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Sommario/riassunto	<p>Some terms, such as eco-friendly, circular economy and green technologies, have remained in our vocabulary, because the truth is that mankind is altering the planet to put its own subsistence at risk. Besides, for rationalization in the consumption of raw materials and energy, the recycling of waste through efficient and sustainable processes forms the backbone of the paradigm of a sustainable industry. One of the most relevant technologies for the new productive model is anaerobic digestion. Historically, anaerobic digestion has been developed in the field of urban wastes and wastewater treatments, but in the new challenge, its role is more relevant. Anaerobic digestion is a technologically mature biological treatment, which joins bioenergy production with the efficient removal of contaminants. This issue provides a specialized, but broad in scope, overview of the possibilities of the anaerobic digestion of lignocellulosic biomass (mainly forestry and agricultural wastes), which is expected to be a more promising substrate for the development of biorefineries. Its conversion to bioenergy through anaerobic digestion must solve some troubles: the complex lignocellulosic structure needs to be deconstructed by pretreatments and a co-substrate may need to be added to improve the biological process. Ten selected works advance this proposal into the future.</p>