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CIRCULAR ECONOMY OPTIONS FOR MEDICAL TEXTILE WASTE

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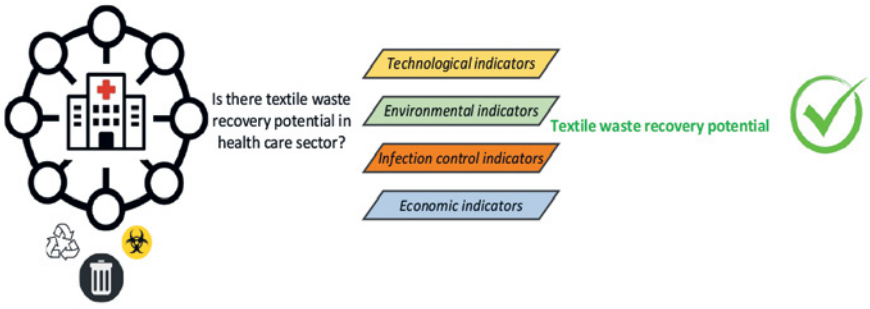
Abstract – To support circular economy and sustainability, all European Union Member states are obliged by 2025 to collect textiles separately. Textile waste has become a part of the Sustainable Development Goals that aims to innovation in the textile sector including textile collection, reuse, sorting and recycling. Along this, the healthcare industry has a significant impact on the environment: it releases annually around 26 Gt of CO_2 greenhouse gas emissions and generates on an average 3 kg of medical waste per bed per day in healthcare facilities in Europe. The main focus of the research paper is to quantify the material flow of textile waste generated/likely to be generated in the health care sector as well as to calculate its potential for material recovery. Since medical textile recovery has limitations in sorting and recycling activities due to prevalence of infections, a systematic approach in textile waste management needs to be applied both at collection phase and treatment phase. Within the present research, a database with health care products categories (42 units) are developed, and the categories are characterized by textile type, application in health care sector, fibre, contamination level after use, potential product for substitution. To measure the recovery potential of the textile waste, the indicator analysis considering technological, environmental, infection control, and economic aspects is performed.

Keywords – Circular economy; healthcare waste; indicator analysis; sustainability of fibre



Algorithm for the textile waste recovery potential in health care sector.

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