

Poritosh Roy, PhD, P.Eng

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Citations: <http://scholar.google.ca/citations?user=4YiX0eMAAAAJ>

A highly motivated and dedicated professional with a solid understanding of food processing and preservation, agricultural machinery, renewable energy systems, agricultural resources management, agri-environment, industrial ecology, supply chain management, and international development. Has rich intellectual ability, and is capable of original thinking, planning, and organizing scientific studies. I have exceptional organizational and planning skills in a group or independently in the following areas.

- Food processing, packaging & preservation; food quality & distribution, sustainable food system
 - Biomass conversion and renewable energy
 - Biomaterial, biopolymer, biocomposite
 - Plastics and microplastics in ecosystems
 - Industrial symbiosis; Integrated solid waste management and value-added product development
 - Agri-industrial system and bioresource technology development
 - Life cycle assessment (LCA) and life cycle costing (LCC)
 - Farm power & machinery development
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Education

- 2014** **PhD** (Environmental Engineering), University of Guelph, Ontario, **Canada**.
Thesis: Life cycle assessment of ethanol produced from lignocellulosic biomass: Techno-economic and environmental evaluation (*process development, torrefaction & gasification, thermo-gravimetric analysis of biomass, characterization of biomass and biofuels, microbial culturing, bioreactor design and development, performance evaluation of bioreactor, maintenance and troubleshooting, syngas fermentation into ethanol, evaluation of the life cycle of ethanol, life cycle cost analysis*).
- 2004** **PhD** (Agricultural Sciences: Food Engineering), University of Tsukuba, Tsukuba, **Japan**.
Thesis: Improvement of energy requirement in the traditional parboiling process [*rice processing, energy consumption, resource conservation, evaluation of local parboiling processes (small and medium scale boiler and vessel systems), improvement of local parboiling equipment, operation, and maintenance, evaluation of the life cycle of rice and identify the most suitable process for the farm economy, environment, and health*].
- 1996** **M. Eng.** (Agricultural Machinery), Asian Institute of Technology, Pathumthani, **Thailand**.
Thesis: Development of a pineapple plant dressing machine (*design and development, review the engineering drawing, select the materials, follow-up the budget and project cost, manufacture individual parts and assemble them to build the dressing machine, modify the design and drawing as necessary, devised testing methodology and techniques, assessing the overall performance of the innovative machine, demonstrate to the farmers and industries, and make the machine operational for the farmers and industries*).
- 1992** **B. Eng.** (Agricultural Engineering: Farm Power and Machinery), Bangladesh Agricultural University, Mymensingh, **Bangladesh**.

Thesis: Development of seed-cum-fertilizer distributor (*design and development, reviewed the engineering drawing, selected the materials, followed up the budget and project cost, manufacturing individual parts and assembling them to build the machine, modifying the design and drawing as necessary, devised testing methodology and techniques, assessed the overall performance of the innovative machine, demonstrate to the farmers and industries, and make the machine operational for the farmers and industries*).

Work History

- May 2023-to date** **Adjunct Professor**, School of Engineering, University of Guelph; and **CEO** at the GreenTech AgriFood & Innovation Canada, Guelph, Ontario, Canada.
- Teach graduate and undergraduate courses and supervise students.
 - Manage the project (FarmFresh: Pay on your way) and coordinate with the stakeholders.
- Apr 2017–Apr 2023** **Sessional Lecturer/Special Graduate Faculty/ Research Associate /Lab Manager/** School of Engineering, University of Guelph; and **CEO** at the GreenTech AgriFood & Innovation Canada, Guelph, Ontario, Canada.
- Project management and LCA of biomass conversion processes; and prepare project proposals for research funding.
 - LCA of biomaterials from lignocellulosic biomass for automotive application and life cycle costing of biomaterials.
 - Managed laboratory equipment and assisted graduate students in their research activities.
 - Organized and conducted LCA workshop and LCA training for the Policymakers from OMAFRA and graduate students from the University of Guelph (number of participants was 15); University of Guelph, August 16-18, 2017; and December 18-21, 2017.
- July 2022–Dec 2022** **Lead Author**, Bioeconomy Roadmap Report, Sandler Consultancy, Halifax, Canada.
- Jan 2021–Dec 2021** **Project Leader** (for Seeding Our Food Future funded by Innovation Guelph), GreenTech Agrifood & Innovation Canada (GAIC), Guelph, Canada.
- Sep 2015– Mar 2017** **Post-doctoral Fellow/Project Manager**, Industrial Ecology Group, School of Environment, Enterprise & Development, University of Waterloo, Ontario, Canada.
- Project management, LCA & LCC of biofuels, graduate student supervision, and conducted a workshop on Writing Literature Review.
- Sep 2014– Aug 2015** **Post-doctoral Fellow/Project Engineer**, School of Engineering, University of Guelph, Ontario, Canada.
- Syngas fermentation, improvement of gas-liquid mass transfer, development of bioreactor, coordinate graduate research at bioprocessing laboratory.
 - Coordinator for Graduate Teaching Assistant (GTA) (ENGG*3260 Thermodynamics; Fall 2014)
- Sep 2011–Aug 2014** **Graduate Research/Teaching Assistant/Work-Study**, School of Engineering/ Department of Food Science, University of Guelph, Canada.
- Teaching Assistant (Food*2620 Food Engineering Principles: Winter 2013)
 - Teaching Assistant (ENGG*3430 Heat and Mass Transfer: Winter 2014, 2013 & 2012)
 - Teaching Assistant (ENGG*3260 Thermodynamics: 2013 & 2012)

- Instructed tutorial classes, conducted lab experiments, graded the quizzes, mid-term and final exams, meeting with students and professors
- Instructed theory classes [Food*2620 Food Engineering Principles (Volunteered in the absence of regular instructor for two weeks) and ENGG*3430 Heat and Mass Transfer (Volunteered in the absence of regular instructor)]
- LCA and LCC of lignocellulosic ethanol
- Wrote scientific papers and attended professional conferences, meetings, etc.
- Assisted in field research and data collection (Summer 2012)

May 2004–Aug 2011 **Post-doctoral Researcher/Project Engineer;** Food Engineering Division, National Food Research Institute, Tsukuba, Japan.

- Conducted research in food processing, packaging, distribution, and food quality measurement.
- LCA and LCC for sustainable food processing and consumption.
- Wrote research proposals and scientific papers.
- Coordinated with different funding organizations and managed several projects
- Supervised intern students and attended professional conferences.

Jan 1998–Aug 1998 **Graduate Assistant,** Faculty of Engineering, University Putra, Serdang, Malaysia.

- Instructed in tutorial classes and graded weekly quizzes
- Wrote research proposal and attended the symposium

Sep 1996–Sep 1997 **Research Associate,** AFE/Energy Program, Asian Institute of Technology, Pathumthani 12120, Thailand.

- Designed, developed, and evaluated agricultural machinery.
- Assisted in research activities on biomass energy and wrote reports and scientific papers.
- Managed assigned projects and coordinated with the funding agencies.

Nov 1992–Nov 1994 **Research Engineer,** Farming System, and Environmental Studies, Bangladesh Agricultural University, Mymensingh, Bangladesh.

- Designed, developed, and evaluated agricultural machinery and wrote reports and scientific papers.
- Demonstrated the developed machine to farmers, extension workers, and policymakers, and industries.

Teaching Experience

- **Sessional Lecturer (F2023):** ENGG*6090 Application of Life Cycle Assessment (LCA); School of Engineering, University of Guelph.
- **Sessional Lecturer (S2023):** ENGG*6090 Application of Life Cycle Assessment (LCA); School of Engineering, University of Guelph.
- **Sessional Lecturer (W2023):** ENGG*6090 Application of Life Cycle Assessment (LCA); School of Engineering, University of Guelph.
- **Sessional Lecturer (W2023):** ENGG*3170 Biomaterials, School of Engineering, University of Guelph.
- **Sessional Lecturer (F2022):** ENGG*3160 Biological Engineering System II; School of Engineering, University of Guelph.
- **Sessional Lecturer (F2022):** ENGG*6090 Application of LCA; School of Engineering, University of Guelph.
- **Sessional Lecturer (S2022):** ENGG*6090 Application of LCA; School of Engineering, University of Guelph.

- **Sessional Lecturer** (W2022): ENGG*4070 Life Cycle Assessment for Sustainable Design; School of Engineering, University of Guelph.
- **Guest Lecturer**, Department of Chemical Engineering, Kunming University of Science and Technology, **China**. Product life cycle assessment (Guest lectures), (December 1-24, 2021; remote lectures).
- Bioenergy & Biofuels (ENGG*6340): Application of LCA, and SimaPro for Sustainable Energy Systems, School of Engineering, University of Guelph, **March 26**, 2018; **January 21**, 2019.
- Sustainable Energy Design (ENGG*4580): LCA for Sustainable Energy Design, **March 22**, 2018; **January 23**, 2019.
- Life Cycle Assessment for Engineers (ENGG*4070): School of Engineering, University of Guelph, **March 16** (Application of LCA Sustainable Agri-food Industry), 2018; **April 06, 2020** (online/Webex: LCA in Agri-food Industry).
- Design III (ENGG*3100): Introduction to LCA in Engineering Design, School of Engineering, University of Guelph, **March 8**, 2018.
- Application of LCA in Sustainable production and consumption, The workshop is organized by BRIL, School of Engineering, University of Guelph, **December 18-21**, 2017.
- Introduction to LCA, The workshop organized by BRIL, School of Engineering, University of Guelph, **October 16-18**, 2017.
- Writing Literature Review Workshop, School of Environment, Enterprise and Development, University of Waterloo, **November 6**, 2015.
- GTA Coordinator (ENGG*3260 Thermodynamics), **Fall 2014**, School of Engineering, University of Guelph.
- GTA (ENGG*3430 Heat and Mass Transfer), **Winter 2012, Winter 2013, and Winter 2014**, School of Engineering, University of Guelph.
- GTA (ENGG*3260 Thermodynamics), **Fall 2012 & Fall 2013**, School of Engineering, University of Guelph.
- Teaching Assistant and Guest Lectures (Food Engineering Principles), **Winter 2013**, School of Engineering, University of Guelph.
- National Food Research Institute, Tsukuba, Ibaraki, Japan (Life Cycle Assessment of Agro-industries for sustainable production and consumption), **August 24**, 2011.
- National Agriculture and Food Research Organization, Tsukuba, Ibaraki, Japan (Life Cycle Assessment of Agro-industries), **December 22**, 2010.
- National Institute for Agro-Environmental Sciences, Tsukuba, Ibaraki, Japan (Life Cycle Assessment of Global Food Supply Chain for Sustainable consumption).
- National Food Research Institute, Tsukuba, Ibaraki, Japan (A Review of Life Cycle Assessment on some Food Products), **November 24**, 2006.
- University of Tsukuba, Ibaraki, Japan (Life Cycle Assessment of Food Supply Systems for Sustainable Consumption), **November 19**, 2004.
- Application of renewable energy in rice processing industry in Indian subcontinent: Environmental and economic aspects, University of Tsukuba, Japan, 2004.

Supervision/Committee member

<i>Name</i>	<i>Degree</i>	<i>Thesis</i>	<i>Period</i>
5. Shatha Nassef	PhD	Application of the Life Cycle Assessment Tool in the Domestic Refrigeration Industry: Developing a prototype for magnetic refrigeration	2019-2022
4. Akul Bhatt	PhD	Life Cycle Environmental and Economic Assessment of Ontario's Sheep Industry	2020-2023
3. Tara Allohverdi	M.Eng	Soil Enhancement and Effect of Biochar on the Growth of Soybean (<i>Glycine max L.</i>)	2020-2021
2. Mary "Mal" Hedrick	M. Eng	Biodegradable Bioblends: A Study of Fabrication and Life Cycle Assessment of Blended Biopolymers as Sustainable Material for Packaging Applications	2019-2020
1. Debela Tesfaye Tadele	M.Eng	Environmental Life Cycle Assessment of Biomaterials and Bio-Composites for Automotive Components: A Comparison between Talc and Biochar Reinforced Polypropylene Composites	2018-2019

Agri-industrial system development projects

Year	Project	Funding Organization	Amount
2023-till date	FarmFresh: Pay on your way	Wood Development Group, 5068 Whitelaw Road, Guelph, ON, N1H 6J3	In-kind support
2021	SOFF: Adoptable Smart Urban Agriculture (ASUA)	Innovation Guelph (IG), 361 Southgate Drive, Guelph, Ontario N1G 3M5	\$5,000 + in-kind support

Training

- Foundations of Project Management II, MITACS, University of Guelph, Ontario, Canada, March 28-29, 2016.
- CBM-CFS3 Technical Training Workshop, The Carbon Accounting Team of the Canadian Forest Service, Toronto, Ontario, Canada, March 15-17, 2016.
- Teaching Development Workshop, Centre for Teaching Excellence, University of Waterloo, Ontario, Canada, November 9-13, 2015.
- Foundations of Project Management I, MITACS, University of Guelph, Ontario, Canada, October 27-28, 2015.
- Graduate Student University Teaching Conference (August 29, 2013), University of Guelph, Canada.
- Research and Project Management (Winter 2013), The Graduate Learning Initiative, University of Guelph, Canada.
- Teaching Assistant Development Workshop, University of Guelph, Canada.
- The EAL Communicating Clearly Course (Winter 2013), Learning Commons, McLaughlin Library, University of Guelph, Canada.
- WHMIS (Jan 2016; Sep 2013), Laboratory safety (Sep 2013), Introductory biosafety (April 2014), University of Guelph, Canada.

Laboratory Equipment Operation and Training

- Texture Analyzer
- Thermo Gravimetric Analyzer (TGA)
- Fourier Transform Infrared Spectroscopy (FT-IR)
- High-Performance Liquid Chromatography (HPLC)

- Gas Chromatography (GC)
- Gas Chromatography-Mass Spectrometry (GC-MS)
- Flash 2000, Organic CHNS-O Organic Elemental Analyzer
- Bomb Calorimeter
- Parr reactor [Hydrothermal Carbonization (HTC)]
- GLO Pyrolyzer

Research Impact and Citation (Google)

<i>Citation indices</i>	<i>All</i>	<i>Since 2019</i>
Citations	3617	1889
h-index	28	21
i10-index	45	34

Selected Journal where major research papers are published

<i>Name of Journals</i>	<i>No. of papers</i>	<i>5 years impact factor</i>
Renewable and Sustainable Energy Reviews	2	16.8
Journal of Cleaner Production	2	11.1
Bioresource Technology	3	11.9
Journal of Colloid and Interface Science	1	9.9
Journal of Environmental Management	1	8.9
Journal of Food Engineering	8	6.2
Biomass and Bioenergy	1	5.8
Journal of the Energy Institute	1	6.5
Energies	2	3.3
Clean Technologies and Environmental Policy	2	3.9
International Journal of Environmental Research and Public Health	1	4.6
Molecules	1	4.9
International Journal of Thermofluids	1	9.5
Environmental Science: Advances	2	
ACS Environmental Au	2	
Composites Part C: Open Access	1	4.2

Publications: Peer Reviewed

Journal Articles:

1. Mohanty, AKM., Vivekanandhan, S., Tripathi, N., **Roy, P.**, Snowdon, M., Drzal, LT., Misra, M., 2023. Sustainable composites for lightweight and flame retardant parts for electric vehicles to boost climate benefits: A perspective, Journal of Composites Part C: Open Access, 100380.
2. Bozorgi, M., **Roy, P.**, Siddique, ARM., Venkateshwar, K., Tasnim, S., & Mahmud, S., 2023. Experimental investigation and life cycle assessment of a phase change material (PCM) based thermoelectric (TE) refrigerator. International Journal of Thermofluids, 19: 100394.

3. **Roy, P.**, Mohanty, A.K., & Misra, M., 2023. Prospects of carbon capture, utilization and storage for mitigating climate change. *Environmental Science: Advances*, 2: 409–423.
4. **Roy, P.**, Mohanty, A.K., Dick, P., & Misra, M., 2023. A review on challenges and choices for food waste valorization: Environmental and economic impacts. *ACS Environmental Au*, 3(2): 58–75.
5. **Roy, P.**, Mohanty, A.K., & Misra, M., 2022. Microplastics in the ecosystems: Their implications and mitigation pathway. *Environmental Science: Advances*, 1(1): 9–29.
6. Allohverdi, T., Mohanty, A.K., **Roy, P.**, Misra, M., 2021. A review on current status of biochar uses in agriculture. *Molecules*, 26(18): 5584.
7. **Roy, P.**, Mohanty, A.K., Wagner, A., Sharif, S., Khalil, H., & Misra, M., 2021. Impacts of COVID-19 outbreak on the municipal solid waste (MSW) management: Now and beyond the pandemic. *ACS Environmental Au*, 1(1): 32–45.
8. **Roy, P.**, Lisa, A., Wang, T., Corradini, M.G., Fraser, E.G.D., Thimmanagari, M., Tiessan, M., Bali, A., Saharan, K.M., Mohanty, A.K., & Misra, M., 2021. Evolution of drinking straws and their environmental, economic and societal implications. *Journal of Cleaner Production*, 316(20): 128269.
9. **Roy, P.**, Dutta, A., & Gallant, J., 2020. Evaluation of the life cycle of treated and untreated biomass for horticulture and energy application. *Renewable & Sustainable Energy Reviews*, 132:110046.
10. **Roy, P.**, Defersha, F., Rodriguez-Uribe, A.; Misra, M., Mohanty, A.K., 2020. Evaluation of the life cycle of an automotive component produced from biocomposite. *Journal of Cleaner Production*, 273(10):123051.
11. Tadele, D., **Roy, P.**, Defersha, F., Misra, M., & Mohanty, A.K., 2020. A comparative life cycle assessment of talc and biochar reinforced composites for lightweight automotive parts. *Clean Technologies and Environmental Policy*, 22(3): 639–649.
12. **Roy, P.**, Tadele, D., Defersha, F., Misra, M., & Mohanty, A.K., 2019. Environmental and economic prospects of biomaterials in the automotive industry. *Clean Technologies and Environmental Policy*, 21(8): 1535–1548.
13. Tadele, D., **Roy, P.**, Defersha, F., Misra, M., & Mohanty, A.K., 2019. Life Cycle Assessment of renewable filler material (biochar) produced from perennial grass (*Miscanthus*). *AIMS Energy*, 7(4): 430–440.
14. **Roy, P.**, Dutta, A., & Gallant, J., 2018. Hydrothermal carbonization of peat moss and herbaceous biomass (*miscanthus*): A potential route for bioenergy, *Energies*, 11(2794): 1-14.
15. **Roy, P.**, Dutta, A., Acharya, B., & Deen, B., 2018. An Investigation of raw and torrefied lignocellulosic biomasses with CaO during combustion. *Journal of the Energy Institute*, 91(4), 584–594.
16. **Roy, P.**, & Dias, G., 2017. Prospects of pyrolysis technologies in bioenergy sector: A review. *Renewable & Sustainable Energy Reviews*, 77(September): 59–69.
17. **Roy, P.**, Dutta, A., & Chang, S., 2016. Development and evaluation of a functional bioreactor for CO fermentation into ethanol. *Bioresources and Bioprocessing*, 3: 4.
18. **Roy, P.**, Dutta, A., & Deen, B., 2015. Greenhouse gas emissions and production cost of ethanol produced from biosyngas fermentation process. *Bioresource Technology*, 192(September): 185–191.
19. **Roy, P.**, Dutta, A., & Deen, B., 2015. An approach to identify the suitable plant location for miscanthus based ethanol industry: A case study in Ontario, Canada. *Energies*, 8(9): 9266–9281.
20. **Roy, P.**, Dutta, A. & Deen, B., 2015. *Miscanthus*: A promising feedstock for ethanol industry in Ontario, Canada. *AIMS Energy*, 3(4): 562–575.
21. Orikasa, T., **Roy, P.**, Tokuyasu, K., Park, J., Ike, M., Kondo, M., Arai-Sanoh, Y., Inoue, T., Kojima, K., Nakamura, N., Koide, S., & Shiina, T., 2015. Evaluation of the life cycle of bioethanol produced from soft carbohydrate-rich and common rice straw in Japan including land use change. *Engineering in Agriculture, Environment and Food*, 8(3): 161–168.
22. Orikasa, T., **Roy, P.**, Tokuyasu, K., Nakamura, N., Koide, S., & Shiina, T., 2015. Effect of bioethanol conversion efficiency and ratio of rice paddy area to flatland on energy consumption and CO₂ emission of rice straw transport process in Japan. *Biosystems Engineering*, 133: 95–101.

23. Acharya, B., **Roy, P.**, & Dutta, A., 2015. Review on syngas fermentation processes for bioethanol. *Biofuels*, 1–14.
24. Orikasa, T., Nakamura, N., **Roy, P.**, Thammawong, M., Kaneta, T., Yoshida, M., Soga, A., Ohno, S., Niimi, T., Yokoyama, K., Nishio, M., Koide, S., & Shiina, T., 2014. Possibility of CO₂ emissions abatement by using newly developed bulk container for radish distribution process. *Journal of Packaging Science & Technology, Japan*, 23(4): 293–304.
25. **Roy, P.** & Dutta, A., 2013. Life cycle assessment of ethanol derived from sawdust. *Bioresource Technology*, 150(December): 407–411.
26. **Roy, P.** & Dutta, A., 2013. A review of life cycle of ethanol produced from biosyngas. *Bioethanol*, 1(1): 9–19.
27. Orikasa, T., Wu, L., **Roy, P.**, Muramatsu, Y., Yano, T., Shiina, T., & Tagawa, A., 2012. Vacuum drying characteristics of kiwifruit and analysis of drying shrinkage. *Journal of the Society of Agriculture Structure, Japan*, 43(4): 145–151.
28. **Roy, P.** & Dutta, A., 2012. Life cycle assessment of ethanol produced from wheat straw. *Journal of Biobased Materials and Bioenergy*, 6(3): 276–282.
29. **Roy, P.**, Orikasa, T., Tokuyasu, K., Nakamura, N., & Shiina, T., 2012. Evaluation of the life cycle of bioethanol produced from rice straws. *Bioresource Technology*, 110(April): 239–244.
30. **Roy, P.**, Tokuyasu, K., Orikasa, T., Nakamura, N., & Shiina, T., 2012. A techno-economic and environmental evaluation of the life cycle of bioethanol produced from rice straw by RT-CaCCO process. *Biomass and Bioenergy*, 37(2): 188–195.
31. Thammawong, M., Usuda, H., Nei, D., Umehara, H., Nakamura, N., **Roy, P.**, Satake, T., & Shiina, T., 2012. Ethylene production rate: A sensitive indicator for determining the occurrence of mechanical stress in tomato fruits. *Food Preservation Science*, 38(3): 159–167.
32. **Roy, P.**, Orikasa, T., Thammawong, M., Nakamura, N., Xu, Q., & Shiina, T., 2012. Life cycle of meats: An opportunity to abate the greenhouse gas emission from meat industry in Japan. *Journal of Environmental Management*, 93(1): 218–224.
33. Orikasa, T., Yamada, T., Yano, T., Tagawa, A., **Roy, P.**, & Shiina, T., 2012. Analysis of CO₂ emission at Taihaku Campus, Miyagi University for constructing eco-campus. *Journal of Life Cycle Assessment, Japan*.
34. **Roy, P.**, Tokuyasu, K., Orikasa, T., Nakamura, N., & Shiina, T., 2012. A review of life cycle assessment (LCA) of bioethanol from lignocellulosic biomass. *Japan Agricultural Research Quarterly*, 46(1): 41–57.
35. **Roy, P.**, Orikasa, T., Okadome, H., Nakamura, N., and Shiina, T., 2011. Processing conditions, rice properties, health and environment. *International Journal of Environmental Research and Public Health* (Special Issue: *Biological and Agricultural Engineering*), 8(6): 1957–1976.
36. **Roy, P.**, Nei, D., Orikasa, T., Orikasa, T., Okadome, H., Thammawong, M., Nakamura, N., & Shiina, T., 2010. Cooking properties of different forms of rice cooked with an automatic induction heating system rice cooker. *Asian Journal of Food & Agro-Industry*, 3(4): 373–388.
37. Orikasa, T., **Roy, P.**, Nei, D., Nakamura, N., & Shiina, T., 2010. Possibility of CO₂ emission abatement of fresh produce distribution through wholesale market. *Journal of Miyagi University, School of Food, Agriculture and Environmental Sciences*, 4(1): 23–28.
38. Orikasa, T., Wu, L., Ando, Y., Muramatsu, Y., **Roy, P.**, Yano, T., Shiina, T., & Tagawa, A., 2010. Hot air drying characteristics of sweet potato using moisture sorption isotherm analysis and its quality changes during drying. *International Journal of Food Engineering*, 6(2): Article 12.

39. Xu, Q., Liu, Z., Nakajima, M., Ichikawa, S., Nakamura, N., **Roy, P.**, Okadome, H., & Shiina, T., 2010. Characterization of a soybean oil-based biosurfactant and evaluation of its ability to form microbubbles. *Bioresource Technology*, 101(10): 3711–3717.
40. Thammawong, M., Nei, D., **Roy, P.**, Nakamura, N., & Shiina, T., 2009. Characteristics of sugar content in different sections and harvest maturity of bamboo shoots. *HortScience*, 44(7):1941–1946.
41. Orikasa, T., Tokuyasu, K., Inoue, T., Kojima, K., **Roy, P.**, Nakamura, N., & Shiina, T., 2009. Effect of ethanol conversion efficiency on cost, CO₂ emission and energy balance in the bioethanol production system from rice straw. *Journal of the Japanese Society of Agricultural Machinery*, 71(5): 45–53.
42. **Roy, P.**, Ijiri, T., Nei, D., Orikasa, T., Okadome, H., Nakamura, N., & Shiina, T., 2009. Life cycle inventory (LCI) of different forms of rice consumed in households in Japan. *Journal of Food Engineering*, 91(1): 45–55.
43. **Roy, P.**, Nei, D., Orikasa, T., Xu, Q., Okadome, H., Nakamura, N., & Shiina, T., 2009. A review of life cycle Assessment (LCA) on some food products. *Journal of Food Engineering*, 90(1): 1–10.
44. Xu, Q., Nakajima, M., Ichikawa, S., Nakamura, N., **Roy, P.**, Okadome, H., & Shiina, T., 2009. Effects of surfactant and electrolyte concentrations on bubble formation and stabilization. *Journal of Colloid and Interface Science*, 332(1): 208–214.
45. Nei, D., Nakamura, N., **Roy, P.**, Orikasa, T., Kitazawa, H., Ishikawa, Y., & Shiina, T., 2008. Wavelet analysis of shock and vibration on the truck bed. *Packaging Technology and Science*, 21(8): 491–499.
46. Usuda, H., Nei, D., Kitagawa, M., Ito, Y., Nakamura, N., Ishikawa, Y., Umehara, H., **Roy, P.**, Okadome, H., Thammawong, M., Satake, T., & Shiina, T., 2008. The effect of dropping on *Le-ACS2* accumulation around the mechanically stressed site in tomato fruit. *Journal of the American Society for Horticultural Science*, 133(5): 717–727.
47. Orikasa, T., Shibata, T., Nei, D., **Roy, P.**, Nakamura, N., Shiina, T., & Tagawa, A., 2008. Microwave drying characteristics of sliced radish. *Journal of the Japanese Society for Food Science and Technology*, 55(7): 350–354.
48. **Roy, P.**, Ijiri, T., Okadome, H., Nei, D., Orikasa, Nakamura, N., & Shiina, T., 2008. Effect of processing condition on overall energy consumption and quality of rice. *Journal of Food Engineering*, 89(3): 343–348.
49. **Roy, P.**, Umehara, H., Nakamura, N., Nei, D., Orikasa, T., Kitazawa, H., Okadome, H., Ishikawa, Y., Iwakia, K., Kobayashi, M., & Shiina, T., 2008. Determination of physicochemical properties of chestnuts. *Journal of Food Engineering*, 87(4): 601–604.
50. **Roy, P.**, Nei, D., Okadome, H., Nakamura, N., Orikasa, T., & Shiina, T., 2008. Life cycle inventory analysis of fresh tomato distribution systems in Japan considering the quality aspect. *Journal of Food Engineering*, 86(2): 225–233.
51. **Roy, P.**, Shimizu, N., Okadome, H., Shiina, T., & Kimura, T., 2007. Life cycle of rice: Challenges and choices for Bangladesh. *Journal of Food Engineering*, 79(4): 1250–1255.
52. **Roy, P.**, Shimizu, N., Shiina, T., & Kimura, T., 2006. Energy consumption and cost analysis of local parboiling processes. *Journal of Food Engineering*, 76(4): 646–655.
53. **Roy, P.**, Shimizu, N., & Kimura, T., 2005. Life cycle inventory analysis of rice produced by local parboiling process. *Journal of the Japanese Society of Agricultural Machinery*, 67(1): 61–67.
54. **Roy, P.**, Shimizu, N., & Kimura, T., 2004. Energy conservation in cooking of milled raw and parboiled rice. *Food Science and Technology Research*, 10(2): 121–126.

55. Okadome, H., Nakamura, N., **Roy, P.**, & Shiina, T., 2004. Study on the simple texture-tracing method of root vegetable during distribution and cooking. *Journal of the Crop Science Society of Japan*, 73(2): 178–179.
56. **Roy, P.**, Shimizu, N., & Kimura, T., 2004. Effect of temperature distribution on the quality of parboiled rice produced by traditional parboiling process. *Food Science and Technology Research*, 10(3): 254–260.
57. **Roy, P.**, Shimizu, N., & Kimura, T., 2003. Energy consumption in local parboiling processes. *Journal of the Japanese Society of Agricultural Machinery*, 65(5): 133–141.
58. **Roy, P.**, Shimizu, N., Furuichi, S., & Kimura, T., 2003. Improvement of traditional parboiling process. *Journal of the Japanese Society of Agricultural Machinery*, 65(1): 159–166.
59. **Roy, P.**, Shimizu, N., & Kimura, T., 2002. Performance of the traditional parboiling process. *Journal of the South Pacific Agriculture*, 9(1 & 2): 28–37.
60. Islam, M.R., **Roy, P.**, Shimizu, N., & Kimura, T., 2002. Effect of processing conditions on physical properties of parboiled rice. *Food Science and Technology Research*, 8(2): 106–112.
61. **Roy, P.**, & Salokhe, V.M., 1999. Development of a power tiller-drawn pineapple plant dressing machine. *Journal of Agricultural Mechanization in Asia and Latin America*, 30(2): 59–62.
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2. **Roy, P.**, Mohanty, A.K., Alexis Wagner, A., Shayan SharifS; 4 Misra., Hamdy Khalil, H., Misra, M., 2021. Effects of COVID-19 pandemic on the municipal solid waste management. Rowan University, New Jersey, USA, June 23-25.
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4. Tadele, D., **Roy, P.**, Defersha, F., Misra, M., & Mohanty, A.K., 2018. A comparative life cycle assessment between talc and biochar filled reinforced polymer composite for lightweight automotive parts. International Symposium on Bioplastics, Biocomposites & Biorefining, Guelph, Canada, July 24-27.
5. Heidari, M., **Roy, P.**, Acharya, B., & Dutta, A., 2018. A Life Cycle Assessment (LCA) comparison of two new biomass treatment methods for power generation, 15th International Symposium on Bioplastics, Biocomposites & Biorefining (ISBBB 2018), Guelph, Canada, July 24-27.
6. **Roy, P.**, Dias, G., & Peter, F., 2016. Environmental and economic assessment of mobile pyrolysis for off-grid energy production. Advanced Biofuel Symposium, Vancouver, Canada, July 6-8.
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45. **Roy, P.**, Shimizu, N., & Kimura, T., 2002. Production cost of parboiled rice in local parboiling processes. Proceeding of the 61st Japanese Society of Agricultural Machinery Annual Meeting, Iwate, Japan, September 17–19.
46. **Roy, P.**, Shimizu, N., & Kimura, T., 2002. Effect of energy consumption on parboiling (Poster). Proceeding of the 3rd Conference of the Japan Society of Food Engineering, Tokyo, Japan, August 6–7.
47. **Roy, P.**, Shimizu, N., & Kimura, T., 2002. Biomass consumption in local parboiling processes. Proceeding of the ASAE Annual International Meeting (Paper No.: 026199), Chicago, USA, July 28–31.
48. Kimura, T., Shimizu, N., Islam, R., & **Roy, P.**, 2001. Effect of processing conditions on physico-chemical properties for low cost production of “High Quality” parboiled rice. Abstracts of the 11th World Congress of Food Science and Technology, Seoul, Korea, April 22–27.
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53. **Roy, P.**, & Ahmad, D., 1998. Status of mechanization in sweet-potato production. Workshop on Root Crops, Sri Kembangan, Malaysia, September 14–15.
54. Bhattacharya, S.C., & **Roy, P.**, 1997. A Review of residue carbonization and recent advances. Proceeding of the 2nd ASEAN Renewable Energy Conference (Volume II), Phuket, Thailand, November 5–9.

Scholarship/Fellowship

- *Ontario Government Scholarship (OGS)*, University of Guelph, Canada, 2013–2014.
- *Ontario Government Scholarship (OGS)*, University of Guelph, Canada, 2012–2013.
- *The Japan Society for the Promotion of Science (JSPS) Fellowship*, Food Engineering Division, National Food Research Institute, Tsukuba, Japan, 2006–2008.
- *The Japanese Government Scholarship (Monbukagakusho)*, University of Tsukuba, Japan, 1998–2004.
- *The Thai King’s Scholarship*, Asian Institute of Technology (AIT), Thailand, 1995–1996.

Computer Literacy

Microsoft Word, Excel, PowerPoint, LCA Software (Simapro); Aspen Plus, FlexPde, AutoCAD, Linear Programming (QSB), etc.

Courses Studied at Post-graduate Level

Food packaging (audit), Food safety management systems (audit), LCA for Engineering (audit), Heat transfer in Porous Media, Project Development, Renewable Energy, Biomass Conversion, Advanced bioresource technology development, Food & natural resource engineering, Advance biochemistry of foods, Basic study on agrobiological research science for foreign students, Seminar in bioresource technology development I, Seminar in bioresource technology development II, Research in bioresource technology development I, Research in bioresource technology development II, Topics in agricultural engineering IV, Advance bioproduction & machinery, Information engineering for food processing, Biomass conversion engineering.

Courses Studied at Graduate and Under-graduate Level

Instrumentation & measurement techniques, Agro-industrial system development, Production management, Farm irrigation systems, Agricultural systems analysis, Manufacturing and testing of agricultural equipment, Theory of field machinery, Agricultural mechanization & management, Agricultural machinery laboratory, Biomass conversion, Computer aided design.

U⁴Project work & report, Processing & storage of farm crops, Refrigeration & air conditioning, Computer science, Electrical machinery & automatic control, **Engineering management and administration**, Machine design & agricultural machinery design & analysis, Pumps, tube-wells & motors.

U³Statistics, Elements of crop protection, Agricultural power, Agricultural machinery, Theory of machine, Irrigation & drainage engineering, **Elementary economics** & agricultural extension, **Production engineering** (manufacturing methods, quality control & metallurgy), Rural electrification engineering.

U²Surveying, Engineering mechanics & mechanics of machinery, Electrical engineering, Thermodynamics & heat engines, Strength of materials & theory of structures, Fluid mechanics & hydraulics, **Engineering materials, estimating & costing**, Manufacturing methods & workshop technology.

U¹**Introductory food science**, Soil science, Engineering drawing, Engineering shop, **Fundamentals of ecology**, Agronomy, Physics, Mathematics, Chemistry

Professional Activities: Manuscript Reviewer

1. Journal of Environmental Management
2. Journal of Environmental Science and Technology
3. Journal of Cleaner Production
4. Resources, Conservation & Recycling
5. Energies (Open access)
6. Journal of Biobased Materials and Bioenergy
7. Waste and Biomass Valorization
8. Journal of Industrial Ecology
9. Journal of Food Engineering
10. AIMS Energy

Guest Editor/Editorial Board Member

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 - **Review Editor:** Environmental Impact Assessment
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 - **Guest Editor:** Renewable energy systems and agro-residue management (<https://www.aimspress.com/newsinfo/125.html>).
6. Journal of Food Science and Nutrition Therapy (<https://www.peertechz.com/journals/journal-of-food-science-and-nutrition-therapy>)