Industrialization and other human activity represent significant environmental hazards. Recent trends and future growth for effectively removing harmful contaminants by enzymatic degradation are also thoroughly discussed. Through their catalytic reaction mechanism, microbial enzymes may degrade and eliminate harmful environmental pollutants and transform them into non-toxic forms. The principal types of microbial enzymes which can degrade most hazardous environmental contaminants include hydrolases, lipases, oxidoreductases, oxygenases, and laccases. Several immobilizations, genetic engineering strategies, and nanotechnology applications have been developed to improve enzyme performance and reduce pollution removal process costs. Additionally, there is a gap in the suitable approaches considering toxic multipollutants bioremediation using enzymatic applications.

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