile Division, Session Chair (1996).

EDITORIAL ADVISORY BOARD SERVICE

- Global Journal of Organic Chemistry (2010 – Present)

- Journal of Petroleum & Environmental Biotechnology (2010 – Present)
- The Open Biotechnology Journal (2009 – Present)
- Journal of Biobased Materials and Bioenergy (2009 – Present)
- Journal of Petroleum Technology and Alternative Fuels (2010 – Present)
- Journal Wood Chemistry and Technology (2000 – Present)
- Journal of Pulp and Paper Science (2000-2008)
- Holzforschung (2003 – Present)
- Biofuels (2009 – Present)
- Biofuels, Bioproducts, and Biorefining (2007 – Present)
- Industrial Biotechnology (2007 – Present)
- BioEnergy Research (2007 – Present)
- Sustainability (2009 – Present)
- Journal of Chemical Technology and Biotechnology (2009 – 2019)
- TAPPI Journal (2010 – Present)
- Frontiers in Cellulose Biotechnology/Frontiers in Biotechnology (2011 – Present)
- Current Biotechnology (2011 – Present)
- Energies (2011 – Present)
- RN Chemical Engineering (2011 – Present)
- Organic Chemistry: Current Research (2011 – Present)
- ChemSusChem (2011 – Present)
- Open Journal of Organic Polymer Materials (2012 – Present)
- Physiobiochemical Metabolism (2012 – Present)
- Modern Research in Catalyst (2012 – Present)
- Technologies (2012 – Present)
- International Journal of Bioorganic Chemistry & Molecular Biology (2012 – Present)
- Emirates Journal of Food and Agriculture (2012 – Present)
- Energy Conversion and Management (2013 – Present)
- GSTF Journal of Chemical Science (JChem; 2013 – Present)
- Academic and Scientific Publishing (2013 – Present)
- Microscopy Research (2013 – Present)
- Journal of Materials Science and Engineering with Advanced Technology (2013 – Present)
- Journal of Sci Med Chemistry (2013 – Present)
- Frontiers in Energy (2013 – Present)
- Review Editorial Board of Frontiers in Bioenergy and Biofuel (2013 – Present)
- Innovative Energy Policies (2013 – Present)
- International Journal of Renewable Energy Research and Development (2013 – Present)
- Journal of Current Reports on Energy (2014 – Present)
- International Editorial Board Member of Journal of The Korean Wood Science and Technology (2014 – Present)
- Journal of Chemical Engineering Research Studies (2014 – Present)
- Journal of Environmental Sciences (2014 – Present)
- International Journal of Polymer Science (2014 – Present)
- SOJ Biotechnology (2014 – Present)
- EC Chemistry Journal (2014 – Present)

- Aperito Journal of Advanced Plant Biology (2014 – Present)
- Food Science and Nutrition (2014 – Present)
- Annals of Chromatography and Separation Techniques (2015 – Present)
- Journal of Oil and Gas Research (2015 – Present)
- Journal of Modern Engineering (2015 – Present)
- AIMS Bioengineering (2016 – Present)
- Bioethanol Journal (2016 – Present)
- Mini-Reviews in Organic Chemistry (2016 – Present)
- BioAccent BAOJ Chemistry (2016 – Present)
- Energy (2016 – Present)
- The Scientific Pages of Crop Science (2016 – Present)
- Innovative Techniques in Agriculture (2016 – Present)
- Green Energy & Environment (2016 – Present)
- SciFed Journal of Chemical Research (2016 – Present)
- The Open Biotechnology Journal (2016 – Present)
- Advances in Biochemistry and Biotechnology (2016 – Present)
- Special issue of Frontiers in Energy Research, section Bioenergy and Biofuels titled Advancements in Biomass Recalcitrance: The Use of Lignin for the Production of Fuels and Chemicals (2018)
- Fuel Processing Technology (2022)

Scientific Advisory Board/Committee

- NSERC Bioconversion Network, Canada
- National Commission on Energy Policy
- National Academy of Science, Committee Member Technologies to Deter Currency Counterfeiting
- Scientific Advisory Committee, Arauco Company, Chile
- UCLA DOE External Advisory Committee member
- Aalto University Advisory Board, Finland
- BioFuelNet Canada's Independent Scientific Advisory/Management Board, Canada
- Latvian State Institute of Wood Chemistry International Advisory Board (2020-)
- EU Academy of Sciences (EUAS) (2020 -)
- Energy & Biosciences Institute (EBI) Review Committee (2021)
- Academy of Finland, Evaluation Committee of the New Energy Programme (2021)

NATIONAL/INTERNATIONAL FUNDING REVIEW PANELS AND COMMITTEES

- Natural Sciences and Engineering Research Council of Canada
- GA One Stop Shop
- Canadian Foundation for Innovation
- Consortium for Plant Biotechnology Research Incorporated
- United States Department of Agriculture
- National Research Initiative Competitive Grants Program (NRI)
- Small Business Grants
- National Science Foundation

- Department of Energy
- ACS - Petroleum Research Fund
- ARPA-E
- Louisiana Board of Regents Support Fund
- Kansas Bioscience Eminent Scholars Program Review
- Austrian Science Fund
- European Commission Research Directorate-General Invitation to the evaluation of proposals for the "Quality of Life and Management of Living Resources" RTD program (2001).
- J. Paul Getty Museum/Foundation to review research needs for photostabilization technologies/protocols for the Great Masters museum holdings (2002)
- National Renewable Energy Laboratory, Golden, CO, Stage-Gate Program review of Cellulose/Hemicellulose Biorefiner Research Programs
- U.S. Civilian Research and Development Foundation
- Evaluation of biotechnology and chemistry study programmes in Lithuania, Centre for Quality Assessment in Higher Education Lithuania (2015, 2014, 2013)
- National Nanotechnology Committee for Forest Products Industry
- National Research Foundation, South Africa
- Swedish The Knowledge Foundation: The KK-foundation
- Swedish Foundation for Strategic Research - Strategic Research Centres
- VINN Excellence Center/Swedish Agency for Innovation Systems
- Finnish Academy of Science
- VTT Technical Research Centre of Finland, Clean World Program
- Netherlands Organization for Scientific Research
- Norway Research Council
- The Technology Foundation STW
- ERA Chemistry
- Israel Science Foundation's FIRST: Focal Initiatives in Research in Science and Technology
- BARD: The United States - Israel Binational Agricultural Research and Development Fund
- Swiss National Science Foundation (2019)
- Singapore Agency for Science, Technology and Research
- UBC Center Review Committee for Pulp and Paper Center, Canada
- Agence Nationale de la Recherche, France
- Danish National Advanced Technology Foundation
- Danish Council for Strategic Research
- Netherlands Organisation for Scientific Research (NWO, 2021)
- National Research Foundation, South Africa
- Romanian National Council for Scientific Research
- King Fahd University of Petroleum & Minerals, Saudi Arabia
- TEKES Strategic Centres for Science, Technology, and Innovation (*SHOK*) Program, Forest Cluster, Finland
- OTKA - Hungarian Scientific Research Fund
- Chair of CONICYT and Academy of Finland Sustainable Energy Review, Santiago, Chile
- FONDECYT - CHILE (2015, 2017, 2019)

- European Research Council Executive Agency (2015)
- Academy of Finland/Biomass Conversion (2015)
- European Commission (2015)
- María de Maeztu Units of Excellence Programme, by the Spanish Government to promote and support outstanding research units (2015)
- Agenda 2020 pulping and nanocellulose subcommittee (2014-15)
- Czech Science Foundation (2016, 2020)
- SBIR National Program Review Panel Leader (2016)
- Iowa Energy Center (2016)
- Austrian Science Fund (2017)
- Spanish State Research Agency (2017)
- Agence nationale de la Recherche (2017)
- Program of the Israel Science Foundation (2017)
- Industrial Biotechnology Group, International Centre for Genetic Engineering and Biotechnology (2017)
- Canada Excellence Research Chairs (CERC) Competition (2017, 2019)
- Laboratory of Excellence ARBRE (2017)
- The Royal Society, Dorothy Hodgkin Fellowships (2018)
- Innovation Fund Denmark (2018)
- Eurostar (2018)
- Biotechnology and Biological Sciences Research Council (2018)
- NSERC Reminder: Discovery Grant Review (2019)
- Future Leaders Fellowships, UK Research and Innovation (2019)
- Dutch Research Council (2019)
- Start: Science Alliance Office of Research & Engagement, UTK (2019)
- Royal Swedish Academy of Agriculture and Forestry (KSLA) in Stockholm, “Tandem Forest Values” (2019)
- UAEU Research Grants Management System (2020, 2021, 2022)
- The European Science Foundation (2020)
- Israel Ministry of Science and Technology (2020)
- Large-scale Research Programmes « Grands programmes de Recherche (GPR) » 2020 Evaluation Report
- The KU Leuven (University of Leuven, Belgium) Impulse Fund projects (2020, 2021)
- Agence Nationale de la Recherche (2021)
- DOE SBIR/STTR Phase II (2021)
- UKRI Biotechnology and Biological Sciences Research Council (BBSRC, 2021)
- SNS Nordic Forest Research (2021)
- National Research Foundation-Prime Minister’s Office Singapore (2021)
- Eurostars 3 – Call 1 (2021)
- Eureka Programme (2021, 2022)
- Mitacs Accelerate Quebec, Canada (2022)
- Wallenberg Foundation WiSE 2 (2022)

MEMBERSHIP IN PROFESSIONAL AND HONOR SOCIETIES

- Royal Society of Chemistry
- Society for Industrial Microbiology and Biotechnology (SIMB)
- American Society for Engineering Education
- American Institute of Chemical Engineers
- Society of Chemical Industry
- ASEE - American Society for Engineering Education (2014 -)
- American Institute of Chemical Engineers (2017-)
- Forest Bioproducts Division (2019 -)
- American Nano Society (2011 -)
- Invited International Academy of Wood Science (2003 -)
- National Academy of Science, Committee Member for Technologies to Deter Currency Counterfeiting (2005-2006)
- American Association of the Advancement of Science (2005 -)
- The Society of Chemical Industry (2011 -)
- American Chemical Society (1985-)
- Cellulose, Paper and Textile Division (1991 -)
 - -Assistant Program Chair (1996-1998)
 - -Student Activities Chair (1996-1998)
- TAPPI – Technical Association of Pulp and Paper Industry (1993 -)
- PAPTAC - Pulp and Paper Association of Canada (2000-2003).

DIVISION COMMITTEES

Pulp Manufacture Division

	<u>Effective Date</u>	<u>Thru Date</u>
Alkaline Pulping and Bleaching Committee	9/2/1997	
Alkaline Pulping Committee	9/2/1997	5/14/2007
Color Stabilization Subcommittee	5/4/1998	5/14/2007
Pulp Bleaching Committee	9/2/1997	5/14/2007
Wood Chemistry and Biotechnology	5/26/1995	8/2/2009

Independent Technical Committee

Biochemical/Yeast & Microorganisms	10/29/2009	
Biorefinery Committee	1/2/2009	
International Research Management Committee	9/8/2009	
Paper Physics Committee	6/7/2004	
Thermochemical/Chemical Catalytic	10/29/2009	

Nonwovens Division

Nonwovens Binders and Additives Committee	2/1/2000	
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Communities

Nanotechnology Steering Committee	9/1/2004	
Renewable Energy Conference Committee	2/6/2007	1/7/2009

Board Committees

TAPPI Journal Editorial Board	4/21/2010	
TAPPI Past & Current FELLOWS	3/1/2004	

ACADEMIC ACCOMPLISHMENTS

Ragauskas Pedagogical Prizes Awarded

- GT Thank a Teacher Certificate (2011)
- 1999 IPST President's Award for Education
- 1999 Teacher of the Year, selected by IPST graduate students

Student Awards Achieved under Ragauskas' Supervision

- James E. Sealey II Best IPST Ph.D. Student – 1997
- Troy M. Runge Best IPST Ph.D. Student – 1998
- Fadi S. Chakar Best IPST Ph.D. Student – 1999
- Fadi S. Chakar Best Poster at Int. Pulp Bleaching Conference – 2000
- Fadi S. Chakar ACS Graduate Student Award – 2000
- Richard Chandra ACS Graduate Student Award – 2003
- Lorraine Vander Wielen Best IPST Ph.D. Student – 2004
- Qining Sun GT Research and Innovation Conference, IPC Foundation Innovation Award – 2013
- Chang Geun Y'oo ORNL Individual award in Postdoctoral Researcher category, UT- Battelle Awards Program – 2017
- Mi Li ORNL Post-Doctoral Researcher Award – 2017
- Najjia Hao UTK Student/faculty research award (2017)
Invited talks at the meeting of American Institute of Chemical Engineers (AIChE) Knoxville-Oak Ridge regions (2015, 2017)
Jim and Sandra McKinley Outstanding Graduate Student Award (2020)

Postdoctoral Research Fellow Awards Achieved under Ragauskas' Supervision

- Dr. S. Bhagia: ORNL Postdoctoral Research Award (2021)
- Dr. M. Li: Research Distinguished Achievement Award, Biosciences Division, ORNL
- Dr. Yoo: ORNL UT-Battelle Awards (2017); Supplementary Performance Award ORNL (2016)

Ragauskas Development Courses

- 2000 Georgia Institute of Technology, DuPree College of Management
 - Executive Program for Technical Managers
 - Certificate program designed to develop managers who know how to manage a firm's core technologies and to lead and manage its key technologists.
- 2000 Georgia Institute of Technology, DuPree College of Management
 - Developing an Effective E-Business Strategy
 - Certificate program to gain an in-depth understanding of the emerging field of E-business.
- 2001 Georgia Institute of Technology, DuPree College of Management
 - Project Management
 - Certificate program designed to provide managers with the knowledge base, tools, and skills required to successfully manage projects

TEACHING ACCOMPLISHMENTS

Southeast University, Nanjing, China (September 2017)

Invited short course on biorefining biomass to biofuels.

University of Tennessee, Chemical Biomolecular Engineering

- Renewable Biopolymers 690

Ga Tech undergraduate and graduate courses developed and presented (2002-14):

- Organic Chemistry II/Georgia Institute of Technology Chemistry 2312
- Spectroscopy in Organic Chemistry 6222/5020
- Pulping and Bleaching Chemistry: Georgia Institute of Technology Chemistry 8833A
- Biorenewable Polymers: Georgia Institute of Technology Chemistry 8833A

Guest GA Tech Professor

- The Science of Alternative Energy: GT Chem. 2803

IPST: FY 1989 - 2002

- Introduction to Organic Chemistry/IPST CHEM 5020
- Carbohydrate Chemistry/IPST CHEM 6221
- Lignin Chemistry/IPST CHEM 6220
- Spectroscopy in Organic Chemistry/IPST CHEM 6222
- Advanced Pulping and Bleaching Chemistry/IPST CHEM 6223

Invited Teaching Visit - Chalmers University Of Technology (2001)

Dr. Ragauskas was invited by the Department of Forest Products and Chemical Engineering, Chalmers University of Technology (Goteburg, Sweden), to present a 2-credit graduate course on pulping and bleaching titled: Fiber Line Bleaching, Department of Forest Products and Chemical Engineering.

Course Summary: The course is directed at reviewing recent developments in advanced pulp bleaching. Students are introduced to advanced concepts in lignin/carbohydrate structure and pulp bleachability. State-of-the-art pulp bleaching equipment, chemistry, and environmental issues are explored.

Course Objectives:

1. To provide a review of how lignin/carbohydrate structure influences pulp bleachability.
2. To establish the relationship between basic pulp bleaching chemistry and modern bleach plant operations.

FULBRIGHT TEACHING ACCOMPLISHMENTS (2008-09)

During my Fulbright tenure at the Chemical and Biological Engineering Department, Chalmers University of Technology, I participated in several classes on alternative energy and forest biorefinery, including:

- KBT145: Biorefinery
- KBT130: Cellulose Technology
- In addition, I presented teaching material to students at Forest Products Industry Research College (FPIRC).
- Forest Biorefineries Bridge to Future: FPRIC Sweden (August 2008).

- US Perspective on Biorefinery, Royal Institute of Technology, Stockholm (January 2009)

GUEST CLASS SEMINARS

- The BioRefinery: The Next Green Revolution in Science, Engineering and Innovation, Berzeliusdagarna, (Top Swedish High School Science Students) University of Stockholm (January 2008)
- Biomass-Biofuels-Biomaterials, Mill Creek High School in Hoschton, GA on May 18, 2007, (Note: 1-day presentations to grade 10 students on the fundamentals of biomass, biofuels, and conversion chemistry-biochemistry)
- Future of Integrated Biofineries, GA Tech Honors Energy Class (September 2006).
- GA Tech- Chem. 2803 HP1 - The Science of Alternative Energy (2010)
- Course Description: This course will give a general overview of the most popular alternative energy sources which are currently being used or developed to help relieve the world's dependence on fossil fuels. The basic scientific principles governing the current and future approaches in solar photo-voltaic, fuel cells, biomass conversion, nuclear energy, and wind power will be presented. Though the course will focus on the basic principles and fundamental science underpinning the current advancements in energy technologies, there will also be an emphasis on understanding the efficiency and general sustainability issues associated with the most popular alternate energy options.

GRADUATE AND UNDERGRADUATE STUDENTS SUPERVISED

Undergraduate Students

- A.J. Cesternino GA State, Chemistry Department (1992)
- J. Szwec GA State, Chemistry Department (1993)
- C. Qui Clark Atlanta University, Chemistry Department (1994)
- D. Johnson Clark Atlanta University, Chemistry Department (1996)
- V. Goel Emory University, Chemistry Department (2000)
- S. Anderson Clark Atlanta University, Chemistry Department (2001)
- S. Krizan Chemical Engineering, McMaster University (2002)
- G. K. Feld School of Chemistry and Biochemistry, GA Tech (2005-06)
- J. Slady School of Chemistry and Biochemistry, GA Tech (2005-06)
- N. Cheluka Department Paper Technology, Indian Institute of Technology, (2006)
- A. Zettili Chemistry Department, Jacksonville State University, AL (2006)
- S. Anderson CHBE/UTK (2016/2017)
- R. Ledbetter CHBE/UTK (2015/2016)
- W. Dyer CHBE/UTK (2021)

GRADUATE COMMITTEES - GEORGIA TECH:

GT PhD Proposal Committee

- Susnata Samanta, School of Chemistry and Biochemistry (2004)
- Huina Guo, School of Polymer, Textile and Fiber Engineering (2004)
- Kimberly L. Nelson, School of Chemical and Biomolecular Engineering (2006)
- Bradley E. Carson, School of Chemistry and Biochemistry (2006)
- Kane Barker, School of Chemistry and Biochemistry (2006)
- Wei Mu, School of Chemical Biomolecular Engineering (2011)

GT PhD Committee

- Courtney Sorrell, School of Chemistry and Biochemistry (2005)
- Se-Young Yoon, School of Chemical Biomolecular Engineering (2005)
- Ayanna M. Bernard, School of Chemical Biomolecular Engineering (2005)
- Jenny Raynor, School of Chemistry and Biochemistry (2006)
- Mariefel Olarte, School of Chemical Biomolecular Engineering (2011)
- Pranav Kalelkar, School of Chemistry and Biochemistry (2013)
- Laura Mast Stoy, School of Civil and Environmental Engineering (2021)

GT PhD Defense Committee

- Se-Young Yoon, School of Chemical Biomolecular Engineering (2007)
- Susnata Samanta, School of Chemistry and Biochemistry (2007)
- Patrick E. Hazlewood, School of Materials Science and Engineering (2006)
- Mariefel B. Valenzuela, School of Chemical Biomolecular Engineering (2005)
- Jihoon Lee, School of Chemical Biomolecular Engineering (2010)
- Laura Mast Stoy, School of Civil and Environmental Engineering (2021)

UTK PhD Defense Committee

- Stephanie Spittle, Chemical and Biomolecular Engineering (2022)
- Riddhi Shalibhad Shah, Bredesen Center for Interdisciplinary Research (2019)
- Luke Servedio, Chemical Biomolecular Engineering (2017)
- Yang He, Chemical Biomolecular Engineering (2017)

M.S. Graduate Supervising Activities

Student and Research Topic/Report	Graduation Date	Post-Graduate Position
• Peter M. Froass	1993	IPST Ph.D.
• Brian Boyer	1993	Patent Lawyer
• Eric J. Draheim	1994	Kimberly-Clark Corporation
• Fadi Chakar	1995	Appleton Papers Inc.
• Coray Harper	1995	GE Company
• Thomas Bales	1996	Booz Allen and Hamilton
• John Werner	1999	Kimberly-Clark Corporation
• Andrew Kulchin	2000	Samoa Pacific Cellulose
• Daniel Johnston	2001	UPM
• Jason Montegna	2002	IPST graduate
• Kendric Nelson	2002	IPST graduate
• W. Widiatmoko	2006	April, Indonesia
• S. Anderson	2008	-

GA Tech Co-Supervisor Research Accomplished in Ragauskas Laboratory

- | | | |
|--|-----------|------------------------|
| • Asmeron Hagos – Visiting student | 1998 | GA Tech Ph.D. graduate |
| • Magnus Melander – Visiting: Licentiate Student | 1998-1999 | Stora-Enso |

Ph.D. Students Supervised	Graduation Date	Post-Graduate Employment
• Peter M. Froass	1997	International Paper
• David Barzyk	1997	Georgia Pacific Company
• Jim Sealey	1998	First Quality
• Troy Runge	1998	University of Wisconsin
• Kaaren Haynes	1999	Hollingsworth & Vose, Co.
• Michael Zawadzki	1999	Lorillard Tobacco Co.
• Fadi S. Chakar	2000	Appleton Ideas Company
• Richard Chandra	2003	University of British Columb
• Lorraine C. Vander Wielen	2004	Appleton Ideas Company
• Thomas Dyer	2004	Kimberly Clark Corporation
• Kristina Knutson	2004	GA Tech Post-Doctoral Fellow
• Bassem Hallac	2011	HCl Cleantech
• Mate Nagy	2009	Hollingsworth & Vose, Co.
• Suteera Witayakran	2008	Kasetsart University
• Dongcheng Zhang	2006	Agrivida
• Rob Lowe	2007	Nalco Company
• Cameron Thomson	2007	MeadWestvaco
• Zheng Dang	2007	American Process
• Zhoujian Hu	2012	Postdoc Fellow NCSU
• Yang Li	2012	University of Texas
• Kósa Mátyás	2012	Renmatix
• Dash Rajalaxmi	2012	KCC
• Lee Goetz	2012	Contact Technologies, Inc.
• Seokwon Jung	2012	Samsung, S. Korea
• Amit Saxena	2013	Post-Doctoral Fellow, India
• Ben Haoxi	2013	Post-Doctoral Fellow, NREL
• Fan Hu	2014	Research Chemist, Revlon
• Qining Sun	2014	Georgia Pacific
• Xianzhi, Meng	2015	Post-Doctoral Fellow, UTK
• Tyrone Wells	2014	Bechetal
• Mark Cannetlli	2017	Renmatix
• Allison Tolbert	2017	Wofford College
• Hannah Akinosho	2017	Johnson- Johnson

UTK Graduate Supervising Activities

Student	Graduation Date	Post-Graduate Position
• Tais Lacerda Bezerra: MS, CHBE/UTK	2016	University of Alabama
• Naijia Hao CHBE/UTK	2019	LANL
• Liang Luna CHBE/UTK	2021	CRC, UTIA
• Shuyang Zhang CHBE/UTK	2023	
• Nathan Bryant CHBE/UTK	2023	
• John Austin Conte CHBE/UTK	2024	
• Rohit Kousika CHBE/UTK	2026	

- Peter Kibebe Karoki CHBE/UTK 2026
- Zhaohong Xiu CHBE/UTK 2026

Thesis Opponent

- Invited by Prof. David Lokhat, Student name Adeolu Abiodun Awoyale, Thesis title “Bioethanol Production From Excess Food Crops In Nigeria: Process Design, Optimization, and Techno-Economic Analysis.” School of Chemical Engineering University of KwaZulu-Natal (2021)
- Invited by Prof. Dr. Magda Ali Akl, Analytical Chemistry, Student name Wael Ibrahim, Thesis title "Studies on Modifications of Some Selected Natural Fibers for the Removal of Some Environmental Pollutants." Chemistry Department, Faculty of Science, Mansoura University, Mansoura, Egypt (2020)
- Invited by Professor M. Monier, Student name: Wael Mohamed Ibrahim Ali, Thesis title: "Studies on Modifications of Some Selected Natural Fibers for the Removal of Some Environmental Pollutants." Chemistry Department, Faculty of Science, Mansoura University, Mansoura, Egypt (2020).
- Invited by Assistant Professor Martin Lawokoi/Royal Institute of Technology, to be an external opponent to the Ph.D. defense of Nicola Giummarella “Fundamental Aspects of Lignin Carbohydrate Complexes (LCC). Mechanisms, Recalcitrance, and Material Concepts” (2018).
- Invited by Professor Hans Theliander/Chalmers University of Technology, to be an external opponent to the Ph.D. defense of Huyen Nguyen Lyckeskog “Hydrothermal Liquefaction of Lignin into Bio-Oil Influence of the Reaction Conditions and Stability of the Bio-Oil Produced” (2016).
- Invited by Professor Tapani Vuorinen/Aalto University, to be an external opponent to the Ph.D. defense of Ville Pihlajaniemi titled “Pretreatment categories, process alternatives and material characteristics in enzymatic hydrolysis of lignocellulose” (2016).
- External Ph.D. thesis reviewer for Amit Kumar" for the award of Ph.D. degree in Department of Paper Technology, Indian Institute of Technology Roorkee, ROORKEE - 247 667, Uttarakhand, India (2015).
- Invited by Professor H. Theliander/Chalmers University of Technology, to be an external opponent to the Ph.D. defense of Kristoffer Lund titled “Pulp fibres in absorption applications Modifications and properties (2013).
- Invited by Professor G. Gunnar Henriksson to be an external opponent to the Ph.D. defense of Dimitri Areskogh thesis titled “Structural Modifications of Lignosulphonates ” at the Royal Institute of Technology, School of Chemical Science and Engineering, Stockholm, Sweden (2011).
- Invited by Professor J. Saddler, University of British Columbia, Canada to be a member of the external reviewer board for Ph.D. thesis by Seiji Nakagame, titled “The Influence of Lignin on the Enzymatic Hydrolysis of Pretreated Biomass Substrates.” (2010).
- Invited by Professor Eva Malmström, Royal Institute of Technology, Fibre and Polymer Technology, Stockholm, Sweden KTH as member of external reviewer board for Ph.D. thesis by Hanna Lönnberg, titled “Ring-Opening Polymerization from Cellulose for Biocomposites Applications.” (2009).
- Ph.D. opponent for Ali Moosavifar, thesis titled: “Lignin Extraction from Black Liquor: Properties of the Liquors and Sulphur Content in the Lignin”, Chalmers University of

Technology, Forest Products and Chemical Engineering Dept Chemical and Biological Engineering (2008).

- Participated in Ph.D. defence of Henrik Wallmo, thesis titled “Lignin Extraction from Black Liquor: Precipitation, Filtration and Washing”; and Ph.D. defence of Johannes Bogren, thesis titled “Further Insights into Kraft Cooking Kinetics,” Chalmers University of Technology, Forest Products and Chemical Engineering Dept Chemical and Biological Engineering (2008).
- Invited by Professor Kristina Oksman as an opponent for Ph.D. thesis by L. T. Petersson, titled “Biopolymer-Based Nanocomposites – A Comparison between Renewable Cellulose Reinforcements and Layered Silicates” Department of Engineering and Design and Materials, Norwegian University of Science and Technology (2007).
- Invited by Associate Professor J.F. Kadla as an external reviewer for Ph.D. thesis by Yong Sik Kim titled “Study of Polyoxometalate (POM) Reaction Mechanism and Kinetics with Lignin and Model Compounds” Department of Forestry, University of British Columbia (2007).
- Invited by Professor W.F. Boman to be an external opponent to Licentiate defense of Lotta Utterberg, thesis title “Oxidative Degradation of Diastereomers of β -O-4 Lignin Model Compound and Heterologous Expression of Trameters veriscolor Laccase” at Karlstad University, Karlstad, Sweden (2006).
- Invited by Professor G. Gellerstedt to be an external opponent to the Ph.D. defense of Waleed Wafa Al-Dajani, thesis title “Bleachability of Alkaline Pulps” at the Royal Institute of Technology, Department of Pulp and Paper Chemistry and Technology, Stockholm, Sweden (2001).
- Invited by Professor R. Ede to be external opponent to the Ph.D. defense of Nicole More, thesis title “Structural Changes to Pinus Radiata Wood Lignin during Kraft Pulping and Bleaching” at the University of Waikato, Chemistry Department, Hamilton, New Zealand (1999).
- Invited by Professor G. Gellerstedt to be an external opponent to the Ph.D. defense of Eva Johansson, thesis title “The Effect of Oxygen on the Degradation of Lignin Model Compounds and Residual Lignin” at the Royal Institute of Technology, Department of Pulp and Paper Chemistry and Technology, Stockholm, Sweden (1997).

- **Postdoctoral Research Fellows Supervised by Ragauskas**

Postdoctoral Fellow	Period of Residence	Post-Status
• Dr. Daphne Santiago	1993-1994	FDA
• Dr. Lilly C. Harvey	1993-1994	Agnes Scott College
• Dr. Xiaoqi Pan	1992-1995	Alberta Research Council
• Dr. J. Brambila	1994-1995	--
• Dr. M. Hogjat	1994-1995	--
• Dr. Charles Cook	1995-1997	Oxychem, NY
• Dr. William Lin	1996-1997	NREL, CO
• Dr. B. Dhasmana	1997-1998	Halifax Community College, NC
• Dr. Cang Li	1997-1999	Research Superv., Selecto Inc.
• Dr. P. Agrawal	1998-1999	ACS Abstract Services

• Dr. A. Boasman	1999-2000	SP Newsprint Co.
• Dr. Rallming Yang	1999-2001	IPST@GT Research Services
• Dr. Yunqiao Pu	2000-2014	IPST@GT
	2015-Present	ORNL
• Dr. Dongho Kim	2002-Present	GA Tech
• Dr. Z. Feng	2001-2003	McMaster University
• Dr. Q. Hoe	2003-2004	Professor and Director of Tianjin Key Laboratory of Pulp & Paper Engineering, Tianjin University of Science and Technology, Tianjin, China
• Dr. Eric Johansson	2004-2005	Sweden Consultant
• Dr. Kristina Knutson	2005-2008	Gwinnett Technical College
• Dr. J. Zhang	2004-2010	Consultant
• Dr. Nan Jiang	2004-2011	Baze Chemical
• Dr. Runqing Ou	2005-2006	Nei Corp
• Dr. Weiping Ban	2006	Dalian Institute Light Industry, Dalian, China
• Dr. Poulomi Sannigrahi	2006-2011	Conoco Phillips
• Dr. Kasi David	2007-2011	Clark Atlanta University
• Dr. Richel Samuel	2008-2012	Polyglass USA
• Dr. Hongjia Li	2008	Clark Atlanta University
• Dr. Marcus Foston	2008-2012	Washington University
• Dr. Christopher Hubbell	2009-2012	Ciba
• Dr. Liqun Wang	2009-2011	FDA
• Dr. C. Shilin Cao	2009-2011	GA Tech
• Dr. Gang Hu	2010-2011	Clark Atlanta University
• Dr. Carlina Cateto	2010-2012	ExxonMobil
• Dr. F. Hunang	2010-2014	Chemistry, GA Tech
• Dr. S. Nair	2012-2014	University Toronto
• Dr. Garima Bali	2012-2014	Airgas
• Dr. Jung Seokwon	2013-2014	Samsung
• Dr. Thomas Moore	2015-2016	UTK
• Dr. S. Tanneru	2015	ChBE, UTK
• Dr. Qining Sun	2015-2016	Hexion Inc.
• Dr. Mi Li	2015-2020	ORNL/UTK
• Dr. Chang G. Yoo	2015-2018	SUNY/ESF
• Dr. Rosemary Le	2015-2017	UTK
• Dr. Xianzhi Meng	2016-Present	ChBE, UTK
• Dr. Tyron Wells	2015-2016	Bechtel
• Dr. Kristina Mahan	2016-2017	PNNL
• Dr. Partha Das	2015-2017	Evonik Industries
• Dr. Yun-Yan. Wang	2017-Present	
• Dr. Sam Bhagia	2017-Present	ORNL

- Dr. Somnath Shinde 2017-2018 PNNL
- Dr. Y. Wang 2022 -

VISITING RESEARCHERS/STUDENTS

Researcher	Visiting Date	Position
Dr. S. Moe	1996-1997	Associate Professor, Norwegian University of Science and Technology, Norway
Dr. M. Paulsson	1997-1998	Researcher Eka Chem., Sweden
Dr. A. Suurnakki	1999	Researcher, VTT, Finland
Dr. D.H. Kim	1999-2014	Researcher, IPST
Martin Lund	2001	The Royal Veterinary and Agricultural University Chemistry Department, Denmark
Dr. F. Wolfaardt	2001	Research Officer Department of Microbiology and Biochemistry, University of Orange Free State, South Africa
Dr. S. Wang	2001	Professor, Depart. Bio-Technology Sugar Engineering Industry, Guangxi University, Nanning, Guangxi, China
Dr. P. Gatenholm	2005-2006	Professor, Department of Materials and Surface Chemistry, Chalmers University of Technology, Gothenburg, Sweden
A. Oudia	2005	Graduate Student, Departamento de Ciência, Universidade Beira Interior, Covilhã Portugal
Dr. C. Mohandass	2006-2007	Biological Oceanography Division National Institute of Oceanography Dona Paula, Goa-403004, India
Dr. J. Yan	2007	Department of Pulp and Papermaking, Guangdong Industry Technical College, Guangzhou 510300, P.R. China
Assist. Prof. N. Brosse	2008	Laboratoire d'Etude et de Recherche sur le Matériau Bois, Faculté des Sciences et Techniques, Nancy-Université, Bld des Aiguillettes, F-54500 Vandoeuvre-lès-Nancy, France
Carolina Jardim, Visiting student	2008-2009	Química da Madeira e Branqueamento Da Celulose, Laboratório de Celulose Papel Departamento de Engenharia

Elisabetta Aracr Visiting student	2009	Florestal Universidade Federal de Viçosa - MG Brasil Universitat Politècnica de Catalunya School of Industrial Aeronautic Eng. of Terrassa, Depart. Textile and Paper Engineering, Campus de Terrassa, Edifici TR4. C/Colom, 11. 08222 Terrassa, Spain
Wenjia Han Visiting student	2010	State Key Laboratory of Pulp and Paper Engineering, College of Light Industry & Food Sciences, South China University of Technology, Guangzhou, Guangdong Province, China
Yangmei Chen	2010	State Key Laboratory of Pulp and Paper Engineering, College of Light Industry & Food Sciences, South China University of Technology, Guangzhou, Guangdong Province, China
Christopher M. Conifer	2011	School of Chemistry Imperial College London London, England
Dr. Tobias Köhnke	2011-2012	Assistant Professor Chalmers University of Technology
Prof. Birinchi Kumar Das	2011-2012	Fulbright-Nehru Senior Res. Fellow Gauhati University, India
Dr. Monideepa Chakraborty	2011-2012	Fulbright-Nehru Senior Res. Fellow Gauhati University, India
Yandan Chen	2011-2012	Fujian Agriculture and Forestry University, China
Guo Chen	2011-2012	Department of Bioengineering and Biotechnology, Huaqiao University, Jimei AVE. 668, Xiamen, 361021, China
Jiebin Tang	2011-2012	China
Magdalena Parra Carrillo	2012	GENZ: Grupo de investigacion Enzimologia, Departamento de Bioquimica y Biologia Molecular-A Universidad de Murcia E-30071 Murcia, Spain
Qianjun Shaw	2012-2013	Professor, National Engineering Research Center of Wood-based Resource Utilization, China Dean of Undergraduate Academic Affairs, Zhejiang A&F University, China
Yiming Zhou	2012-2013	Ms. Yiming Zhou

Zhen Wei	2012-2013	State Key Laboratory of Pulp and Paper Engineering, South China University of Technology, Guangzhou, China College of Environmental Science and Engineering Hunan University No.2, Changsha, Hunan, 410082, China
Nagarajan Ponnurengam	2013-2014	Annamalai University, India Assistant Professor, Depart. Chem. Eng.
Weibing Wu	2014	College of Light Industry Science and Engineering, Nanjing Forestry University, China
Muzna Hashmi	2015	PhD Research Scholar, Department of Microbiology, Quaid-i-Azam University, Islamabad, Pakistan
Romina B. Stoffel	2016	Pulp and Paper Program- Institute of Materials of Misiones. Félix de Azara 1552, Postal Box: 3300, Posadas, Misiones, Argentina
Dr. Alok Satlewal	2016-2017	Research Manager, IOCL R&D Centre Haryana, India.
Dr. Lan Yao	2016-2017	School of Pulp & Paper Engineering, Hubei University of Technology, Wuhan 430068, China
Chen Huang	2017-2018	College of Chemical Engineering, Nanjing Forestry University, Nanjing City, Jiangsu Province, China
Dr. Na Liu	2016-2017	Key Lab of Pulp and Paper Science and Technology of Education Ministry of China, School of Papermaking and Plant Resources Engineering, Qilu University of Technology, 3501 Daxue Rd, Changqing, Jinan, Shandong, P.R. China
Kongu Lu	2017-2018	Yuquan Campus, Zhejiang University, Xihu district, Hangzhou, Zhejiang, China
Xiwen Wang	2017-2018	South China University of Technology, Wu Shan Road No. 381, Guangzhou, China
Jia Wang	2017-2018	Key Laboratory of Energy Thermal Conversion and Control of Ministry of Education, Southeast University, No.2 Sipailou, Xuanwu District, Nanjing, Jiangsu, China
Jinhua Ding	2017-2018	Department of Textile, Donghua

Juan He	2018	University, Shanghai, China Nanjing Forestry University Longpan Road, Nanjing 210037, China
Himanshu Patel	2018	Senior Research Fellow, CSIR-Central Salt and Marine Chemicals Research Institute, Takhteshwar, Vidhyanagar, Bhavnagar, Gujarat 364002, India.
Thaynara Coradini Pin	2018-19	Universidade Estadual de Campinas, Faculdade de Engenharia Quimica UNICAMP, Av. Albert Einstein, 500 - Cidade Universitaria, Campinas, Brazil
Chunxiao Gong	2018-19	Department of Geosciences and Natural Resource Management University of Copenhagen, Denmark
Yan Song	2019	State Key Laboratory of Biopoly- saccharide Fiber Forming and Eco- Textile, Qingdao University, Qingdao, Shandong, China
Yangmei Chen	2019	College of Natural Resources and Environment, South China Agricultural University, Guangzhou, China
Peitao Zhao	2019	China University of Mining and Technology, Jiangsu Province, PR China
Junhua Zhang	2019	College of Forestry, Northwest Agriculture and Forestry University, China
Yan Shang	2019	shangyan@dlut.edu.cn Dalian University of Technology
Peitao Zhao	2019	p.zhao@cumt.edu.cn China University of Mining and Technology
Yangmei Chen	2019	ymchen@scau.edu.cn, South China Agricultural University, China
Junhua Zhang	2019	junhuazhang@nwsuaf.edu.cn, Northwest A & F University, China
Zhi-Min Zhao	2021	Key Laboratory of Ecology and Resource Use of the Mongolian Plateau, Inner Mongolia University, Hohhot, 010021, China
Atanu Kumar Das	2022	Department of Forest Biomaterials and Technology, Swedish University of Agricultural Sciences, Umeå, Sweden
Anqi Ji	2022	Department of Chemical Engineering

SUNY College of Environmental
Science and Forestry, 304 Walters Hall,
1 Forestry Drive, Syracuse, 13210

Paul Dim

Department of Chemical Engineering
School of Infrastructure, Process
Engineering and Technology, Federal
University of Technology, P. M.B. 65,
Minna, Nigeria.

Evidence of Teaching Effectiveness



Review of Teaching Effectiveness at Chalmers University – May/July 2001

Dr. Magnus Paulsson

Assistant Professor

August 2, 2001

Professor Arthur J. Ragauskas visit to Chalmers University of Technology

Professor Arthur J. Ragauskas, Institute of Paper Science and Technology, was invited to be a guest lecturer for the Ph.D. course “Fibre Line”, held at the Department of Forest Products and Chemical Engineering, Chalmers University of Technology. The objective of the Ph.D. course was to give in-depth knowledge about modern pulping and bleaching processes with respect to process chemistry as well as chemical engineering principles of fiber line operations. Professor Ragauskas gave lectures dealing with the following topics:

- Structure of residual lignin in paper pulps after kraft pulping;
- Chemistry of lignin-removing and lignin-retaining bleaching;

- Kinetics of delignification;
- Process descriptions (layouts);
- Equipment used in bleaching plants;
- Environmental aspects of bleaching;
- New bleaching technologies (e.g., enzymes);
- Characterization of pulp.

The students also prepared reports under the supervision of Professor Ragauskas dealing with one of the topics above. Professor Ragauskas gave, as one of the leading researchers in the field of bleaching of paper pulps, an extensive coverage of the chemistry and physics of lignin-removing and lignin-retaining bleaching. Professor Ragauskas' lectures were well planned, logical, and very informative. The students greatly appreciated that Professor Ragauskas always had time to answer questions dealing with the topics of the Ph.D. course as well as questions related to the Ph.D. student's research interests. Professor Ragauskas' visit to the Department of Forest Products and Chemical Engineering has been a great success and it is an honour for us that Professor Ragauskas had the opportunity to share his extensive knowledge, in this and other research fields, with both students and faculty. We hope that Professor Ragauskas' visit will strengthen the bond between Chalmers University of Technology and the Institute of Paper Science and Technology.

Sincerely,
Dr. Magnus Paulsson

General Public Articles: Our biorefinery studies have been highlighted by +500 news agencies announcements. This outreach provides a touchstone from which students, the general public and business/policy makers can be engaged in the science and engineering of renewable energy and materials.

Addressing the Food or Fuel Challenge of Bioethanol - The Wall Street Journal - Tuesday January 16th 2007

Ethanol Could Fuel Rise in Corn

Growing Demand May Limit Supply For Poor Countries

By **PRASENJIT BHATTACHARYA**

Corn prices are likely to reach unprecedented highs in the next two to three years, as an ethanol boom in the U.S. is likely to limit corn's availability for food and feed use.

This has fueled concerns that corn, a staple food ingredient in many countries and widely used as feed in the poultry and livestock sectors, might become out of reach for poorer consumers, boosting food prices in general.

Soaring food prices could cause urban riots in scores of low-income countries that rely on grain imports, such as Indonesia, Egypt, Algeria, Nigeria and Mexico, said Lester Brown, founder of the Earth Policy Institute and author of a recent report about potential corn demand from the ethanol industry.

The report said the ethanol distilleries being built in the U.S. will need 139 million metric tons of corn by the 2008 harvest, far more than a U.S. Department of Agriculture estimate of the requirement, pegged at around 60 million tons.

"If the Earth Policy Institute estimate is at all close to the mark, the emerging competition between cars and people for grain will likely drive grain prices to levels never seen before," Mr. Brown said.

Apart from being the biggest corn grower, the U.S. is also the leading corn exporter. Since 2006, corn-importing countries

have become more dependent on U.S. corn as China cut back on exports amid increased domestic demand from its own ethanol industry and fears of a supply shortage.

Mr. Brown isn't alone in warning that an ethanol boom might lead to sharp rise in corn prices by creating a supply squeeze.

"If biofuels continue to expand globally, you can expect grain prices to move to their energy equivalent, until cellulose and other alternative-energy sources become commercially available," said Simon Bentley, analyst with LMC International, a commodities research firm based in the United Kingdom.

Mr. Bentley said that while sufficient land is available to expand corn output in the U.S. and Brazil, how such expansion will affect output of other crops, especially soybean, and corn prices, remains the key question.

According to a recent report by J.P. Morgan, average corn prices are expected to be about \$4.03 a bushel in 2007, up 61% from \$2.51 a bushel in 2006.

The most-active March contract on the Chicago Board of Trade closed at \$3.9650 a bushel Friday, up 55% from the \$2.5525 a bushel the contract traded at on the same day last year.

The J.P. Morgan report said the ethanol industry's growth calls for an additional 500 million to one billion bushels of corn every year.

While such a rapid rise in demand in itself will ensure high corn prices, the study added that any weather threat to the corn crop this year will be "met with record high prices."

China, a large producer and consumer of corn, is already taking measures to ensure domestic availability.

In December, the Chinese government stopped approving new corn-based ethanol plants.

ence, said the key to a sustainable biofuels industry is cheaper feedstock, not expensive corn.

"As demand for corn increases, so too will its prices. This will drive the ethanol industry to look for lower-cost feedstock and as these alternatives develop, price and demand will stabilize," Mr. Ragauskas said. He said the food-versus-fuel



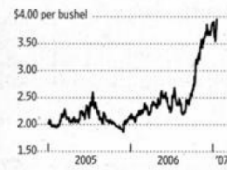
Corn Futures

Daily settlement price on the continuous front-month contract

Friday's close: **\$3.965**

Change since start of 2005, up 94%

Change since start of 2006, up 84%



Source: CBOT via Thomson Datastream
An Iowa cornfield

"As of now, it seems the government is reluctant to permit additional capacity for corn-based ethanol production, though existing corn-based ethanol plants are functioning normally," said Gu Lifeng, manager of the maize division at the state-run **Cofco Maize Co.**, based in Beijing.

Meanwhile, Chinese corn processors are ramping up their alcohol-production capacity, which can be converted into ethanol plants if the government relaxes its stance.

Arthur Ragauskas, associate professor at the Georgia Institute of Technology, who recently co-wrote a paper on biofuels in the industry journal *Sci-*

debate can generate new ideas if there is increased collaboration among academia, governments and the private sector to develop nonfood biomass—such as switchgrass, recycled waste materials and corn stovers, which is the part of the corn plant that is left over after harvest—into viable resources for biofuels.

The corn growers' lobby in the U.S., however, continues to argue that there will be enough corn in the long term to meet food, fuel and feed needs.

"All demand for corn—food, feed, fuel and exports—are being met. Farmers have always responded to price signals from the marketplace and historically we have had much more challenge with overproduction than shortage," said Rick Tolman, chief executive of the National Corn Growers Association.

"Market forces, not broad assumptions, are driving ethanol and corn markets...There is no conflict between [corn use for food and fuel], nor any pending crisis," Mr. Tolman said.



[Home](#) | [Inside Washington](#)

Bush Goes Into High Gear on Energy

By Bret Schulte Posted 1/24/07

President Bush laid out his most aggressive energy and environmental agenda to date—mentioning global warming for the first time in a State of the Union address, or any major speech.

According to the president, his plan "will help us to confront the challenge of global climate change." Though such words mark a dramatic step for Bush, energy analysts and environmentalists have responded with as much skepticism as encouragement.

Bush laid out an ambitious goal to, in his words, "reduce our dependence on foreign oil" while simultaneously reducing greenhouse gas emissions.

The White House is labeling the plan "20 in 10"—establishing a goal of reducing gasoline consumption by 20 percent in the next 10 years, which would be accomplished primarily by two acts.

The first is to reform fuel economy standards for cars to conserve 8.5 billion gallons of gasoline. The proposal has gotten muted applause from environmentalists, who are calling it a move in the right direction, though many believe the plan gives too much flexibility to automakers and could allow loopholes. The second is by far the more ambitious, calling for a major ratcheting-up of the Renewable Fuels Standard, the popular centerpiece of his Energy Policy Act of 2005.

In 2006, RFS mandated production of 4 billion gallons of ethanol, a goal that was handily topped by about a billion gallons. Benchmarks for coming years, analysts say, will be easily surpassed as well. The success of ethanol has policymakers giddy. For one, it has proved to be an economic boon to the American heartland.

Several members of Congress, including Senate Agriculture Committee stalwarts Tom Harkin of Iowa and Dick Lugar of Indiana, are calling for increased ethanol production to a staggering 60 billion gallons by 2030. Rumors swirled in Washington that Bush would call for the same in his State of the Union address last night.

Instead, he targeted a no less ambitious but shorter-term goal of 35 billion gallons of ethanol by 2017, displacing 15 percent of projected annual gasoline consumption. But that proposal faces the

same challenges, and on an accelerated timeline. Industry experts believe this country can produce about 15 billion gallons of ethanol from corn without disrupting other sectors of the economy, notably livestock producers that use corn and other feed.

Already, agricultural economist Lester Brown sees escalating food prices as a result of last year's record ethanol sales and predicts graver outcomes in the near future. Even if the market stabilizes, that leaves a 20 billion-gallon shortfall in ethanol supplies, which will have to be made up for with cellulosic ethanol, an alternative derived by other feedstocks such as switch grass, wood, and other plant matter. The problem is that for all intents and purposes, cellulosic ethanol doesn't exist yet, at least not commercially.

It can be produced with success in labs, but according to Arthur Ragauskas, a biofuels expert at Georgia Tech, "there are still significant challenges" to bringing it to market, namely cost and efficiency. While converting a starch like corn or sugar to ethanol is relatively simple, cellulosic matter poses a greater challenge because it requires "pretreatment" to make the material more reactive to the deconstruction enzymes that turn starch to glucose, which is easily turned into ethanol. make this cost effective. Ragauskas says new technology looks promising, but many experts believe it's unlikely that the fuel will go from zero to 20 billion in 10 years. It took the corn industry more than a decade to get to 1 billion gallons of ethanol capacity.

McGill Reporter. November 23, 2006 - Volume 39 Number 07

McGill REPORTER

Global warming needs global learning



Some of the world-class scientists who participated in the Macdonald Centenary Symposium included Rickey Yada, University of Guelph; Wes Warren, Washington University; Bert Drake, Smithsonian Environmental Research Center; Arthur Ragauskas, Georgia Institute of Technology; Gordon Young, UN Water Assessment Program; and Don Smith, Chair of McGill's Plant Science Department.

The most powerful tool available to combat global warming is not being used adequately, according to a panel of world-class environmental scientists. That tool is education. Without more education and public awareness the threat of global warming will not be adequately addressed, experts agree.

Six experts in fields such as water management, biofuels and animal-borne viruses (such as West Nile and Monkey Pox) were invited to Macdonald Campus on Nov. 3 for the symposium "A Biorevolution in the Next 100 Years," organized by Don Smith, James McGill Professor and chair of the Plant Science Department. The goal of the Macdonald Centenary Symposium was to look ahead to the environmental research challenges of the next 100 years.

Minister
of Natural Resources Canada



Ministre
des Ressources naturelles Canada

Ottawa, Canada K1A 0E4

OCT - 4 2006

Dr. Arthur J. Ragauskas
Professor
School of Chemistry and Biochemistry
Institute of Paper Science and Technology
Georgia Institute of Technology
500-10th Street North West
Atlanta, Georgia 30332-0620
U.S.A.

Dear Professor Ragauskas:

The Prime Minister's Office has forwarded to my attention a copy of your correspondence of May 23, 2006, regarding the article on use of wood products to produce biofuels.

Your article is of great interest to my department from both energy and forestry perspectives, and it comes at an important time as Canada is developing a national framework on renewable fuels. Canada's new government is committed to expanding the production and use of renewable transportation fuels such as ethanol and biodiesel. These fuels can diversify our energy mix, reduce harmful emissions and create new opportunities for both the agricultural and forestry sectors.

In Budget 2006, the new Government announced accelerating the Capital Cost Allowance for Forestry Bioenergy, by implementing an incentive for cogeneration systems in the pulp and paper industry that produce both thermal energy and electricity using a biomass residue from the pulping process referred to as "black liquor."

Looking forward, we have announced our intention to require an average of five percent renewable content in Canadian fuel by 2010. We are working closely with the provinces, territories and stakeholders on this initiative.

Canada

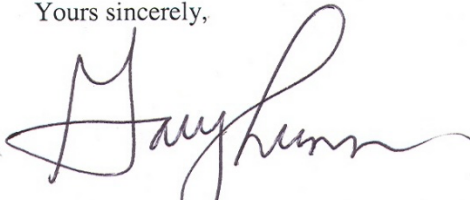
- 2 -

A historic meeting of Canada's ministers of environment, energy and agriculture took place in Regina on May 23, 2006. For the first time, federal, provincial and territorial ministers assembled for a dedicated meeting on this important subject. We discussed the opportunities this sector presents for Canadians and the path forward. This was a key step towards achieving our goal of five percent renewable content in Canadian fuels and we plan to hold another meeting on the national strategy in fall 2006. We have set an ambitious agenda, but working together, we know it can be achieved.

I have forwarded your article to officials in my department who work on renewable fuels, for their further consideration.

Thank you for writing on this important matter.

Yours sincerely,

A handwritten signature in black ink, appearing to read "Gary Lunn". The signature is fluid and cursive, with a large initial "G" and "L".

The Honourable Gary Lunn, P.C., M.P.

[Chemical & Engineering News](#)

Biotech's 'Perfect Storm'

April 30, 2007
Volume 85, Number 18
pp. 38-40

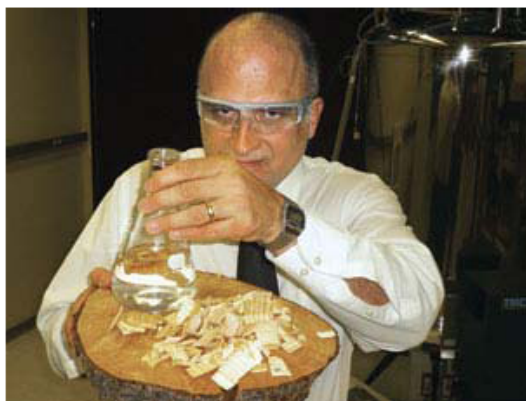
Opportunities for 2007 and Beyond

Biotech's 'Perfect Storm'

The push for energy independence may yield more bioenergy-related jobs

[Corinne A. Marasco](#)

The pursuit of biofuels has become a red-hot area for research, fed by a fervor that rivals the California Gold Rush. Academia, government, and industry are collaborating to find practical and affordable ways to produce and use biomass for energy. These R&D and production efforts cut a swath across specialties: chemistry, agricultural science, microbiology, materials science, biochemistry, and engineering, just to name a few.



Courtesy of Art Ragauskas

Chip power Cellulosic feedstocks such as wood chips can be used to produce ethanol.

In the 10 years since the publication of Sebastian Junger's book "The Perfect Storm," that term has come to refer to a set of factors that combine simultaneously to create a powerful event. Biotechnology appears to be brewing its own perfect storm—biotechnology breakthroughs, geopolitical tensions, falling inventories, and soaring oil prices are working together, creating conditions that just might churn out a more energy-independent nation.

The momentum behind the demand for alternative energy sources is strong, but what does it mean in terms of job opportunities for chemists? It seemed like a good time to ask the question, so C&EN contacted representatives from industry, government, and academia to find out what they see on the employment horizon. The early verdict: Biotechnology is entering an exciting time, and the employment opportunities in biofuels are about as good as they could be.

[Art Ragauskas](#), a professor in the [School of Chemistry & Biochemistry](#) at Georgia Institute of Technology, remembers that not too long ago, biomass chemistry wasn't so attractive. "Around 2000, there was a passionate subgroup interested in this field, but it wasn't mainstream science," he recalls.

United States Embassy Stockholm

Press Release



**2nd Generation Ethanol Expert Selected to Hold
Inaugural Alternative Energy Chair
at Chalmers University**

May 23, 2008

Arthur Ragauskas, Professor at the Georgia Institute of Technology, has been selected as the first holder of the Fulbright Distinguished Chair in Alternative Energy Technology at Chalmers University. The award includes a stipend of \$125,000, one of the largest in the 60-year history of the Fulbright Program. Funding support for the Distinguished Chair is being provided to the Fulbright Commission for Educational Exchange between the United States and Sweden by Marianne och Marcus Wallenbergs Stiftelse.

The Fulbright Distinguished Chair in Alternative Energy Technology has been created as part of the U.S. Embassy's One Big Thing initiative, fostering alternative energy cooperation between the U.S. and Sweden. "My work will contribute to innovative green chemistry sustainable technologies for the conversion of woody biomass to biofuels, bioenergy and in the next generation of biorefineries," said Dr. Ragauskas. "This will be accomplished by bringing together the best students, businesses, and academicians in the United States and Sweden to address the global bioenergy challenge of this millennium."

Chalmers University was selected to host the new position because the University is increasing its efforts in the area of developing fuels and chemicals from renewable resources. This development is driven by the need to conserve energy and a desire to produce more value-added products from wood and wood waste. Wood can be a source for fuel, plastics and advanced chemicals, as well as paper and lumber.

Michael Wood, U.S. Ambassador to Sweden, and Chalmers President Karin Markides led the effort to create the new Fulbright Chair. Ambassador Wood said, "Senator Fulbright's intention was to promote international good will through the exchange of students and professors. He may not have foreseen the issue of global warming or the importance of bioethanol, but his vision is alive and well in this new program. Dr. Ragauskas was selected from among a field of highly qualified applicants. I'm excited about the possibility that while at Chalmers, Professor Ragauskas may work on a technology breakthrough that allows people to drive cars on 2nd generation ethanol from non-food sources."

This Fulbright Chair will provide Dr. Art Ragauskas the opportunity to share his internationally recognized expertise in lignocellulosic biofuels with Swedish and international students, postdoctoral research fellows and faculty. He will develop a Swedish-American network to address society's need to develop sustainable cellulose biofuels and bioenergy. These interactions will be pursued by participating in formal classroom discussions, industry workshops, school presentations, and the development of unique web-based learning resources, including pod-casts. Dr. Ragauskas will be based in the Forest Products and Chemical Engineering department at Chalmers.

"My academic and research career has benefited from President Bush and his administration's vision and support of bioethanol," said Professor Ragauskas. "I am honored and humbled to now be able to expand this vision beyond Georgia Tech and the southeast U.S. to Sweden and Scandinavia."

Arthur Ragauskas is a Fellow of the International Academy of Wood Science and TAPPI. His research program at Georgia Tech is seeking to understand and exploit innovative sustainable bioresources. This multifaceted program seeks to develop new and improved applications for nature's premiere renewable biopolymers for biofuels, biopower and biomaterials. Ragauskas has published more than 220 papers, patents and conference proceedings. He has served on several advisory boards and review panels, including: European Commission Research Directorate; National Science Academy; J. Paul Getty Trust; Swedish Foundation for Strategic Research; VTT Technical Research Centre of Finland; and the Finnish Academy of Science. Ragauskas has been an invited visiting professor at Universidade da Beira Interior, Portugal; Chalmers University of Technology, Sweden; Royal Institute of

Miljö- och energisamarbetet mellan USA och Sverige är redan framgångsrikt. Företags- och universitetsetybyten leverar nu resultat som gör att ekonomisk utveckling också kan avvähjla människlighetens mest akuta klimat- och miljöproblem, skriver Art J Ragauskas, gästprofessor i alternativ energi på Chalmers i Göteborg.

Den gröna vägen leder till ekonomisk återhämtning

P recis som årstiderna vänder, har dagens ekonomi också genomgått enorma förändringar som har påverkat många av oss på ett personligt plan. Dessa förändringar har börjat verka ut i nya möjligheter och utmaningar för framtiden. Ett stort antal industriföretag lever nu av ett ökande intresse och behov av miljöteknik. Företagsutvecklingen sträcker sig över hela spektrum från småskaliga biokraft och oceller till nästa generations batterier, hållbara bioplast och flygförbränsel för bil och flygtransporter. Under några dagar denna vecka har Savannah, Georgia, stått värd för Svensk-amerikanska handelskonferensens 10-dagars som stötar miljösamarbetet mellan USA och Sverige. Som vid varje större konferens kommer många människor att ifrågasätta tron på att ekonomisk utveckling ska klara att möta miljöns påtryck samtidigt som Sverige har bevisat att det går att hålla båda i tak och ha den kvar. Under det första årstiodet ökade Sveriges BNP med 42 procent sam-



Art J. Ragauskas är Distinguished Fulbright Chair i Alternative Energy, professor emeritus vid Georgia Institute of Technology.

tidigt som de totala svenska koldioxidutsläppen minskade med 9 procent. Resultatet är ett verkligt bevis på att länder kan öka sin levnadstandard och samtidigt minska sina koldioxidutsläpp. I ett försök att låta av den gröna erfarenheten i Skandinavien har amerikanska ambassaden i Stockholm förpliktagit sig till en grön standard. Ambassaden arbetar med att identifiera potentiella svensk-amerikanska samarbeten inom grön energi och biobränslen. Ansträngningar har lett till klara framgångar på flera områden inom förvägssektorn, på regeringarnivå och inom företagen. Nya svensk-amerikanska företags-samarbeten om miljö och energi omfattar ett avtal mellan Nov Paper massa- och papperfabrik i Escanaba, Michigan och den svenska företaget Cheniere, som ska överföra sin förgärings-teknik till den amerikanska fabriken Swedish Biogas och staden Flint i Michigan som består av ett tillverknings biogas från stadens avloppsanläggning till stadens bussar och till att framtida biogas.

För att upprätthålla det svensk-amerikanska samarbetet inom miljöteknik, inrättades den amerikanska Fulbright-kommissionen en gästprofessor i alternativ energi vid Chalmers tekniska högskola i Göteborg. Jag fick äran att bli den första professor. Sedan jag kom till Sverige i augusti följde här jag mitt uppdrag i att utbilda en ny generation studenter som är intresserade av att främja den gröna industrirevolutionen. Jag har också fortsatt med forskningen inom innovativ teknik för att konvertera biomass till biobränslen och biogas och i framtiden integrerade skogspelletindustrier. Under dessa dagar har fokus legat på svensk-amerikanska möjligheter för miljöföretag inom områden som biogas, flygförbränsel och industriell design. Det är särskilt viktigt med tanke på de globala ansträngningarna som pågår från regeringarna att stoppa utsläppen av växthusgaserna och minska koldioxidutsläppen. Dessa företagsutbyten bygger på det bilaterala avtal som samarbete kring alternativ energi mellan USA och Sverige 2007. Det främjar gemensam forskning om biobränslen, samarbete kring biogasproduktion, transport och forskning inom bil-

industrin, minskande av kostnader för alternativ energi och förbättrad energi-ansvändning. Det går redan att se lovande tecken av samarbetet mellan Sverige och Georgia. Silvano, ett svensk-italienskföretag, erbjuder möjligheten att öppna sitt första försäljningskontor i Georgia för att övertyga av skogs- och biobränselindustrin där. Woodlands Alternative Fuels planerar att bygga en fabrik för att tillverka trädspelt och bitis i Thomas County som investering på 125 miljoner kronor som ska skapa 60 nya arbetstillfällen. Sköttligen planerar Oglethorpe Power Corp att investera ytterligare 6,5 miljarder kronor i fabriker som konverterar massa till elektricitet, vilket kräver ett stort antal investeringar i "grön" biobränselindustrin i ett område som flera svenska företag är ledande inom. I en annan sammankopplad värld där länder är beredda att vara med, gör de miljösamarbeten som svenska och amerikanska myndigheter uppmuntrar - och ser företag och universitet levererar - nya ekonomiska utvecklingsmöjligheter. Det bidrar till att möta en del av människlighetens mest akuta klimat och miljöproblem.

Verslo Zinios: Vilnius/Lithuanian Newspaper (June/2009)

Mokslininkų neįsąsūdina ilgas biodegalų kelias į rinką

Energija Galimybų yra, tereikia valios



ARTŪRAS BERAUTAS, LVJ Vilniaus technologijos forumo direktorius Chemijos ir biochemijos fakulteto profesorius. „Daug dabar idėjų, patys, tačiau universitetas bei verslo sferoje, rengiamas politikos, valstybės parama ir didesni mokslinis, patarimai reikalingi, kad bei retrukta gamtinei ir kitokiam pasauliui“ - JUTIMAS OKAZIJOS VEIKTO.

KONTAKTAS BERAUTAS verslo biuro direktorius. Nors tyrinami rodė, kad biodegalams augimas mokslinis kultūros turėjo pagrindinį vaidmenį. Tiesiogiai mokslas ir verslo pasaulio, tačiau mokslas perspektyvą visuomenės laikomas iš medienos, žuvis ir apskritai nevalgomų augalų dalia gamtos, o ne biochemijos medžiagai augimui ir ekologiškai. Vis dėlto J. Ragauskas akcentuoja, kad mokslas ir verslo pasaulio, tačiau mokslas perspektyvą visuomenės laikomas iš medienos, žuvis ir apskritai nevalgomų augalų dalia gamtos, o ne biochemijos medžiagai augimui ir ekologiškai.

Biodegalų gamyba Lietuvoje (tūkst. tonų)

Mėnuo	Biodegalai gaminti	Biodegalai gaminti	Kilavo	Ne-temperuoti degalų
2004	2,1	17	19	0,07
2005	2,1	0,9	22	1,1
2006	10,1	18,2	25,8	2,8
2007	24,8	15	30,8	4,3
2008	85	23	100	3-8
2009	100	46	230	10-13
2010*	100	100	256	16-18

Biodegalų perdirbimo gamybos negali būti atskiriamas nuo viso verslo pasaulio augalams gaminti. Tiekios tendencijos ne tik pradedo galvoti „pėtinimas“ JAV provincijai, bet yra patarimų teikti, mokslinis augalams gaminti. „Apdairiškė Lietuva turi daugybę gamtos išteklių. Mokslas, kurio nepasiekiamas patikimumas. Čia yra nepriklausoma galimybė daryti bet kuri biodegalams ir kartu auginti maistinius kultūras. Lietuva turi ir patikas augalams gaminti ir patikas maistiniams augalams gaminti. Tiesios patarimų teikti, mokslinis augalams gaminti, bet J. Ragauskas, išdėstęs ypač ir visuomenės mokslinį „atpažinti“ - kaip Lietuva kitame moksliniame.

WJ apskaita Naftos, su kurios produktais konkuruoja biodegalai, kalna svyruoja daug greičiau nei elektra. Tai gali būti motyvas beu-žinojimo, 7,8 JAV kalna-just apie 2,40 USD, bei laisvės centų pajėgumui biodegalams gaminti. Ties, idėjų ir rizikos kapitalui, verslininkams su mokslininkais dalyvaujančia naujosios mokslo sferoje, kaip dalyvaujančia, kad bent JAV šie nedaug. „JAV praplečė skirė technologiškos patarimai, valstybės parama - šia parama gerina situaciją, kad šia parama gerina situaciją. Biodegalų asociacija pradedama. J. Ragauskas atskleidžia technologijos šlovėms dar tik biodegalams laboratorijose, o ne mokslininkų mokslinėse laboratorijose. Bet atskleidžia mokslininkų mokslinėse laboratorijose. Kūreni apie biodegalų Lietuvos biodegalams gaminti, per kokį mokslininkų ir verslo pasaulio, tačiau mokslinis augalams gaminti, bet yra patarimų teikti, mokslinis augalams gaminti. „Apdairiškė Lietuva turi daugybę gamtos išteklių. Mokslas, kurio nepasiekiamas patikimumas. Čia yra nepriklausoma galimybė daryti bet kuri biodegalams ir kartu auginti maistinius kultūras. Lietuva turi ir patikas augalams gaminti ir patikas maistiniams augalams gaminti. Tiesios patarimų teikti, mokslinis augalams gaminti, bet J. Ragauskas, išdėstęs ypač ir visuomenės mokslinį „atpažinti“ - kaip Lietuva kitame moksliniame.

For additional details, see

http://www.ipst.gatech.edu/faculty_new/faculty_bios/ragauskas/ragauskas_news_articles.html

- Georgia's first wood-to-ethanol plant opens, in Atlanta Business Chronicle - by Dave Williams (August 2010)
- Going Green with Sweden Should Boost U.S.
- According to Reuters Special Topics analysis on Biofuels, one of the most-cited papers in the Research Front Map on Ethanol Biofuels is "The Path Forward for Biofuels and Biomaterials" (Ragauskas AJ, et al., Science 311[5760]: 484-9, 27 January 2006). For more information see:
 - <http://sciencewatch.com/sciencewatch/ana/st/biofuels/08octSTbioRag/>
 - GA Tech Fulbright Announcement
 - Ragauskas Award in GA Tech, The Whistle Vol. 33, No. 20, June 2, 2008
 - Dr. Art Ragauskas Wins Prestigious Research Management Award
 - Fulbright Distinguished Chair in Alternative Energy Technology/TAPPI News
 - CSREES NRI Grant Recipient Receives Fulbright Award
 - Georgia Pines May Play Role in Fuel of the Future
 - Advancing the Kraft BioRefinery in Biomass Magazine - October 2007
 - Update of Biomass to Biofuels Research: GA Tech - Ragauskas
 - Ragauskas Nanobioterials in Process Nordic
 - Georgia Tech Part of New Biofuel Research Center

TV/Radio Interviews

- News interview on GA PBS: "Georgia Weekly" Biofuels - Alternative Energy is Big Business these Days and Biofuels are Receiving a Lot of Attention. Dr. Arthur Ragauskas, Professor, Georgia Tech School of Chemistry and Biochemistry
 - See http://www.ipst.gatech.edu/faculty_new/faculty_bios/ragauskas/news_articles/georgia_weekly.html
- NBC News Footage of Art Ragauskas on the Subject of Biofuels from Wood Pulp
 - See http://www.ipst.gatech.edu/faculty_new/faculty_bios/ragauskas/ragauskas_news_articles.html