

Supporting Information

Author supplied and index keywords for articles published between 2000 to present are downloaded from SCOPUS database [1]. Primarily, author supplied keywords are used for analysis, and indexed keywords are used as a substitution in absence of author supplied keywords. A bibliometric analysis software—Vosviewer was used to identify the relevant keywords by selecting keywords with at least 10 minimum numbers of occurrences [2]. Further manual processing was done to remove irrelevant terms not removed by Vosviewer. Additionally, a thesaurus file was created to aggregate identified keywords to pre-defined topics. The thesaurus file also contained VOSviewer identified plurals and singular forms and abbreviations of the same word to prevent double counting. For example, keywords life cycle assessment, LCA and life cycle analysis were replaced by topic life cycle assessment.

Table S1 includes the comprehensive list of Vosviewer identified relevant keywords with their substitution topic areas. The co-occurrence data is mapped through a network software ORA [3].

Table S1. Aggregation scheme for author supplied and indexed keywords with their topic areas and general theme.

Theme	Topic	List of Keywords
Environmental & Human Wellbeing	Food Security	Food Supply, food crop, grain crop, food, food industry.
	Human Health	Mortality, asthma, human health, allergens, lung, children, cancer, mutagens, mortality, exposure, toxicity, female, male, health risk, adult.
	GHGs	Carbon dioxide, climate change, CO ₂ , methane, CH ₄ , nitrous oxide, N ₂ O, global warming, emissions, radiative forcing, greenhouse gas, greenhouse gases, GHGs, GHG, carbon emissions, carbon, carbon footprint, GWP, greenhouse gas emission, ghg emission.
	Air Quality (Non-GHGs)	Particulate matter, Volatile organic compounds, PM, particulate matter, PM ₁₀ , SO _x , sulfur oxides, NO _x , nitrogen oxides, carbon monoxide, smog, dust, NH ₃ , air pollutants, air pollutant, atmospheric pollution, air pollution, air quality.
	Soil Resources	Soil organic carbon, soil fertility, soil erosion, soil organic matter.
	Land Use Change	Indirect land use change, direct land use change, land use change, land, deforestation, habitat, wetland, grassland, prairie, pasture, forest, landscape.
	Water Resources	Groundwater, water footprint, water, wastewater, runoff, sediment, alkalinity, eutrophication, ocean.
	Biodiversity	Wildlife, biodiversity, richness, pollinators, insects, animals, bird

Table S1. *Cont.*

Theme	Topic	List of Keywords
Environmental & Human Wellbeing	Life Cycle Assessment	Life cycle analysis, life cycle assessment, LCA, environmental life cycle assessment, life cycle assessment (LCA), life cycle analysis, life cycle, environmental sustainability, environmental impact, environmental impacts.
	Ecosystem Services	Ecosystem services, ecosystems, ecosystem
Economy	Cost of Production	Technoeconomic analysis, infrastructure, cost, costs, capital, investment, investments, financing, infrastructure, labor, research and development, utilities, expense, commercialization, viability, economics, industrial economics, environmental economics, agricultural economics, break-even price, economic analysis, economic impact, techno-economic assessment, techno-economic, technoeconomic analysis, technoeconomic evaluation, technoeconomics, economic development.
	Market Forces	Supply and demand, cost competitiveness, market, price
	Policy	RFS2, EISA, LCFS, policy, law, legislation, laws, tax, taxation, incentive, low carbon fuel standards, subsidy, performance standards, energy security, energy independence, biotechnology policy, policy making, energy policy, biofuels policy, environmental policy, policy analysis, pricing policy, policy guidelines, pollution policy, policy making, regulation, decision makers, biofuels mandate, renewable fuel, biofuel mandates, decision making, agricultural policy.
	Trade	Import, trade, export, tariff
Production Distribution, Technology, & Infrastructure	Feedstock Production and Agronomics	Biomass production, agronomics, agronomy, planting, tillage, biomass production, cultivation, fertilizer, pesticides, herbicides, irrigation, tillage, crop rotation, bioreactor, open raceway pond, photobioreactor, agriculture management, establishment, coppice, intensification, yield, monoculture, breeding.
	Feedstock Logistics	Pretreatment, biomass transportation, chipping, harvest, harvesting, biomass transportation, felling, flocculation, dewatering, pretreatment, pre-treatment.
	Fuel Distribution and Infrastructure	Pipeline, fuel storage, distribution, shipping, fuel storage, storage tank, flexible-fuel vehicle, FFV, blend, viscosity, engine, corrosion, B20, E85, E10, E15, B100
Biofuels	Aviation Fuel	Aviation fuel, jet fuel, aviation fuels, jet fuels

Table S1. Cont.

Theme	Topic	List of Keywords
Biofuels	Biodiesel	Biodiesel, biodiesel blend, biodiesel resources, biodiesel products, biodiesel fuel, biodiesel plants, biodiesel blend
	Ethanol	Ethanol, lignocellulosic ethanol, bio ethanol, corn ethanol, fermentation, fuel ethanol, ethanol productivity, cellulosic ethanol, bioethanol, ethanol alcohol, ethanol production, ethanol fuel, ethanol blend
	Hydrocarbon Biofuel	Drop in replacement biofuel, renewable diesel, drop-in replacement biofuels, green diesel
	Butanol	Butanol, biobutanol
	Biogas	Biogas, biomethane
Conversion Platforms	Pyrolysis	Fast pyrolysis, pyrolysis oil, bio-oil, pyrolytic oil, pyrolysis, temperature, catalytic pyrolysis, pyrolysis product, fast pyrolysis, torrefaction
	Gasification	Gasification, BTL, Fischer tropesch, synthesis gas, syngas
	Transesterification	Esterification, FAME, fatty acid methyl esters, esterification, fatty acids, methyl esters, methyl ester, tryglycerol
	Hydrolysis	Hydrolysis, fermentation, yeast, <i>Saccharomyces cerevisiae</i> , saccharification, sugars, hydrolysis, enzymatic hydrolysis, dark fermentation, simultaneous saccharification, metabolism
	Anaerobic Digestion	Anaerobic digestion
Feedstocks	Woody Biomass	Willow, poplar, wood fuel, woodfibers, wood, wood products, timber, timber markets, logging, wood wastes, wood management, wood thinning, softwood, wood chip, hardwood, wood pellets, wood pellet, oak, forest biomass
	Perennial Grasses	Switchgrass, <i>Miscanthus</i> , sweet sorghum, sorghum
	Oil Seeds	<i>Jatropha</i> , soybean, rapeseed, <i>Jatropha</i> oil, <i>Jatropha curcas</i> , soybean oil, soybean, sunflower, rapeseed oil, sunflower oil, palm oil, oilseed, oilseeds, oil seed, rapeseed methyl ester
	Algae	Microalgae, macroalgae, chlorella, <i>chlorella vulgaris</i> , macro algae, macroalgae, micro algae, algal biomass, algal biofuel, microalga, alga, macro-algae
	Agricultural Residue	Sugarcane bagasse, corn stover, forest residue, bagasse, sorghum bagasse, crop residue, agricultural waste, corn stover, wheat straw, forest residue, anaerobic digestion

Table S1. *Cont.*

Theme	Topic	List of Keywords
Feedstocks	Industrial & Municipal Waste	Waste cooking oil, vegetable oil, industrial waste, municipal solid waste, waste oil
	Grains & Sugar Crops	Corn, wheat, rye, sugar cane, zea mays, maize, zea may
Thermodynamics	N/A	Exergy, emergy, thermodynamics, exergetic efficiency, exergy analysis, emergy analysis, thermodynamic efficiency.

References

1. Ballew, B.S. Elsevier's Scopus[®] Database. *J. Electron. Resour. Med. Libr.* **2009**, *6*, 245–252.
2. Dewulf, J.; van Langenhove, H.; Muys, B.; Bruers, S.; Bakshi, B. R.; Grubb, G. F.; Paulus, D. M.; Sciubba, E. Exergy: Its potential and limitations in environmental science and technology. *Environ. Sci. Technol.* **2008**, *42*, 2221–2232.
3. Carley, K.; Pfeffer, J.; Reminga, J. *ORA User's Guide 2013*; Institute for Software Research, School of Computer Science, Carnegie Mellon University: Pittsburgh, PA, USA, 2013.