

# **Environmental Biotechnology for Sustainable Development**

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## **Abstract**

A huge quantity of domestic and industrial waste is generated annually in Malaysia as the country is moving forward to the industrial development. The major waste streams are mainly household wastewaters managed by the Indah Water Konsortium (IWK) is a national sewerage company and oil palm industrial (OPI) waste at private sector with their own treatment facilities. Most of the treatment plants are based on conventional methods of treatment and management which lead to the high cost, time consuming, environmental pollutions and limiting sustainable future. Current focus of research and development to the efficient waste management is not only the treatment processes but also turning waste into valuable products which could be a complete and potential solution with generation of revenue and zero waste emission at the point source for sustainable development. Therefore the global attention on this issue implicating that an environmental friendly system must be proposed by converting the cheap and abundant renewable resources into valued bio-products. The paper highlights the overview of the recent researches on resource recovery from domestic and industrial wastes especially biocatalysts and bioenergies through green technology approach. The topics include the sources and characteristics of selected waste i.e. IWK sludge and OPI waste, and proposed alternative and potential solution for effective management through recovery of bio-products. A case study on pilot scale set up at IIUM for the cellulase production from IWK sludge is also highlighted.