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## Waste to Sustainable Energy

MFCs – Prospects through Prognosis

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## Chapter 6

# Role of Biocatalyst in Microbial Fuel Cell Performance

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### **Abstract:**

The contemporary world is suffering from several problems, such as excessive population, air pollution, water pollution, wastewater generation, and energy crisis (Hanjra and Qureshi 2010). Among those, the excessive wastewater generation and energy depletion are most critical cruxes, since those cannot be controlled due to rapid industrialization and population growth (Schneider et al. 2013). In the past decade, intensive research efforts have been dedicated to find alternative renewable energy sources, particularly energy generation through the sustainable treatment of wastewater (Nayak et al. 2016). Renewable energy sources are considered sustainable and carbon neutral substitutes to fossil fuels are highly needed to relieve the global environmental deterioration and energy crisis (Kothari et al. 2010), as shown in Fig. 6.1. According to the European Renewable Energy Council (EREC), around 50% of the global energy supply will be supported by renewable energy in 2040 (Sun et al. 2016).

**Keyword:** Air Pollution; Water Pollution; Wastewater Generation; Energy Crisis