OLADIRAN FASINA, Ph.D., P.Eng

Professor and Head
Department of Biosystems Engineering
Director, Auburn University Rural Partnership Institute
Auburn University, Auburn, AL 36849
334-844-3574 (Office); E-mail: fasinoo@auburn.edu

EDUCATION

Ph.D.	Agricultural & Bioresource Engineering, University of Saskatchewan, Canada	1994
MS	Agricultural Engineering, Obafemi Awolowo University, Ile-Ife, Nigeria	1988
BS	Agricultural Engineering, Obafemi Awolowo University, Ile-Ife, Nigeria	1985

PROFESSIONAL EXPERIENCE

2017 - present	Head, Department of Biosystems Engineering, Auburn University
2023 - present	Director, Auburn University Rural Partnership Institute
2016 - 2016	Interim Associate Dean for Research, College of Agriculture and Interim Associate Director, Alabama Agricultural Experiment Station, Auburn University
2012- present	Professor, Dept. of Biosystems Engineering, Auburn University
2007-2012	Associate Professor, Dept. of Biosystems Engineering, Auburn University
2002-2007	Assistant Professor, Dept. of Biosystems Engineering, Auburn University
1998-2001	Food Process Engineer, USDA-ARS Food Science Research Unit, Raleigh, NC
1994-1998	Postdoctoral Fellow, University of Saskatchewan, Canada
1990-1994	Graduate Research Assistant, Agricultural and Bioresource Engineering, University of Saskatchewan, Canada
1988-1990	Assistant Professor, Obafemi Awolowo University, Ile-Ife, Nigeria

LEADERSHIP/ADMINSTRATIVE APPOINTMENTS/DEVELOPMENT PROGRAMS

2018	Emergenetics Leadership Training, Auburn University
2017-2018	Leadership for 21st Century (LEAD 21), Class XIII
2016	Academic Leadership - A Systems Approach. ASABE Annual Meeting, Orlando, F

HONORS AND AWARDS

Program Assessment Excellence Award. The award is from the Auburn University Provost Office. To recognize the Department of Biosystems Engineering for a long history in implementing exceptional assessment practices, and for commitment to program assessment, learning improvement, and student success.	2025
Award for Excellence in Writing Across the Curriculum. Led the department in receiving this award in recognition of its ongoing commitment to writing in the discipline and its strong support of Auburn University writing programs and initiatives.	2023
Selected in the Stanford's list of 2% scientists in the world. The list was assembled by the researchers at Stanford University and was published in PLOS Biology. The entire list can be accessed here.	2022 & 2020
Selected in the Stanford's list of 2% scientists in the world. The list was assembled by the researchers at Stanford University and was published in PLOS Biology. The entire list can be accessed here.	2020

Auburn University ePortfolio Faculty Cohort Award: One of five BSEN faculty recognized for exemplary leadership in promoting the implementation of ePortfolio, but also led the implementation and embedding of ePortfolio in BSEN.	2017
Outstanding Faculty Member, Biosystems Engineering Department: Annual award selected by BSEN students.	2017
Alumni Professor: Recognizes tenured faculty members for their exceptionally meritorious contributions to the institutional missions of Auburn University.	2015
Auburn University Excellence in Education Award for Biosystems Engineering: Fasina was one of three BSEN faculty that prepared the documentation for the award.	2015
Outstanding Reviewer Award: ASABE Processing Systems Technical Community.	2015
Fellow, ASABE: The rank of Fellow is awarded to less than 2% of ASABE members (national and international) with unusual professional distinction, outstanding and extraordinary qualifications and experience in the field of agricultural, food, or biological systems engineering.	2014
ASABE Evelyn E. Rosentreter Standards Award: Award recognizes individuals who have contributed exemplary leadership and service toward the generation, maintenance and administration of ASABE standards activities.	2014
Auburn University College Agriculture Academy of Fellows: Recognize faculty and staff who have achieved the highest honor of fellow in their field.	2014
Outstanding Faculty Member, Biosystems Engineering Department: Annual award selected by BSEN students.	2014
Auburn University College of Agriculture Project Team Award: To recognize superior accomplishments through collaboration effort between faculty and staff in the college. Award is for being part of the Center for Bioenergy and Bioproducts Team.	2014
Auburn University College of Agriculture Senior Faculty Research Award: Annual award to recognize faculty members with accumulated high merit of scholarship and exemplary research performance over time at associate/full professor level.	2013
ASABE Standard's Developer Award: Award presented in recognition of outstanding service for leadership during the revision of ANSI/ASABE S593.1 - Terminology and Definitions for Biomass Production, Harvesting and Collection, Storage, Processing, Conversion and Utilization.	2012
Auburn University College of Agriculture Grantsmanship Award.	2012
Auburn University President's Outstanding Collaborative Award: For being part of a bioenergy team whose collaborative efforts resulted in unique exemplary service and academic excellence within the university and the community.	2012
Winner (Faculty Category); Transatlantic Climate Bridge Network Competition. Sponsored by Auburn University and German Embassy. Award is for developing education and teaching materials and for promoting renewable energy and sustainability on Auburn University campus.	2010
Outstanding Reviewer Award: ASABE Food and Process Engineering Division.	2010
President Leadership Citation Award: For leadership concerning the development of ANSI/ASABE S593 May 2006, Terminology and Definitions for Biomass Production, Harvesting and Collection, Storage, Processing, Conversion and Utilization.	2007

ASABE Standard's Developer Award: For leadership concerning the development of ANSI/ASABE S593 May 2006, Terminology and Definitions for Biomass Production, Harvesting and Collection, Storage, Processing, Conversion and Utilization.	2007
Outstanding Faculty Member, Biosystems Engineering Department: Annual award selected by BSEN students.	2004
Junior Faculty Research Award: College of Agriculture, Auburn University.	2004
Adjunct Professor: Department of Food and Nutritional Sciences, Tuskegee University, Tuskegee, AL.	2003 - 2008
USDA-ARS Cash Award: Superior Performance in individual and team research in the application of food process engineering to vegetable processing and fermentation.	2000 & 1999
Canadian Government Commonwealth Scholar: University of Saskatchewan, Saskatoon, Canada.	1990-1994
Postgraduate Scholarship: Obafemi Awolowo University, Ile-Ife, Nigeria.	1986-1989

PROFESSIONAL AFFILIATIONS

- Member, American Society of Agricultural & Biological Engineers (ASABE). 1991-present.
- Professional Engineer, Association of Professional Engineer and Geoscientists of Saskatchewan, Province of Saskatchewan, Canada, 1996-present.
- Member, American Society of Engineering Education, 2019-present.
- Member, Order of Engineer (Canada: 1994-present, U.S.: 2011-present).
- Member, Institute of Food Technologist (IFT). 1996-present.
- Member, Alabama Section of ASABE. 2002-present.

INSTRUCTION - CURRENT COURSES

BSEN 7240*	Bulk Solids Storage, Handling and Transportation
BSEN 4240*	Bulk Biological Solids Behavior and Processing
BSEN 3310*	Hydraulic Transport in Biological Systems
BATM 2110*	Digital Analytics in Agriculture and Technology

INSTRUCTION - PREVIOUS COURSES TAUGHT AT AUBURN UNIVERSITY

BSEN 7220*	Renewable Energy Systems Design, Analysis and Applications
BSEN 5260/6260*	Renewable Energy in Biosystems Process Operations
BSEN 5550/6550	Principles of Food Processing Technology
BSEN 4310	Engineering Design (Capstone) for Biosystems (as Co-Instructor)
BSEN 4300	Professional Practice in Biosystems Engineering
BSEN 4240	Mechanical and Electrical Operations in Biosystems (sunset)
BSEN 3240*	Process Engineering in Biosystems

*courses created/significantly modified by Fasina

GRADUATE STUDENTS (graduated)

- Major Advisor: 1 PhD, 10 M.S.
- Committee Member: 15 PhD, 21 M.S

UNDERGRADUATE STUDENTS RESEARCH MENTORING

- 7 NSF-REU Students (Biomass/Bioenergy REU; Nanotechnology REU)

- 4 USDA-NIFA SEEDS Fellow
- 16 Student Internships

RESEARCH

Grants and Extramural Funds (total $51.5 million)

- Funded as PI/co-PI: $27.6 million
- Funded as Senior Investigator: $23.9 million

Research Interests and Expertise

- Biomass and Bioenergy
- Food Engineering
- Processing, Properties and Value-added Utilization of Biological Materials
- Mathematical Modeling of Bioprocess Operations
- Renewable Energy

Book Chapters

1. Fasina, O.O. 2010. Evaporator Types. In Encyclopedia of Agricultural and Food Engineering. Heldman D.R. (ed). 2nd edition. Marcel Dekker Inc., New York, NY. 424-426.
2. Hui, Y.H. (Editor), Clary, C. (Associate Editor), Farid, M. (Associate Editor), Fasina, O.O. (Associate Editor), Noomhorm, A. (Associate Editor), and Welti-Chanes, J. (Associate Editor) 2005. Food Drying: Science and Technology. Destech Publications, Lancaster, PA. Responsible for finding authors for five chapters and for finding reviewers for these chapters.
3. Fasina, O.O. 2003. Evaporator Types. In Encyclopedia of Agricultural and Food Engineering. Heldman D.R. (ed). Marcel Dekker Inc., New York, NY. 275-277.
4. Fasina, O.O. and Tyler, R.T. 2001. Infrared Heating of Biological Materials. In: Food Process Operations Modeling: Design and Analysis. Irudayaraj, J. (ed). Chapter 7. Marcel Dekker Inc., New York, NY. 189-224.

Recent Refereed Journal Articles (total of 113, Complete list in Google Scholar)

1. Zhang, C.,Poudel, I.,Mita, N., Kang, X, Annaji, M., Lee, Se., Panizzi, P., Shamsaei, N., Fasina, O., Babu, J., Arnold, R. 2025. Amikacin coated 3D-printed metal devices for prevention of postsurgical infections (PSIs). 2025. Pharmaceutics. 17, 911; https://doi.org/10.3390/pharmaceutics17070911.
2. Mita, N., Kang, X., Chen, P., Fasina, O., Howard, S., Bowden, A., McMullen, R. Surwawanshi, A., Babu, J. 2025. Injectable PLGA-based situ forming subconjunctival implant for sustained ocular delivery of ketotifen fumarate: Formulation, drug release, and biocompatibility studies. AAPS PharmSci Tech 26, article 153. https://doi.org/10.1208/s12249-025-03142-3.
3. Annaji, M., Mita, N., Poudel, I., Boddu, S., Fasina, O., and Babu, J. 3D Printing of drug-eluting implantable PLGA scaffolds for bone regeneration. Bioengineering. 2024, 11(3), 259.
4. Airbyawi, H., Annaji, M., Fasina, O., Palakurthi, S., Boddu, SHS, Hassan, N., Tiwari, A., Suryawanshi, A., Babu, J. 2024. Rapidly dissolving Trans-scleral microneedles for intraocular delivery of Cyclosporine A. AAPS PharmSciTech 25 (2).
5. Annaji, M., Mita, N. Heard, J., Kang, X., Poudel, I., Fasina, O., Baskarna, P., Boddu, S, Tiwari, A., Chen, P., and Babu, J. 2023. 3D Printed Capsaicin-loaded injectable implant for targeted delivery in obese patients. AAPS PharmaSciTech. 24 (200).

6. Poudel, I., Annaji, M., Wibowo, F., Arnold, R., Fasina, O., Via, B., Rangari, V., Peresin, M., Smith, F., Dhanasekaran, M., Tiwari, A., and Babu, J. 2022. Hispolon cyclodextrin complexes and their inclusion in liposomes for enhanced delivery in melanoma cell lines. International Journal of Molecular Sciences. International Journal of Molecular Sciences. 23:22, 144878, doi: 10.3390/ijms232214487.
7. Annaji, M., Mita, N., Rangari, S., Aldawsari, M., Saqr, A, Poudel, I., Fasina, O., and Babu, J. 2022. Enhanced topical co-delivery of acyclovir and lidocaince gel formulation across dermatomed human skin. AAPS PharmaSciTech. AAPS PharmaSciTech, 23(8): 305. doi: 10.1208/s12249-022-02458-8.
8. Oginni, O. and Fasina, O. 2022. Physical and frictional properties of loblolly pine residues. Biofuels. 13:8, 975-981.
9. Shelley*, H., Anaji, M., Grant, M., Fasina, O. and Babu, R.J. 2022. Sustained release biodegradable microneedles of difluprednate for delivery to posterior eye. Journal of Ocular Pharmacology and Therapeutics. doi.org/10.1089/jop/2021/0089.
10. Thaper*, R., Fulton, J., McDonald, T. and Fasina, O. 2022. Potential of fertilizer segregation during application using spinner disc spreader. Precision Agriculture 23: 83-100. doi.org/10.1007/s11119-021-09828-5.
11. Mahadevan*, R., Adhikari, S., Shakya, R. and Fasina, O. 2021. Influence of biomass organics on the functionality of H+ZSM-5 catalyst during in-situ catalytic fast pyrolysis. Catalysts, 11, 124. doi.org/10.3390/catal11010124.
12. Thaper* R., Fulton, J., Virk, S., McDonald, T. and Fasina, O. 2020. Effect of vane-shape on fertilizer distribution for a dual-disc spinner spreader. Applied Engng Agriculture 36: 743-751.
13. Petingco*, M., Casada, M., Ronaldo, M., Ambrose, K., Fasina, O., and Chen. Y. 2020. Influence of particle shape and contact parameters on DEM-simulated bulk density of wheat. Transactions of ASABE. 63: 1657-1672.

Grant Review Examples

Auburn University Intramural Grants Program, DOE (SBIR/STTR Phases 1 & 2, DOE-TCF), NSERC (Canada), USDA-NIFA (several programs), NASA.

Manuscript Review Examples

Biological Engineering. (ASABE); Biomass & Bioenergy; Bioresource Technology.; BioResources; Biosystems Engineering; Canadian Biosystems Engineering J.; Cereal Chemistry; Chemical Engng & Technology; CIGR Journal; Encyclopedia of Agric., Food & Biological Engng.; European J. Lipid Sci. & Technol.; Frontiers Energy Research – Bioenergy and Biofuels, Food Chemistry; Food Science & Technol. International; Fuel; Industrial Crops & Products; International J. Agric. Biological Engng.; International J. Food Properties; International J. Food Science & Technol.; J. Air & Waste Management; J. Analy. Appl. Pyrolysis; J. ASTM International; J. Food Engng; J. Food Process Engng.; J. Food Sci.; J. Mechanical Sci. Technol.; J. Microwave Power & Electromagnetic Energy; Lebensmittel-Wissenschaft und – Technologie (Food Science and Technology); Trans. ASABE/Applied Engng Agric.; Thermo. Acta; Waste Management, Wood Science and Technology.