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Hybrid leaching: An efficient green technique for the management of metals from E-waste

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Abstract

Management of metal pollution associated with E-waste is widespread across the globe. Currently used techniques for the extraction of metals from E-waste by using either chemical or biological leaching have their own limitations. Chemical leaching is much rapid and efficient but has its own environmental consequences, even the future prospects of associated nanoremediation are also uncertain. Biological leaching on the other hand is comparatively a cost effective technique but at the same moment it is time consuming and the complete recovery of the metal, alone by biological leaching is not possible in most of the cases. The current review addresses the individual issues related to chemical and biological extraction techniques and proposes a hybrid-methodology which incorporates both, along with safer chemicals and compatible microbes for better and efficient extraction of metals from the E- waste.