

## Journal of Resource Recovery

It is unbelievable that currently almost 92% of the global resources, including metals, wood, chemicals, concrete, plastics, etc., are only being used once, and then are just transferred to waste. Thus, the current production system in various industrial sectors, which is almost completely based on consuming raw materials from natural resources, from one hand, and limits in the availability of these resources on the Earth, from another hand, has been the driving force for changing the conventional consumption approaches towards resource recovery from residue, waste, and disposed materials and chemicals (Chimanlal et al., 2022; Goulart, 2021; Puyol et al., 2017). Using the non-renewable resources in various sectors, such as metals (Li, Cd, etc.) in electronic devices, oil and gas in energy/fuel and polymers production, and phosphorous in agricultural farming, have seriously suffered from long-term sustainability challenges (Garske & Ekaradt, 2021; Kumar et al., 2021). Therefore, the self-sufficient economy with close production cycles, which can provide the chance of resource sustainability, have been considered by certain regions, such as European countries, Singapore, Japan, etc. (Bryndin, 2020; Madurai Elavarasan et al., 2022).

According to the concept of the circular economy, a global sustainable development can be achieved if: *i*) the production system is become auto regenerative, *ii*) the generated waste in this system is recycled and then converted into raw material for a circular production, and *iii*) the whole,

production is driven using renewable energy sources (Geissdoerfer et al., 2017; Puyol et al., 2017). That is why the upcoming decades are key eras in enabling and promoting promising technologies for a sustainable future.

The resource recovery approaches can be considered and investigated in four main sections, including resource recovery from liquid waste, resource recovery from solid waste, resource recovery from gaseous waste, and energy recovery. These main sections, however, can be further divided into more sub-sections. During the past decades, an increasing trend has been observed in publications and R&D activities to develop innovative technologies, processes, and tools to enhance the resource recovery. Fig. 1 illustrates the trend of publications related to technologies for resource recovery in the above-mentioned main sections, which have been reported in the open literature since the year 2000. The search for collecting the data was carried out using the SCOPUS database and the keywords “resource recovery” and the specific section term, including “liquid resources” (e.g., water, wastewater, brine, etc.), “solid resources” (e.g., solid waste, biomass, etc.), “gaseous resources” (e.g., stock gas, CO<sub>2</sub>, etc.), and “energy resources” (e.g., waste thermal heat, waste cooling energy, etc.). As could be observed, the increasing trend in all sections is clear. However, among them, the resource recovery from liquid sources (i.e., water and wastewater) towards metals, value-added chemicals and nutrients is newer.

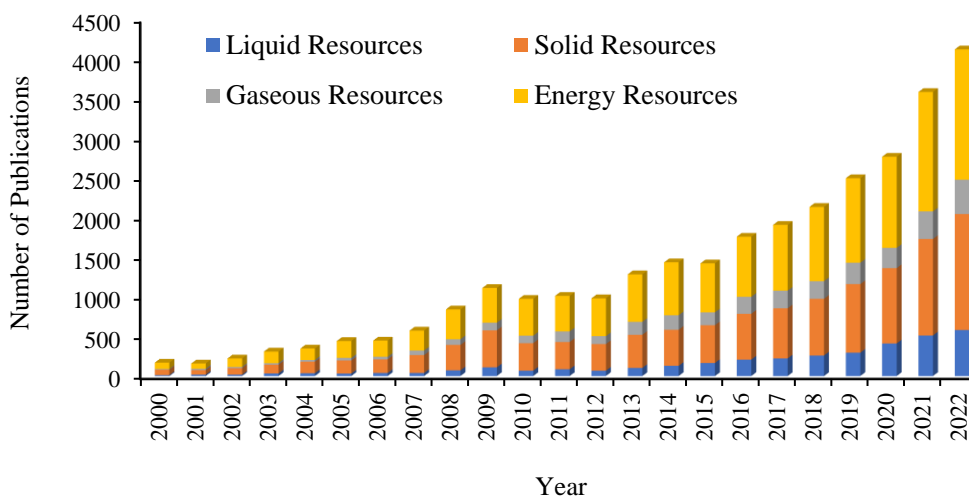


Figure 1. Publication versus year indicating the trend in resource recovery from four main resources, i.e., liquid, solid, gaseous, and energy (Data based on search in SCOPUS).

During the last years, there have been some journals which have covered the papers in the field of resource recovery. However, this important topic has been one among many other in the aim and scopes of these journals. Moreover, recently, an unexampled rise of interest in resource recovery technologies and relevant topics could be observed. New technologies and achievements on this interesting topic have expanded rapidly, as well. These all have therefore encouraged us to launch a new journal, which specifically covers the publications in the field of resource recovery. The *Journal of Resource Recovery* (JRR) aims to publish peer-reviewed, high-quality papers with significant novelty and impact in all areas of technologies for resource recovery. This journal provides a forum for publishing a wide range of manuscripts, including Research, Reviews, Case Studies, Perspectives, Registered Reports, Comments, and Brief Communications, from across the full range of disciplines related to resource recovery. All these types of contributions should highlight the development of sustainable technologies focusing on recovery of value-added materials and chemicals from waste resources. Moreover, all submissions must show a distinctive link with resource recovery technologies and applications.

The co-Editors-in-Chief are humbled and delighted to introduce the *Journal of Resource Recovery* and present the very first issue of JRR. In this issue, a wide variety of topics have been covered. On the theme of greener membrane technology, there is a review paper which discuss the opportunities and challenges for utilizing solid wastes in membrane fabrication. Two grand challenge papers critically discuss the resource recovery from polymer composites and fuel cell technology towards resource recovery. Another comprehensive review paper as well as an engineering advances paper discuss the strategies for optimum enhance oil recovery.

We look forward to receiving many more high quality and innovative papers in the future!

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