Emerging synthetic enabling technologies (Future Prospects for Industrial Biotechnology)

Industrial biotechnology cannot grow simply by developing technology for commercial-scale industrial production. Now is a time of unprecedented progress in the life sciences and industrial biotechnology benefits from advances in a range of core technologies in molecular biology, especially high throughput genomics. This approach is being used to investigate microbial life in extreme environments such as deep oceans. Other technologies that can be used to modify and improve genes and enzymes are metabolic engineering and directed evolution. All of these technologies seem to come together in the new discipline of synthetic biology, which, although already a billion dollar business, is in its infancy. Synthetic biology offers the prospect of creating synthetic life forms and enzymes that either make new materials more effectively, or can create completely new products in a single organism that were previously not possible.
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